A Foundation Theory of Evidence

DAVID S. SCHWARTZ*

This Article argues that foundation, not relevance, embodies our fundamental understanding of admissible evidence. The foundation principle—only partially and somewhat obliquely stated in the Federal Rules of Evidence—is a requirement that evidence be case-specific, assertive, and probably true. As such, it is a logical precondition for relevance. A foundation-based theory of evidence explains, in a way that a relevance-based theory cannot, how the basic requirements of admissible evidence connect to our fundamental understanding of legal claims. Specifically, the foundation requirement is simply an extension of the general requirement that legal remedies must be based on probably true claims. A claim for relief cannot be more true than the least probable evidentiary fact needed to help prove that claim. Evidentiary facts, which must of necessity be significantly more detailed than the overall factual claim, must therefore be probably true. The foundation theory resolves certain paradoxes and longstanding problems in evidence theory, and sets out a new account of foundation, which has been widely misunderstood by evidence commentators.

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INTRODUCTION

It is a commonplace among evidence scholars to assert that relevance is the foundational principle of evidence law. They are wrong. The foundational principle of evidence law is foundation.

Those who call relevance the “foundational” or “fundamental” principle of evidence law view it as the “general theory” of admissibility of evidence: relevance is a sufficient condition for the admission of evidence, requiring that “all evidence with any probative value, however slight, be admitted unless some specific exclusionary rule provides otherwise.” At the same time, foundation is inadequately understood and explained by evidence scholars and courts. Appear-


2. 1 John Henry Wigmore, Evidence in Trials at Common Law § 14.1, at 714 (Peter Tillers rev., 1983); see also id. § 9, at 655.
ing to be neither a rule of admission nor exclusion, foundation is uniformly explained away as a technical hoop for certain relevant evidence—primarily documents and things—to jump through before it can be admitted.

What seems to have escaped notice is that foundation is a pervasive concept built into the structure of evidence and trial. The concept of relevance assumes the existence of evidence and is thus radically incomplete as a definition of evidence. Foundation, on the other hand, tells us what evidence is: a case-specific assertion of fact that must be probably true in order to lend support to a legal claim.

As obvious as it may seem, that explanation of foundation is missing from all conventional accounts. Moreover, a focus on the primary importance of relevance without an understanding of foundation has led a number of evidence scholars into serious mistakes. An influential line of scholarship has argued that the concept of conditional relevance under Federal Rule of Evidence (FRE) 104(b), a cornerstone of the concept of foundation, is incoherent. This argument challenges the very notion of foundation and its requirement of case-specific, probably true assertions. This misconceived argument has led to misguided proposals for revised understandings of evidence law and even for rule changes to the Federal Rules themselves.3

In the most developed version of this implied attack on the foundation concept, Professor Dale Nance offers the following hypothetical illustration: In a murder case in which the identity of the killer is disputed, a witness testifies, without any further detail, “I know who the killer is. It is the defendant.” According to Nance, “[t]here can be no doubt that this testimony is relevant, at least if the identity of the killer is contested,” and he finds it surprising that any modern evidence commentators would disagree.4 Nance’s hypothetical is best understood as a paradox. It is inconceivable that the prosecution would offer this testimony in a real trial as “relevant evidence,” or that a court would admit it. Yet Nance is correct that the conventional theory of relevance cannot explain why not. Nance’s paradox serves as a challenge to any “fundamental” general theory of the admissibility of evidence.

Professor Peter Tillers, in his 1983 revision of the Wigmore treatise, observed that “conditional relevance” (read “foundation”) indeed seems to be ubiquitous, but took that to be some sort of unintended oddity lacking any theoretical basis:

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3. See infra section I.D.3; see also Nance, supra note 1, at 448 (stating that “a major revision of evidence law may be in order” if a persuasive theoretical justification for the concept of foundation is not established).

4. Nance, supra note 1, at 489. I do not suggest that Nance favors the admission of such testimony; indeed, his “best evidence” theory offers an argument against its admission. See generally Dale A. Nance, The Best Evidence Principle, 73 IOWA L. REV. 227 (1988). My point is that the conception of relevance maintained by Nance and most other evidence scholars necessarily (and wrongly) deems this kind of evidence to meet the FRE 401 standard of “relevance.” See Fed. R. Evid. 401 (“Relevant evidence” means evidence having any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence.”).
A problem of conditional relevancy is buried in every instance of circumstantial evidence and, perhaps, in every instance in which evidence of any kind is offered. . . . No one, however, seems to want to stretch the doctrine of conditional relevancy to such extremes. But in what principled manner is the doctrine of conditional relevancy to be limited? This is the unanswered question. . . . No answer to this question has even been attempted.5

This Article answers that question. I argue that foundation, not relevance, embodies our fundamental understanding of admissible evidence. The foundation principle—only partially and somewhat obliquely stated in the Federal Rules of Evidence—is a requirement that all evidence be case-specific, assertive, and probably true. As such, it is a logical precondition for relevance, a concept subsidiary to foundation. As a requirement of all evidence, it is necessarily ubiquitous, and its ubiquity is neither surprising nor problematic. A foundation-based theory of evidence explains, in a way that a relevance-based theory cannot, how the basic requirements of admissible evidence connect to our fundamental understanding of legal claims.

In Part I of this Article, I argue that foundation has been generally mistaken by evidence scholars as a narrow, technical hurdle for the admissibility of exhibits, and that its logical connection to relevance has been only dimly understood. I then show that a broad foundation principle, while not expressly identified in the Federal Rules of Evidence, is implicit in a complex of rules comprising FRE 602, 701, 901, and 104(b). I go on to identify various problems and paradoxes concerning relevance, all of which arise from the failure to understand that relevance is not a sufficient condition of admissibility and that it is a concept subsidiary to foundation.

In Part II, I lay out the theory of foundation, which I define as a requirement that evidence, in order to be relevant and admissible, must be case-specific, assertive, and probably true. I show how this principle can be derived from the nature of claims as expressed in the concept of burden of production. Legal remedies must be based on probably true claims; as I argue, a claim is properly understood as a single fact, not analytically distinct from the detailed narrative evidence used to prove the claim. Because the claim entails this detailed narrative evidence, under the logical doctrine of entailment, every evidentiary fact needed to prove the claim must be at least as probable as the overall claim itself—and must therefore be probably true. Evidence that expresses improbable assertions or mere generalizations lacks the requisite qualities of foundation and cannot be logically relevant.

In Part III, I defend the foundation theory by considering potential objections. In particular, I dispel the intuitively appealing but incorrect notion that plausible-but-improbable evidence can make a fact of consequence more probable, and I refute the critique of conditional relevance advanced by several leading scholars.

5. 1 Wigmore, supra note 2, § 14.1, at 714–15 n.10.
The foundation theory shows the falsity of Nance’s paradox and resolves the longstanding “theoretical impasse” over conditional relevance. It further explains why the standard for the foundation of a document happens to be identical to the standard for summary judgment. This latter point, which has long called for a theoretical explanation, is rarely remarked upon or explained by evidence theorists, who seem to treat it as merely an intriguing coincidence.

I. Foundation and Its Critics

Broad assertions about the fundamentality of relevance fail to recognize how little the basic concept of relevance tells us about the structure into which evidence is admitted at trial. At the same time, contemporary scholarship fails to articulate a coherent or complete account of foundation and its relationship to relevance.

In this Part, I will describe the standard account of foundation and show that practitioners, courts, and commentators typically take an unduly narrow view of foundation, as meaning only a demonstration of the identity and genuineness of an exhibit. Even those commentators who recognize that foundation extends more broadly nevertheless fall short of offering a comprehensive understanding of how foundation functions in the law of evidence. I will then argue that, although the word “foundation” does not appear in the Federal Rules, its existence as an underlying structure is implicit in a complex of rules, albeit an implication that has been largely missed by evidence scholars. Federal Rules 602 (Lack of Personal Knowledge), 701 (Opinion Testimony by Lay Witnesses), and 901 (Requirement of Authentication or Identification) provide significant indications of a unifying foundation principle. And the concept of “conditional relevance” under FRE 104(b) is widely recognized to be closely related to FRE 901, but no one has satisfactorily explained the implications of that relationship for foundation—and relevance—more generally.

Finally, I will argue that the failure to understand foundation, coupled with the conventional understanding of relevance, has given rise to the mistaken idea that improbable assertions of fact can be deemed relevant evidence. Further, it has served as a base from which to attack the coherence of the concept of conditional relevance and, by extension, foundation itself.

A. The Standard Account of Foundation

Foundation gets a bad rap. Law students and less trial-savvy lawyers tend to look at foundation as an impediment that is overcome by the incantation of magic words. New trial lawyers or law students, struggling to conduct a direct examination, flounder around trying to “lay a foundation” for their witness’s testimony or to move an exhibit into evidence. They also try to elicit a witness’s

6. Nance, supra note 1, at 449; see infra section I.D.3.
unfounded opinion or speculation about the intentions or motivations of others; failing to see what is missing—a set of facts sufficient to establish the witness’s firsthand knowledge of the substance of her testimony—they resort to stubbornly re-asking the same question in different words. Rookie trial lawyers or trial advocacy students, trying to introduce an exhibit, fall back on rote, semi-random litanies of questions about dates or locations of files or who showed whom the document, hoping thereby to stumble over the right combination of answers to get the judge to receive it in evidence. Big-firm litigators with minimal trial experience propound voluminous requests to admit the “genuineness” of boxes of documents obtained in discovery, hoping, without knowing exactly how, that the answers will eliminate foundation objections if the case ever goes to trial.7 Semester after semester, evidence professors like myself spend two to four class hours on foundation, salting in the phrase, “evidence sufficient to support a finding that the matter in question is what its proponent claims,”8 hoping the repetition of that enigmatic phrase will produce enlightenment. But it doesn’t. In these manifestations, foundation is narrow, technical, eye-glazing, and dimly understood.

Evidence scholars have not helped clarify matters. Many scholars provide an unduly limited conception of foundation or misunderstand it entirely. According to the prevailing but unduly narrow understanding, foundation refers to the identity and authenticity of exhibits (FRE 901), and the firsthand knowledge requirement for lay witnesses (covered directly in FRE 602).9

Treatises and textbooks typically treat Rules 602 and 901 as exhausting the

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7. See FED. R. CIV. P. 36(a)(1)(B) (“A party may serve on any other party a written request to admit, for purposes of the pending action only, the truth of any matters within the scope of [discovery] relating to . . . the genuineness of any described documents.”).
8. FED. R. EVID. 901(a).
9. Professor Imwinkelried is one of the few commentators to commit himself to the ubiquity and importance of foundation, but he defines the concept too broadly. According to Imwinkelried, “[w]henever Evidence law makes proof of a fact or event a condition to the admission of an item of evidence, that fact or event is part of the foundation for the evidence’s admission.” EDWARD J. IMWINKELRIED, EVIDENTIARY FOUNDATIONS § 1.02[1], at 3 (7th ed. 2008). Professor Swift likewise seems to view foundation as referring to any question of preliminary fact on which the application of an evidence rule depends, encompassing both Rules 104(a) and (b). See Eleanor Swift, A Foundation Fact Approach to Hearsay, 75 CALIF. L. REV. 1339, 1355 (1987) (defining “foundation facts” as the factual circumstances affecting the reliability of a hearsay declarant’s statement); see also ALLEN, KUHNS & SWIFT, supra note 1, at 518 (equating “preliminary facts” required for the application of hearsay exceptions and exemptions with “foundational requirements”).

This definition makes foundation coextensive with the concept of “preliminary fact” under Rules 104(a) and (b) combined. But there are crucial distinctions between the respective types of preliminary fact in those two rules that are worthy of separate categorization; the two rules reflect distinct theoretical underpinnings. See ALLEN, KUHNS & SWIFT, supra note 1, at 239–43 (discussing the differences between Rules 104(a) and (b)); WEINSTEIN & BERGER, supra note 1, § 104.01; 1 WIGMORE, supra note 2, § 14.1, at 704 (distinguishing between “legal rules pertaining to the factual predicate necessary to show that evidence is ‘competent’ and therefore admissible,” and “legal rules pertaining to the admissibility of conditionally relevant evidence”). Reserving the word “foundation” for 104(b)-type questions comports both with evidence law’s traditional association of “foundation” with “evidence sufficient to support a finding,” and with ordinary language, which associates “foundation” with evidentiary support for conclusions (for example, “well-founded conclusions”). FRE 104(b) is discussed further infra section I.C.
topic of foundation. Because establishing the foundation for eyewitness testimony under FRE 602 is relatively simple, discussion of foundation collapses into “authentication or identification” of exhibits under FRE 901. Some authorities do not even use the word “foundation” as a major category at all. Even the treatments of FRE 901 are often underdeveloped or mistaken; it appears to be a widely held assumption that FRE 901 is merely a requirement to make a prima facie showing that an exhibit is not a fraud or forgery.

Attempts to theorize and explain the relationship between FRE 901 and relevance are at best suggestive, and typically vague and incomplete. Treatise writers recognize that the “authentication” and “identification” requirements of FRE 901 work to show that an exhibit is “somehow related” or “connected” to the “parties or issues” in the case, but fall short of explaining exactly how authenticated exhibits relate to the case. These shortcomings are revealed in the following quotation from a leading treatise, which is one of the better explanations of foundation to be found:

First the proponent asserts that a proffered item is relevant to prove (or disprove) a fact of consequence in the case. This assertion of relevance then determines what it is the proponent claims an offered item to be for purposes of authentication, typically that it is connected to a specific person or to one of the litigated events in the case. For example, in a prosecution for possession of an illegal substance, if a plastic bag of white powder is offered into evidence, the government would assert that the bag is relevant both because the defendant possessed the bag and because its contents are illegal. The requirement of authentication would be satisfied by evidence sufficient to support a finding that it is the very bag that was seized from the possession of the defendant. It is this “connection” to a person that is commonly proved to identify or authenticate the exhibit. Other facts beyond the scope of Rule 901, such as the illegal contents of the bag, may also be necessary to make an item relevant.

The writers of this particular treatise correctly point out that the “claim” about an exhibit made by the offering party is based on the argument for the

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10. See, e.g., Mueller & Kirkpatrick, supra note 1, at 1065, § 9.1, at 1066 n.2 (entitling Chapter 9 “Foundational Evidence, Authentication,” and mentioning in a footnote that “[l]ive testimony requires a different type of foundation” made under FRE 602); Weinstein & Berger, supra note 1 (“foundation” in Index cross-referenced exclusively to discussion of FRE 901).
12. See, e.g., Mueller & Kirkpatrick, supra note 1, § 9.1, at 1065 (“Authentication thus serves to enhance the accuracy of the factfinding process by screening out evidence that might be false or otherwise unreliable, whether as the result of fraud or innocent mistake.”); Weinstein & Berger, supra note 1, § 901.02[2], at 901–12 (“Rule 901(a) suggests the inherent necessity that an exhibit be trustworthy to be admissible. A showing that an exhibit is what it purports to be generally also shows that it is trustworthy.”).
13. See, e.g., Allen, Kuhns & Swift, supra note 1, at 208 (“For purposes of Rule 901, [a connection between the item and the parties or the litigated events in the case] is typically what courts require the proponent to prove in order to identify or authenticate an exhibit.”).
14. 2 McCormick on Evidence, supra note 11, § 212, at 5–6 (footnote omitted).
item’s relevance. But their explanation then lapses into vagueness, suggesting that it is enough to show a “connection” between the item and a party or issue in the case.\textsuperscript{15} And the treatise is positively mistaken when it asserts that “the illegal contents of the bag” is a fact “beyond the scope of Rule 901.” Holding up a bag of white powder and having the witness testify “this was found on the defendant’s person” does not establish that the substance was cocaine as opposed to, say, baking powder. Having a forensic chemist testify that “the white powder in the bag is cocaine” does not establish that it has anything to do with the defendant. Both are required to complete the foundation under FRE 901, but no treatise provides an account of foundation that tells us why.

The explanation that seems to have eluded commentators is this: a complete foundation requires evidence of all facts that, if true, make the exhibit relevant under the offering party’s theory of the case. In murder cases, weapons are commonly displayed to the jury. To hold up a gun and have the foundation witness testify “this gun belongs to the defendant” or “this gun has the defendant’s fingerprint on it” is manifestly not a complete foundation, even though it “connects” the gun to a “party.” Yes, it is connected to a party, but it still may be irrelevant.\textsuperscript{16} The relevance of the gun requires a theory of the case to connect to. A case theory that would make this gun relevant would be this: “The victim was killed with a gun of this type.” The gun would be relevant in a more attenuated way, though still meeting the “any tendency” threshold, under this case theory: “This gun was purchased by the defendant as part of his plan to kill the victim even though he ultimately used a different weapon.” Even the following case theory (impermissible character issues aside) would make the gun relevant: “The defendant’s gun ownership shows him to be a violent person more likely than others to commit a murder.” Assuming a murder-weapon theory of the case, the complete foundation is “this gun was owned by the defendant and used to kill the victim.” In the cocaine possession case quoted in the treatise excerpt above, the complete foundation is: “This is a bag of cocaine found in the possession of the defendant.” What all these examples show is that some theory of the case must be articulated, and a complete foundation includes those facts necessary to tie the evidence in to that theory.

Evidence commentators tend to allow their understanding of foundation to be misled by the happenstance of courtroom procedures. It is very common that a complete foundation can only be laid by multiple witnesses, each one providing

\textsuperscript{15} For a similar lapse, see \textsc{Weinstein & Berger, supra} note 1, § 901.02[1], at 901–8 to 901–9 (“[A] document that appears to contain relevant information is inadmissible unless the proffering party shows that the document is somehow related to the dispute before the court, as, for example, by showing that it is a record generated by a party and that it concerns transactions at issue in the litigation.” (emphasis added)).

\textsuperscript{16} Consider the classic case of \textsc{People v. Zackowitz}, 172 N.E. 466 (N.Y. 1930), in which then-Judge Cardozo questioned whether guns owned by the defendant but not used in the murder “ha[d] any relevance at all.” \textit{Id.} at 467. See also United States v. Hitt, 981 F.2d 422, 424 (9th Cir. 1992) (noting that a photograph of defendant posing with guns other than the one in question “might well have been excludible [sic] under Rule 402 as totally irrelevant, had a Rule 402 objection been made”).
only part of the foundation. Nevertheless, in such circumstances, the exhibit will necessarily be received in evidence during the testimony of one of those witnesses who has offered only a snippet of the foundation. This is not because the snippet is in itself a complete foundation, but because either (1) the exhibit is admitted conditionally, subject to "connecting up" with other foundation evidence,17 or (2) the other foundation evidence has already been admitted and the current witness’s testimony completes the foundation. In the above-quoted treatise’s example, the cocaine may be admitted (conditionally) into evidence on the testimony of the officer who seized it, or the forensic chemist who tested it, but the foundation is not complete—and the exhibit is not relevant—until both have testified. A complete foundation is necessary to establish the relevance of any offered item of evidence.

Existing efforts to theorize about foundation and its relationship to relevance are exceedingly limited. It is understood that foundation and relevance are related in some way, but some commentators take this connection no further than the idea that a fraudulent exhibit is irrelevant toward proving the point it would have tended to prove had it been genuine.18 The idea that "unreliable,” "untrustworthy,” or “fraudulent” evidence may be irrelevant is suggestive—indeed, it is a corollary to the foundation theory I advance in this Article—but unexplored. More than one eminent scholar denies that foundation has anything to do with relevance.19 The most in-depth analysis of foundation to be generally accepted is the Advisory Committee’s statement that FRE 901 is a special case of “conditional relevance” under FRE 104(b): “In some situations, the relevancy of an item of evidence, in the large sense, depends upon the existence of a particular preliminary fact.”20 But no one has gone on to explain that this is true

17. See FED. R. EVID. 104(b). The rule is understood as authority for the concept of “conditional admissibility,” or “connecting (or sometimes ‘linking’) up.” See Huddleston v. United States, 485 U.S. 681, 690 n.7 (1988) (“In [some] cases it is customary to permit [the offeror] to introduce the evidence and ‘connect it up’ later. Rule 104(b) continues this practice . . . .” (quoting 21 C. WRIGHT & K. GRAHAM, FEDERAL PRACTICE AND PROCEDURE § 5054, at 269–70 (1977))); ALLEN, KUHNS & SWIFT, supra note 1, at 246–47 (discussing conditional admissibility with reference to FRE 104(b)); 1 WIGMORE, supra note 2, § 14.1, at 703 (stating, with earlier reference to FRE 104(b), that “[t]he problem of conditional admissibility largely involves a question of the order of proof; it involves what is called the phenomenon of ‘connecting up’”).

18. Thus, according to Mueller & Kirkpatrick, “[a]uthentication represents a more specific application of the requirement of relevancy,” but apparently only because it “serves to enhance the accuracy of the factfinding process by screening out evidence that might be false or otherwise unreliable.” MUELLER & KIRKPATRICK, supra note 1, § 9.1, at 1065; see also WIGMORE & BERGER, supra note 1, § 901.02[2], at 901–12 (“Rule 901(a) suggests the inherent necessity that an exhibit be trustworthy to be admissible.”).

19. Vaughn C. Ball, The Myth of Conditional Relevancy, 14 GA. L. REV. 435, 467–68 (1980) (“The authentication and identification requirements when analyzed are not matters on which relevancy depends, but requirements for sufficiency findings in addition to relevancy.”); id. at 451 (“[T]he [authentication] requirement is imposed in addition to relevancy and is not a precondition for relevancy.”); NANCE, supra note 1, at 453 (“[C]onditional relevancy either simply confuses the standards for sufficiency with those for admissibility or else serves some function distinct from spelling out the logical implications of the basic requirement of relevance.”).

20. FED. R. EVID. 104(b) advisory committee’s note (emphasis added); see, e.g., DAVID A. SKLANSKY, EVIDENCE: CASES, COMMENTARY, AND PROBLEMS 620 (2003) (“[A]uthentication is best understood as a specific application of a more [general] principle of evidence law: conditional relevance.”); WEINSTEIN
in all situations, and therefore that foundation is in fact an unvarying precondition to relevance. 21 This relationship is at the core of the foundation theory I advance, as argued in more detail below. 22

B. INDICATIONS OF A FOUNDATION PRINCIPLE: FEDERAL RULES OF EVIDENCE 602, 701, AND 901

The word “foundation” does not appear in the Federal Rules of Evidence, but Rules 602, 701, and 901 contain significant hints of a foundation principle. FRE 901(a) provides:

The requirement of authentication or identification as a condition precedent to admissibility is satisfied by evidence sufficient to support a finding that the matter in question is what its proponent claims.23

The use of the word “authentication” together with several of the examples listed in FRE 901(b)24 reinforce the widespread misimpression that FRE 901 deals with exhibits only, and that it is concerned with “genuineness,” which is itself typically misinterpreted to mean preempting concerns about forgery and fraud in their production and presentation.25 It is worth noting that neither the title of FRE 901 (“Requirement of Authentication or Identification”) nor its text in subsection (a) mention the word “exhibit.” The evocative phrase “matter in question” is broad enough to encompass any form of evidence, including testimony.

The core FRE 901 idea equating “evidence sufficient to support a finding that the matter in question is what its proponent claims” with “authentication or identification” strongly suggests that the foundation for evidence is a probably true assertion. Evidentiary facts are necessarily assertive (“this is a bag of cocaine found on the defendant”). “Identification” seems to require stating such an assertion—making a claim about what the evidence is. And “authentication” seems to refer to the sufficiency requirement that that claim can be found to be probably true (that is, can be found “more likely than not”). Whether or not FRE 901 can be read as extending beyond foundation for exhibits, it offers a significant hint of a more ubiquitous foundation concept under which offers of

21. Ronald Allen recognizes the ubiquitous connection between relevance and conditional relevance, but unfortunately he draws the incorrect conclusion that the two concepts are the same. See infra section I.D.3.

22. See infra Part II.

23. FED. R. EVID. 901(a).

24. See, e.g., FED. R. EVID. 901(b)(2) (“Nonexpert opinion on handwriting.”); id. 901(b)(3) (“Comparison by trier or expert witness.”); id. 901(b)(4) (“Distinctive characteristics and the like.”); id. 901(b)(5) (“Voice identification.” (to the extent that it deals with “recording”)); id. 901(b)(7) (“Public records or reports.”); id. 901(b)(8) (“Ancient documents or data compilation.”).

25. See supra note 12 and accompanying text.
evidence require a probably true assertion.

FRE 701, regulating opinion testimony by “lay” or “percipient” witnesses, is an extremely important foundation rule. Its importance is overlooked because of faulty assumptions that it is “limited” to the “special case” of lay opinion. But opinion is such a common form of human expression that it is hardly a special case. Arguably, opinion is the only form of human expression of propositions of fact. Opinion is not meaningfully distinct from “fact,” except that it may be at a relatively higher level of generality. Opinions are allowed when they are “helpful to a clear understanding of the witness’[s] testimony.” Suppose the witness testifies that he saw a person smile, or that “he sounded like he was kidding when he said that.” To take the arguable opinions (smiling, kidding) and break them down into more detailed factual components may push the limits of many witnesses’ ability to speak and describe. Hence lay opinions are commonly allowed.

Soliciting improper opinion testimony is perhaps the most common technique by which trial lawyers try to evade the firsthand knowledge requirement of FRE 602. Witnesses who have no firsthand knowledge of the facts are not infrequently asked to summarize the facts in the form of an opinion, on the theory that everyone has firsthand knowledge of his own opinions. A witness may be asked why another person took a certain action; after an objection is sustained (that the question calls for speculation), the questioner might try asking, “Why, in your opinion, did he do it?” A police officer who did not observe the accident but learned its details by interviewing eyewitnesses may be asked what happened; after an objection is sustained (hearsay or lack of firsthand knowledge), the questioner might then ask, “In your opinion, how did the accident happen?” These reformulations of the question merely disguise, but fail to address, the problem going to the heart of the objection—the witness’s lack of firsthand knowledge.

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26. FRE 701 provides:

Opinion Testimony by Lay Witnesses. If the witness is not testifying as an expert, the witness’ testimony in the form of opinions or inferences is limited to those opinions or inferences which are (a) rationally based on the perception of the witness, (b) helpful to a clear understanding of the witness’[s] testimony or the determination of a fact in issue, and (c) not based on scientific, technical, or other specialized knowledge within the scope of Rule 702.

27. For example, in United States v. Yanez Sosa, 513 F.3d 194 (5th Cir. 2008), the court distinguishes testimony that is “merely descriptive” from testimony which moves beyond this presumably ordinary form of testimony “into the realm of opinion.” Id. at 200.

28. FED. R. EVID. 701(b).

29. This discussion anticipates the “single-fact theory” developed infra section II.B.2–3.

30. FRE 602 holds that lay (that is, nonexpert) witnesses “may not testify to a matter unless evidence is introduced sufficient to support a finding that the witness has personal knowledge of the matter. Evidence to prove personal knowledge may, but need not, consist of the witness’[s] own testimony.” This means that the fact of firsthand knowledge be discernable to a hypothetical jury to a “more likely than not” or “preponderance” standard of proof. This threshold holds true of all foundations. See infra section I.C.

31. The officer’s opinion will be admissible, if at all, as an expert opinion under FRE 702, not a lay opinion under FRE 701. Experts may base opinions on second-hand information. See FED. R. EVID. 703.
firsthand knowledge of the underlying events. A witness may know his own opinion, but if that opinion is not based on any firsthand knowledge, it is unfounded—both in the common and evidentiary senses of that term—and should therefore be deemed irrelevant. By requiring that lay opinions be rationally based on the witness’s perception, FRE 701 maintains FRE 602’s firsthand knowledge requirement for this form of testimony. More importantly for my argument, FRE 701 thereby maintains a requirement that is central to my foundation theory: that well-founded evidence be assertive, case-specific, and probably true.

C. FOUNDA TION AND FRE 104(B)

FRE 104(b) is an important component of the foundation principle implicit in the Federal Rules. It provides:

Relevancy conditioned on fact. When the relevancy of evidence depends upon the fulfillment of a condition of fact, the court shall admit it upon, or subject to, the introduction of evidence sufficient to support a finding of the fulfillment of the condition.

Questions governed by FRE 104(b) are merely screened by the judge for “evidence sufficient to support a finding of the fulfillment of” a fact condition. That is a (hypothetical) jury finding: the judge asks herself whether a reason-

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32. But if a witness’s opinion is based entirely on reliable hearsay, isn’t that technically relevant, even if excludable under FRE 701 and possibly the hearsay rule? At first blush, it seems relevant, but it is not. A witness’s application of common sense to facts that a jury could equally well reason through is held to be “unhelpful to the jury,” a basis for excluding lay opinion testimony. See Fed. R. Evid. 701(b) (lay opinion admissible if “helpful to a clear understanding of the witness’s testimony or the determination of a fact in issue”); United States v. Henke, 222 F.3d 633, 639–43 (9th Cir. 2000) (holding lay opinion based on information available to the jury unhelpful and inadmissible). “Unhelpful to the jury” is equivalent to irrelevant—by replicating the jury’s thought process, it does nothing to change the probabilities of a fact of consequence. See infra section I.D.2. Again, if the inference or conclusion to be drawn from facts requires the “scientific, technical, or other specialized knowledge” of an expert, that opinion will be relevant even if not based on firsthand knowledge of those facts. See Fed. R. Evid. 702, 703.

33. Fed. R. Evid. 701 (stating that lay opinion testimony must be “rationally based on the perception of the witness”).

34. See infra Part II.

35. The pending “restyling” of FRE 104(b) maintains most of the language from the current version:

Relevance That Depends on a Fact. When the relevance of evidence depends on whether a fact exists, proof must be introduced sufficient to support a finding that the fact does exist. The court may admit the proposed evidence on the condition that the proof be introduced later.

Amendments to the Federal Rules of Evidence, available at http://www.uscourts.gov/RulesAndPolicies/FederalRulemaking/PendingRules/SupremeCourt042611.aspx. Nothing in this proposed new version of FRE 104(b) is intended to, or does, work a conceptual change in the doctrine of conditional relevance. See Advisory Committee’s Note to Proposed Restyled FRE 104(b), in Letter from Hon. Robert L. Hinkle, Chair, Comm. on Evidence Rules, to Hon. Lee H. Rosenthal, Chair, Standing Comm. on Rules of Practice and Procedure 6, app. (May 6, 2009) (noting that changes to FRE 104 “are intended to be stylistic only. There is no intent to change any result in any ruling on evidence admissibility.”). The arguments advanced in this Article are thus fully applicable to the restyled rules.
able jury could find that the condition of fact is probably true. This hypothetical finding need only be made “by a preponderance of the evidence.” In lay terms, the “evidence sufficient to support a finding” standard might be described as “plausible but not necessarily probable.” This standard, notably, is the same as the standard governing summary judgment and other merits rulings under the heading “judgment as a matter of law.” I will further develop this connection, below.

FRE 104(b) questions are those in which the offered evidence is irrelevant if the preliminary facts do not pan out: they go to the jury even though the jury may ultimately believe the factual predicate to be untrue. This makes sense because there is no harm done in admitting evidence that is ultimately deemed irrelevant. The jury can be trusted to apply logic and disregard evidence whose relevance depends on an unfulfilled factual condition. An example used by the Federal Rules of Evidence Advisory Committee is illustrative: “[I]f a letter purporting to be from Y is relied upon to establish an admission by him, it has no probative value unless Y wrote or authorized it. Relevance in this sense has been labelled ‘conditional relevancy.’” If the jury concludes that the letter was not written by Y, it will not hold the contents of the letter against Y as an admission.

It is generally accepted that foundation for exhibits, or Rule 901, is “a special case” of the concept of conditional relevance expressed in FRE 104(b). Obviously, evidence sufficient to support a finding that Y wrote the letter would be an ordinary part of the foundation for the letter; this would be one of the purposes for using the kinds of handwriting authentication listed as examples in FRE 901(b)(2) and (3). The foundational fact—that Y wrote the letter—is also the factual condition on which the letter’s relevance depends. Both FRE 901(a) and 104(b) require that this factual condition be established by evidence sufficient to support such a finding.

FRE 104(b) questions include not only exhibit foundations under FRE 901,
but also matters not traditionally thought of as falling under FRE 901. The Supreme Court addressed 104(b) questions in *Huddleston v. United States*.44 There, the Court affirmed the conviction of a defendant charged with possession and sale of two boxes of stolen videocassettes. The only contested element of the charge was whether the defendant, Huddleston, knew the cassettes were stolen. The prosecution’s case included, among other things, the testimony of two witnesses, a store owner and an undercover FBI agent, who said that Huddleston had offered to sell them televisions and kitchen appliances at a suspiciously low price and without a bill of sale.45 It was undisputed that these other incidents occurred around the same time as the charged videocassette sale. The prosecution offered the evidence under the second sentence of FRE 404(b), to show knowledge: that Huddleston’s contemporaneous sale of apparently stolen TVs and appliances made it more likely that he knew the videocassettes were stolen. But Huddleston claimed that he did not know that the TVs and appliances had been stolen either, and he objected that the evidence of the television and kitchen-appliance incidents could not be admitted as “other acts” evidence under FRE 404(b) unless the trial court made a preliminary factual finding by a preponderance of the evidence (that is, under FRE 104(a)), that those items had been stolen. The Supreme Court agreed that the relevance of the evidence required some showing that those other items had been stolen, but rejected the argument that the judge had to make the finding. Instead, the Court held, the proper standard was FRE 104(b)—there merely had to be evidence sufficient to support a jury finding that the TV sets and appliances had been stolen.46

*Huddleston* is an eminently sensible interpretation of FRE 104(b), and it shows the connection between FRE 104(b) and the structure of foundation as stated in FRE 901. To get the evidence admitted, the prosecution had to produce evidence sufficient to support a finding that the matter in question was what the proponent claimed. That is the definition of foundation under FRE 901. The “claim” about this earlier incident was that Huddleston had sold stolen TVs. Each “element” of that claim is subject to the evidence sufficient to support a finding requirement: Huddleston / sold / stolen TVs. The Court focused on the last element—stolen TVs—because that was the weak link.47 But it is also true that the relevance of this earlier incident depended on the fact that the stolen TVs were sold by *Huddleston*. That is, the evidence could only be deemed relevant if the evidence was also sufficient to support a finding that Huddleston was the seller of the TVs. That issue was not litigated—not because it was unnecessary to the logical relevance of the stolen-TV episode, but only because Huddleston happened to concede that he had sold the TVs.

45. *Id.* at 684 & n.1.
46. *Id.* at 689.
47. *See id.*
Huddleston powerfully illustrates the connection of FRE 104(b) and 901 to each other and to a broader foundation principle. In Huddleston, a narrative unit of testimony comprises an evidentiary “claim” or assertion—Huddleston sold stolen TVs—which is admissible only if there is evidence sufficient to support a finding that it is probably true. This claim is no different from the kinds of claims made about exhibits under FRE 901, which also must comprise a set of probably true facts sufficient in its connection to the offering party’s theory of the case. Every fact needed to identify the evidence—to make an assertive claim about what the evidence is—is a fact on which relevance depends and which must be established by evidence sufficient to support a finding of its probable truth. While foundation is often held to be a special case of conditional relevance, the reverse is true: conditional relevance is an aspect of foundation.

D. THE LIMITS OF RELEVANCE

Relevance purportedly supplies the general theory of the admissibility of evidence. The modern concept of relevance stems from Thayer’s famous formulation: “The law furnishes no test of relevancy. For this, it tacitly refers to logic and general experience,—assuming that the principles of reasoning are known to its judges and ministers, just as a vast multitude of other things are assumed as already sufficiently known to them.” The reference to “judges and ministers” notwithstanding, Thayer’s statement has been properly understood as equating the ability to distinguish relevant from irrelevant matter with common sense. In other words, jurors are presumed capable of disregarding irrelevant matter on their own. Although “the very conception of a rational system of evidence . . . forbids receiving anything irrelevant,” judges’ relevance-based exclusions of evidence are more a matter of efficient administration of trials than of decision-making rationality, because jurors need no legal instruction or training to disregard irrelevant evidence. In other words, the rule of relevance merely describes or restates a thought process that jurors would bring with them into the courtroom, as well as admonishes judges to conduct trials efficiently by imposing a kind of stricture on the storytelling tendencies of lay witnesses.

These ideas are expressed in FRE 401:

“Relevant evidence” means evidence having any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence.

The “any tendency” standard importantly reminds us that any one item of

48. See supra note 1.
52. Fed. R. Evid. 401.
evidence viewed in isolation need not be, and typically will not be, sufficient to meet the burden of proving a material fact: “a brick is not a wall,” and “relevancy is not sufficiency.” The “any tendency” standard further implies that once a judge agrees that an item of evidence may at all affect the probability of a material fact, she must let the jury consider it and ultimately let the jury decide how far it goes toward proving the case. In other words, FRE 401 indicates that “weighing” the evidence is a jury function.

As important as these points are, they provide a limited picture of the requirements for admissible evidence. This is not meant as a reference to the exclusion rules, which make up the body of “evidence law” as that term is generally understood.

The definition of relevance in FRE 401, “[r]elevant evidence’ means evidence,” assumes the existence of “evidence.” But what is “evidence”? Further, it has long been acknowledged that “[r]elevancy is not an inherent characteristic of any item of evidence but exists only as a relation between an item of evidence and a matter properly provable in the case.” Thus, the modern FRE 401 definition of relevance correctly incorporates the concept of common law “materiality”—the tendency of an item of evidence to make a fact of consequence more or less probable. Yet the relevance rule tells us nothing about the nature of facts of consequence: what are they, and where do they come from?

If these questions seem too basic to bear thinking about, it is worth considering how one would go above resolving three challenges to what this Article calls the “foundation principle,” which is that evidence must be case-specific,

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53. Id. advisory committee’s note.
54. FRE 402 grandly begins, “[a]ll relevant evidence is admissible,” but then goes on to state “except as otherwise provided by the Constitution of the United States, by Act of Congress, by these rules, or by other rules prescribed by the Supreme Court pursuant to statutory authority.” FED. R. EVID. 402. The study of “evidence law” is generally understood to mean learning those exceptions to the admissibility of relevant evidence—hearsay, impermissible character inference, privileged matter, improper “secondary” evidence of the contents of a document, and the “exclusionary rule” in criminal cases, to name most.
55. FED. R. EVID. 401 advisory committee’s note.
56. See, e.g., MUELLER & KIRKPATRICK, supra note 1, § 4.2, at 157 (“Under FRE 401, ‘materiality’ is merged into the definition of relevancy by the requirement that the fact proved must be ‘of consequence to the determination of the action.’”); WEINSTEIN & BERGER, supra note 1, § 401.04[3][a], at 401–31 to 401–32. The “purpose” for which evidence is offered will often determine the applicability of a rule of exclusion. Thus, a statement is not hearsay if not “offered in evidence to prove [that is, for the purpose of proving] the truth of the matter asserted.” FED. R. EVID. 801(c). For example, the defamatory statement in a libel case is offered for its falsity, not its truth, and is therefore not hearsay. Similarly, a person’s prior conduct, under FRE 404(b), “is not admissible to prove [for the purpose of proving] the character of a person in order to show action in conformity therewith.” FED. R. EVID. 404(b). However, prior conduct “may . . . be admissible for other purposes, such as proof of motive, opportunity, intent, preparation, plan, knowledge, identity, or absence of mistake or accident.” Id. Thus, an accused robber may be shown to have stolen a gun a week prior to the robbery, not to show a character trait for theft or violence, but to show access to the gun (essentially, “opportunity” or “preparation” in the words of the rule). A handful of other rules admit evidence for one purpose but not another. See, e.g., FED. R. EVID. 406–12. Although the “purpose” for which evidence offered is typically referred to as its “relevance,” contributing to the idea that relevance is the one fundamental principle of evidence law, in fact, this aspect of relevance is really “materiality.”
assertive, and probably true. Each of the following analyses offered by one or more eminent evidence scholars makes a relevance claim for evidence that violates one or more of those aspects of well-founded evidence. Evidence scholars raising these issues have left us with unresolved paradoxes, ad hoc explanations, or claims that the rules of evidence are to blame and need to be fixed.

1. Nance’s Paradox

Professor Nance hypothesizes: “[A] witness in a homicide case takes the stand and simply declares under oath that she knows who the killer is and that it is the defendant.”57 Nance argues, “[t]here can be no doubt that this testimony is relevant, at least if the identity of the killer is contested.”58 Conceding that it is possible the witness is basing her claim on hearsay or on fabrication, Nance reasons that there is also at least a possibility (some “a priori probability”) that the testimony is based on firsthand knowledge. “As long as we are not certain that she is either making it up or basing it on completely unreliable hearsay, or a combination of the two, we should conclude that it is more likely that defendant committed the crime given the testimony than it would be without the testimony.”59 Nance’s paradox relies on the seemingly plausible generalization that someone accused of murder by a witness is more likely to be a murderer than someone who is not so accused. Because, as Nance correctly adds, witnesses must be deemed credible for purposes of relevance determinations, we even have to eliminate the possibility of fabrication or even honestly mistaken perception in considering the relevance of this statement.60

Nothing in FRE 401 or the general theory of relevance can explain why this evidence would never be offered, let alone admitted, in a real trial. Fundamentally, Nance’s hypothesized testimony is not “evidence,” but to see why requires looking outside the concept of relevance. The hypothesized testimony is not well-founded: despite appearances, it is devoid of case-specific, probably true assertions.61

2. The Problem of De Minimis Probative Value

In the century before the adoption of the Federal Rules of Evidence, a debate arose among evidence commentators about a distinction between “logical” and “legal” relevance. “Logical” relevance referred to the tendency of an offered item of evidence, as a matter of commonsense reasoning, to affect the probabilities of consequential facts. Under Thayer’s great notion, all such evidence would be admissible except for those categories excluded as a matter of

57. Nance, supra note 1, at 489.
58. Id.
59. Id.
60. Id. (“The presence of such potential testimonial defects is unlikely a priori . . . ”).
61. See infra Part II.
“Legal” relevance referred to a concept championed by Wigmore, which would authorize judges to require “a higher degree of probative value of all evidence to be submitted to a jury than would be asked in ordinary reasoning.”63 At stake in this debate was the perceived degree of acceptable judicial control over jury decision making: obviously, a standard requiring greater probative value for all evidence would, at least theoretically, increase the judge’s ability to keep evidence away from the jury. The debate was resolved by the adoption of FRE 403, which recognizes judicial discretion to examine probative value as a precondition to admissibility of concededly “logically” relevant evidence, while on the other hand seeking to limit that discretion. Discretion to exclude is limited by the insertion of a balancing test tilting toward admissibility: the FRE 403 dangers of confusion of issues, undue consumption of time, and so forth must “substantially outweigh” probative value to justify exclusion.64 The concept of “legal” relevancy has thus been subsumed within the concept of FRE 403 discretion, where it has become largely free from enduring controversy.

Yet even under the Federal Rules, a variation of this problem has re-emerged in a slightly different form that might be thought of as “the problem of de minimis probative value.” In one professor’s hypothetical after another, it appears to be the case that our system of evidence excludes evidence that is “logically relevant” under the minimal “any tendency” standard of FRE 401. Low probative value evidence, in the analysis of one court following this approach, could be excluded under either FRE 402 or 403.65

Consider the following hypotheticals:

1. In a murder case, the prosecution offers a standard form life insurance policy, with no information about the identities of the insured or the beneficiary. Relevance theory: the fact that life insurance policies exist makes it more likely than without the evidence that the victim had a life insurance policy naming the defendant as the insured.

2. Same murder case: the prosecution offers evidence that the defendant had a sharp kitchen knife in his home. No information is offered about the cause of the victim’s death. Relevance theory: people with access to deadly weapons are more likely to commit murder than those with no access to deadly weapons.

3. Same murder case: the prosecution offers evidence that a resident of the

63. 1 Wigmore, Evidence § 28 (3d ed. 1940); see also Mueller & Kirkpatrick, supra note 1, § 4.2, at 153, § 4.9, at 171 (distinguishing “logical” from “pragmatic” relevance).
64. See Fed. R. Evid. 403.
65. See United States v. Hitt, 981 F.2d 422, 423–25 (9th Cir. 1992) (holding that a photograph of defendant’s gun, whose “probative value was exceedingly small,” should have been excluded by the trial court under FRE 403 and “might well have been excludible [sic] under Rule 402 as totally irrelevant, had a Rule 402 objection been made”).
metropolitan area where the defendant and the victim both lived was traveling out of the country on the date of the murder. Relevance theory: credible alibi for a person other than the defendant makes it slightly more likely that the defendant was the murderer.

4. In a tort case, as evidence of notice of a defective condition uncorrected by the defendant, the plaintiff offers evidence that an auto mechanic said aloud that the defendant’s "brakes are bad" with no evidence about whether the defendant was present at the time. Relevance theory: fact that words were spoken makes it more likely that defendant heard them than if the words were never spoken.

Many evidence scholars accept or affirmatively argue that these proffers constitute "evidence" that is relevant under the FRE 401 "any tendency" standard. Because they are said to have some, albeit de minimis, probative value, they are seen as illustrations of logical relevance, at least in some "technical" sense. I prefer to think of them as examples of "hypothetical" relevance, as in "improbable law school hypothetical." Such examples almost invariably consist of offers of evidence that would not be made by a real party in a real trial. Noting the unreality of the examples is not sarcasm on my part; rather, the reason why such offers are not made in real courtrooms bears thinking about.

The conventional resolution to the problem of de minimis probative value relies on FRE 403: an offer of evidence may have such low probative value that it is not worth the time to hear it, even though its probative value is nonzero and therefore "logically" relevant. This answer is unsatisfying, a kind of theoretical empty-handed shrug. If these sorts of evidentiary proffers would always be properly excluded, we have good reason to expect a systematic answer rather than one relying on innumerable ad hoc, discretionary decisions under FRE 403.

But are these hypothetical proffers in fact relevant? To make the case that they are, conventional relevance theory compares two "states of the evidence,"

66. Referring to the Advisory Committee’s “notice” example on which hypothetical number 4 is based, see FED. R. EVID. 104(b) advisory committee’s note, Nance asserts that “even if, from all the evidence presented, there is only a small probability that X heard the spoken statement, it is still some evidence of notice.” Nance, supra note 1, at 450. Hypothetical number 3 is posited by Professor Friedman, who argues that it is technically relevant, though properly excluded under FRE 403. See Richard D. Friedman, Conditional Probative Value: Neoclassicism Without Myth, 93 Mich. L. Rev. 439, 444 n.21 (1994).

67. See, e.g., Hitt, 981 F.2d at 424–25.

68. A more ambitious explanation is offered by Professor Nance, who contends that parties have a duty to offer the “best” (that is, the most probative and nonprivileged) evidence they have. See Nance, supra note 1, at 472. Despite its considerable normative appeal in some respects, Nance’s “best evidence” approach does not seem capable of systematically explaining why judges do, or should, exclude de minimis probative value evidence. On the one hand, there is no indication that current relevance and FRE 403 rulings are based on the idea that the offering party has strategically or negligently failed to produce something more probative. On the other hand, the quality of offered evidence relative to other evidence on the same point available to a party tells us little or nothing about its relevance or foundation.
one with the marginally informative evidence about the insurance policy, knife, alibi witness, or notifying statement in evidence, and one without it. The marginally informative evidence is said to be “some evidence,” relevant because the probability of guilt/liability/notice is ever-so-slightly higher in the evidentiary state that includes the evidence.

The problem with this account is that it assumes away the real world and replaces it with a world completely devoid of any facts existing prior to trial, outside the courtroom. Or, it assumes jurors whose minds are completely devoid of any background factual knowledge, which is much the same thing. Not only is this not the world in which we live, but such an assumption directly contravenes the assumptions about “rational fact-finding” that underlie the rules of evidence in general, and FRE 401 in particular. Evidentiary states exist in a trial with a jury, composed of men and women of at least ordinary sense and intelligence. Jurors are not instructed to empty their minds of everything they know. On the contrary, they are expected to bring their fairly complex and developed knowledge of the world into the courtroom and use it for the very reasoning process that makes relevance possible.69

When FRE 401 speaks of making a fact of consequence “more probable,”70 it does not specify to whom. The answer, of course, is “to a rational fact-finder.” That means jurors with common knowledge of the world. What do jurors know? They know that life insurance policies exist. They know that an ordinary household is filled with potentially deadly weapons, such as knives, poisons, blunt instruments, and cords. They know that potentially notice-giving utterances are published or spoken all the time. They know that thousands of people within striking distance of a murder victim will have credible alibis.

Thus, relevance is not the quality of evidence in informing a fact-finder above absolute zero knowledge, but rather of informing jurors above and beyond their state of general knowledge. To be relevant, evidence has to make a fact of consequence more probable than without the evidence in light of what the juror already knows as a matter of common sense and common knowledge. Presenting evidence that merely restates these generalized a priori possibilities does not affect the likelihood of a fact of consequence because it does not advance the jurors’ knowledge beyond their common sense and experience.

Nor can the relevance of “evidence” of this type—evidence that fails to inform the jury beyond its common knowledge—be restored by reframing the

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69. See infra section II.C.1.

70. For the sake of simplicity and clarity, I will substitute the phrase “more probable” for the technically correct, but clumsy “more probable or less probable.” The Rule drafters undoubtedly adopted “more probable or less probable” to acknowledge that one party (typically the defendant) is always in the position of disproving a claim and therefore offering evidence to rebut or “make less probable” the material facts asserted by the adversary. On an intuitive level, however, if we set aside the burden of proof, we can always look at one party’s rebuttal as a set of affirmative propositions contrary to those of the other. Viewed in this way, all evidence is offered to increase the probability of some material fact assertion favorable to the offering party.
proffers as more case-specific (albeit low probability) assertions. Presumably, instead of offering testimony that “insurance policies exist,” the plaintiff or prosecutor could recast the testimony as a remote possibility that the victim had an insurance policy naming the defendant as a beneficiary. Testimony could be offered that “there is a 10% chance that this kitchen knife was used to kill the victim,” or that “it is not inconceivable that the defendant driver heard the mechanic say her brakes were bad.” These reformulations are no different from the original hypotheticals; in fact, they are implicit in the relevance arguments for each of them. The existence of insurance policies is argued to be relevant because there is therefore a remote possibility that the victim had one naming the defendant as a beneficiary, and so forth.

This restatement fails to make the hypothetical evidence relevant. Evidence of a remote possibility, or a “10% probability,” that the victim had an insurance policy naming the defendant as a beneficiary can be relevant only if we assume that in the prior “state of the evidence,” the existence of such an insurance policy was impossible (or nearly so). That is a false assumption, and, again, one that FRE 401 does not require. States of affairs in which life insurance policies, murder weapons, and notifying statements do not exist, are unreal. In our world, the world from which jurors are drawn and in which trials are conducted, all these things are possible before any evidence is introduced. Assessing relevance is not supposed to be an exercise in projecting imaginary worlds in which these things do not exist unless and until we are told (through courtroom evidence) that they do.

As I will argue further in Part II, “improbable law school hypothetical” evidence is irrelevant because it lacks foundation—case-specific information showing how the offered evidence fits the theory of the case. If the theory of the case is that the victim was murdered with a particular knife, the prosecutors cannot simply show any knife, but must introduce the knife they say was the murder weapon. If the theory of the case was that the insurance policy motivated the killing, there must be evidence sufficient to support a finding that this insurance policy insured the victim, named the defendant as the beneficiary, and was known to the defendant. And so on.

De minimis probative value becomes a problem—a poorly explained systematic exclusion of logically relevant evidence—where relevance theory is divorced from foundation. As will be seen, the foundation theory of evidence resolves this apparent problem by replacing the ad hoc explanation with a systematic one: only well-founded evidence, consisting of case-specific, probably true assertions, can be relevant.71

71. Cf. Michael S. Pardo & Ronald J. Allen, Juridical Proof and the Best Explanation, 27 LAW & PHIL. 223, 223 (2008) (“[W]hen several propositions may explain a given phenomenon we infer the one that best explains it.”).
3. The Conditional Relevance Problem

A line of critical commentary attacks the concept of “conditional relevance” under FRE 104(b) by claiming it is a logically incoherent contradiction of the FRE 401 “any tendency” standard for relevance. The rule of conditional relevance states that foundational facts must be established by evidence sufficient to support a finding of their probable truth, which means that a jury could find them more likely than not. Critics of conditional relevance argue that “more likely than not” means a greater than 50% probability, and is therefore “a higher standard for admissibility” than the FRE 401 “any tendency” standard, which allows admission of evidence that has any non-zero probative value, even if it does not by itself “prove” any other fact by a 50% probability.

The attacks on FRE 104(b) have been made by highly respected and influential evidence scholars, whose ideas are likely to attract the attention of rules revision committees—or who may even sit on rules revision committees themselves. Three of these scholars have proposed changes to FRE 104(b) that would actually eliminate the concept of conditional relevance from the Federal Rules.72 There is thus a nontrivial danger that evidence scholarship might...

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72. Professor Allen has proposed line-edits to FRE 104(b) that, essentially, would reduce it to a restatement of FRE 401 and 402:

(b) Relevancy conditioned on fact. When the relevancy of evidence depends upon the fulfillment of a condition of fact, the court shall admit the evidence over a relevancy objection upon, or subject to, a finding that the evidence could rationally influence a reasonable person’s assessment of any fact that is of consequence to the determination of the action, the introduction of evidence sufficient to support a finding of the fulfillment of the condition.


Professor Friedman’s proposal similarly would eliminate conditional relevance, in his case by turning FRE 104(b) into little more than a restatement of FRE 403:

(b) Probative value conditional on further evidence. When a proffered item of evidence has insufficient probative value to warrant admissibility on the current state of the evidence but would have sufficient probative value to warrant admissibility on some other evidentiary states, the court may in its discretion admit the evidence subject to the introduction of evidence to achieve such another evidentiary state.

Friedman, supra note 66, at 473. To be sure, Friedman’s proposed revision retains the FRE 104(b) recognition of a procedure for “connecting up.” But by making “connecting up” hinge on “probative value,” rather than relevance, his revised rule winds up restating a notion already implicit in FRE 403, which considers the probative value of evidence in light of the other evidence in the case.

Professor Nance proposes, in effect, to reduce FRE 104(b) to a rule about “connecting up” without any reference to relevance, conditional or otherwise:

Rule 104(b). Conditional admissibility. When a proffered item of evidence is inadmissible but would be admissible on some other state of the evidence, the court may admit the proffered evidence subject to the subsequent presentation of evidence sufficient to achieve such other evidentiary state. If the court does not conditionally admit the proffered evidence and further evidence is subsequently presented that achieves such other evidentiary state, the court may not exclude such further evidence on the ground that it is inadmissible without other evidence if admission of the original proffer would have rendered the further evidence admissible.
undermine the law on this point.

In *The Myth of Conditional Relevancy*, Professor Vaughn Ball assaulted the prevailing understanding of conditional relevance. Ball argued that this understanding was “erroneous, being based from the start on an incorrect analysis of relevancy” and was “inconsistent with the definitions of relevancy” adopted in modern evidence codes, including the Federal Rules. According to Ball, because no fact is relevant by itself, it will always be dependent on at least one other fact for relevance. Evidence of one fact is always relevant so long as the probability of the other fact (or facts) on which its relevance depends has a probability greater than zero. Because, as Ball sees it, nonzero probability is what we mean by garden-variety, FRE 401 “logical” relevance, the relevance of one fact should never depend on “evidence sufficient to support a finding” (50% probability) of another. In other words, the logical relevance of one item of evidence never depends on anything more than the 401 “logical” relevance of another fact. Conditional relevance as something distinct from logical relevance is chimerical. To impose the FRE 104(b) requirement of the higher, “evidence sufficient to support a finding” standard could theoretically be done as to any offer of evidence, making its application a random and arbitrary choice by the judge; and a consistent application of FRE 104(b) would swallow FRE 401 whole.

For good measure, Nance and Friedman go on to propose amendments to Rules 602 and 901. See Friedman, supra note 66, at 475–77; Nance, supra, at 440, 451.

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*Conditional Probative Value and the Reconstruction of the Federal Rules of Evidence, 94 Mich. L. Rev. 419, 431 (1995).* It is difficult to understand how alternative “state(s) of the evidence” can change an inadmissible offer of evidence into an admissible one, other than by introduction of preliminary facts already covered in FRE 104(a), unless they affect the item’s relevance or probative value. So Nance’s rule seems either to restate FRE 104(a) or Friedman’s proposed version of FRE 104(b). By treating the word “relevance” as taboo in his formulation, Nance’s proposal does little to clarify matters: courts could reasonably interpret it to reach the same result as the current FRE 104(b).

For good measure, Nance and Friedman go on to propose amendments to Rules 602 and 901. See Friedman, supra note 66, at 475–77; Nance, supra, at 440, 451.

73. See generally Ball, supra note 19. The prevailing understanding of FRE 104(b) is explained in the Advisory Committee notes, which themselves are derived from the work of Professor Edmund Morgan. See supra note 40. Morgan, in my view, deserves our undying respect and admiration for his work on this topic. Not only did he understand the fundamentally different functions of “conditional relevance” (in other words, foundation) and general, 401 relevance, a point which has eluded other evidence scholars, but he embedded this correct and practical understanding into the Federal Rules. Regrettably, he did not explain the concept so well: “[It] often happens that upon an issue as to the existence of fact C, a combination of facts A and B will be highly relevant but that either without the other will have no relevance.” MORGAN, supra note 40, at 45–46; see also Edmund M. Morgan, *Functions of the Judge and Jury in the Determination of Preliminary Questions of Fact*, 43 Harv. L. Rev. 165, 166 (1929) (explaining that a fact may become “of controlling importance” when accompanied by another fact). Unfortunately, this general language does not clearly distinguish conditional relevance from the tendency of two items of relevant evidence to reinforce the probative value of the other. His critics have become confused on this very point. See *infra* section III.B.3.


75. See id. at 450–54.

76. Ball’s argument received an important endorsement from Professor Tillers, who discussed conditional relevance at length in his 1983 revision of the Wigmore treatise. Tillers concluded, “Professor Morgan’s argument [that the relevance of an item of evidence can depend on the probable
Professor Allen elaborates on Ball’s “demonstrat[ion] that the received wisdom about conditional relevancy was false,” making only minor corrections. Allen further claims to demonstrate that each of the Advisory Committee’s “examples of ‘conditional’ relevancy . . . can easily be transmuted into cases of ‘pure’ relevancy” and vice versa. This is because “[a]ll cases of conditional relevancy are cases of relevancy, and all cases of relevancy are cases of conditional relevancy. The concepts are identical.” According to Allen, evidence is conditionally relevant only in the specific procedural setting of judgment as a matter of law. Like Ball, Allen argues that “[n]o evidence is simply relevant in its own right,” and thus determining relevance always requires relying on an intermediate proposition; there is therefore no logical distinction “between relevancy and conditional relevancy.” For this reason, there is no basis to have different admissibility standards. “Without objection, relevance of an offered item would probably be treated as a 401 question; with objection, a fact necessary to relevance may become a 104(b) question.” The result, at least theoretically, seems to authorize the exclusion of relevant evidence that would be admissible under FRE 401. He therefore proposes to amend Rule 104(b) to delete the concept of conditional relevance from the Federal Rules.

Professors Nance and Friedman purport to find and save a baby in the conditional relevance bathwater. But Nance accepts Ball’s argument that supposedly conditionally relevant evidence is always relevant unless the supporting factual condition is impossible. Referring to the Advisory Committee’s notice hypothetical, Nance argues that the relevance of evidence of the purported notice-giving statement does not depend on proof of any fact condition, but rather is relevant unless “one were certain that X did not hear the utterance.” But because such certainty is impossible in the reconstruction of past events—it is “possible” that defendant heard the statement while hiding in a broom closet at the garage—the application of conventional conditional relevance doctrine necessarily leads to exclusion of relevant evidence. By requiring a finding (the truth of a fact condition] contains a logical fallacy that has been lucidly exposed by Professor Ball. . . . The drafters of Federal Rule of Evidence 104(b) apparently fell victim to Morgan’s error. . . . As plausible as Morgan’s theory may sound, it is wrong.” 1 Wigmore, supra note 2, § 14.1, at 718–19.

77. Allen, supra note 72, at 871.
78. Id. at 879.
79. Id.
80. Id. at 877.
81. Allen, Kuhns & Swift, supra note 1, at 249. As can be inferred from the quotation in the text, the Allen evidence textbook pursues the same idea advanced in Allen’s article. Although (in the interest of full disclosure) I joined as a coauthor of the subsequent edition of this textbook, see Allen, Kuhns, Swift & Schwartz, Evidence: Text, Problems and Cases i (4th ed. 2006), Allen’s views continue to be expressed in the book, see id. at 220–23. I have cited the 2002 edition of the textbook in this Article simply to avoid the mistaken impression that I might have formerly published views in accord with Allen’s on conditional relevancy.
82. See Allen, Kuhns & Swift, supra note 1, at 251.
83. Nance, supra note 1, at 452. Tillers makes the same argument. See 1 Wigmore, supra note 2, § 14.1, at 719.
probable truth) of the factual condition, rather than its mere possibility, Nance concludes, “the concept of conditional relevance either simply confuses the standards for sufficiency with those for admissibility or else serves some function distinct from spelling out the logical implications of the basic requirement of relevance.” Nance goes on to explain in depth what he believes this “distinct function” is: a poorly articulated manifestation of a so-called “best evidence” principle by which judges require parties to produce the most probative evidence available to them.

Friedman rejects the “binary” assumption of what he calls “classical” conditional relevance—that evidence can be rendered relevant or irrelevant by the presence or absence of a factual condition. Instead, he argues, a fact condition can only affect the probative value, not the relevance, of the evidence depending on it. Thus, he suggests, conditionally relevant evidence is better understood as relevant evidence whose probative value is so minimal as to warrant FRE 403 exclusion but which might be made more probative and thereby cross the 403 threshold on proof of related facts. Hence, Friedman, too, proposes to eliminate conditional relevance from the Federal Rules, substituting a notion of “conditional probative value” that in essence turns foundation questions into FRE 403 questions.

Ultimately, Nance and Friedman are harsh critics rather than supporters of the concept of conditional relevance. Both conclude that conditional relevance is fundamentally at odds with logical relevance and that, while it may contain the germ of an idea better grafted onto other key concepts, it is not coherent in itself. Nance and Friedman appear to agree with the core of the Ball–Allen thesis, that conditionally relevant evidence is always relevant so long as the fact condition remains possible; probable truth is not required. And because zero probability does not exist in the world of litigated factual disputes (anything is possible), no evidence ever logically fails a conditional relevance test. Nance and Friedman, too, find the concept vacuous as a logical construct. They attempt to resuscitate it, however, by recasting it as a discretionary doctrine of exclusion—Friedman as a FRE 403 analysis, Nance as a judicial prod to parties to produce the most rigorous available evidence in presenting their cases.

84. Nance, supra note 1, at 453.
85. Id. at 472–507.
86. See Friedman, supra note 66, at 440.
87. Other scholars to address the issue seem to concede that Ball’s argument is fundamentally correct. See Mueller & Kirkpatrick, supra note 1, § 1.13, at 48 & n.7 (citing Ball and concluding that “the concept of conditional relevancy seems . . . intuitively true but logically false”); Craig R. Callen, Rationality and Relevancy: Conditional Relevancy and Constrained Resources, 2003 Mich. St. L. Rev. 1243, 1247–49 (arguing that conditional relevance is a pragmatic, rather than logical, doctrine to exclude low probative value evidence); Douglas Walton, Argumentation Schemes: The Basis of Conditional Relevance, 2003 Mich. St. L. Rev. 1205, 1232 (“Another problem shown by Ball is that conditional relevance is hard to define, in precise operational terms, as an exact logical concept.”); Professor Tillers embraces Ball’s argument, but stops short of suggesting that the conditional relevance rules should be abolished:
The fundamental argument of conditional relevance critics can be boiled down to a single point: The logical relevance of a fact can never be made to depend on the probable truth of any other fact. The attack on the coherence of “conditional relevance” is thus an attack on the concept of foundation.

II. FOUNDATION RECONSIDERED

The three problems considered in the previous section—Nance’s paradox, the de minimis relevance problem, and the conditional relevance problem—are all based on the same error. This error is a two-sided coin. On one side, evidence scholars have mistaken relevance for a “general theory of admissibility,” meaning that relevance is a sufficient condition for admissibility of evidence, subject only to exclusion rules operating as exceptions to the general rule of admissibility of relevant evidence.88 The other side of the coin is the widespread failure of evidence scholars to see that foundation is a ubiquitous requirement for all evidence.89 Indeed, foundation is a necessary precondition for relevance; evidence cannot be relevant unless it is “well-founded.” Once foundation is fully understood, the various relevance problems identified in Part I resolve themselves.

In this Part, I will lay out a revised understanding of foundation. The Part will begin with a working definition of the foundation requirement: to be admissible, evidence must be “well-founded,” meaning that it is case-specific, assertive, and probably true.90 I will then show how these elements of foundation logically follow from the nature of legal claims. A party’s claim must be based on a single, probably true narrative which is properly understood to comprise a single fact that is not analytically distinct from the more detailed narrative evidence used to prove it. Because the logical doctrine of entailment holds that

While we do not believe that the present rules regarding conditional relevancy adequately address the phenomenon of conditional relevancy, we are not entirely satisfied with Professor Ball’s proposal for abolition. . . . In lieu of more helpful guidelines, it is quite possible that intuitive interpretations of the doctrine of conditional relevancy come fairly close to the mark in describing how much a given piece of evidence is worth.

See 1 Wigmore, supra note 2, § 14.1, at 730; see also Peter Tillers, Exaggerated and Misleading Reports of the Death of Conditional Relevance, 93 Mich. L. Rev. 478, 480 (1994) (“Ball’s exposé of the flaws in the conditional relevance doctrine is generally on target,” though “it is far from clear that Ball’s proposed remedy for those flaws is the correct one.”).

88. See 1 Wigmore, supra note 2, § 14.1, at 714.

89. Professor Tillers observed the ubiquity of conditional relevance (which, as I argue, is much the same as foundation), but assumed that no one could have imagined or intended it to apply to all offers of evidence. Id. at 715 n.10. Professor Allen assumes that the ubiquity of conditional relevance means that the concept is incoherent—a non sequitur, as I explain below. See infra notes 154–56 and accompanying text.

90. For the current discussion, I will refer to relevance and foundation from the jury’s perspective—in other words, that relevant evidence must be “probably true.” From the judge’s perspective, which views these questions from the vantage point of the reasonable juror, the correct formulation would be that potentially relevant evidence must be believable, and that its foundation consists of all facts which a reasonable jury could believe, that is, find to be probably true.
the probability of a fact can be no greater than the probability of the facts it entails or depends upon, it follows that evidentiary facts must be at least as probable as the claim itself; because the claim must be probably true, so must the evidentiary facts.

Next, I will demonstrate that foundation is a precondition of relevance because relevance consists solely of the generalizations made about well-founded evidence. Foundation consists of all case-specific, evidenced facts that must be present in order for the relevance determination to be made. Thus, the line at which foundation ends and relevance begins is the point in the chain of inference from which no further case-specific facts are required to make the evidence relevant. Once evidence is well-founded (in other words, once its foundation is complete), all that is needed to establish relevance is a set of valid generalizations—the jury’s stock of “information about the world.” On the other hand, evidence that lacks foundation—that does not have the qualities “case-specific, assertive, and probably true”—cannot be logically relevant under FRE 401.

Finally, I will show that fact assertions that are merely possible, that are nonassertive, or that are not case-specific, cannot be relevant.

A. THE WELL-FOUNDED EVIDENCE PRINCIPLE: THE REQUIREMENT OF CASE-SPECIFIC, ASSERTIVE, AND PROBABLY TRUE EVIDENCE

Every offered item of evidence is necessarily packaged as an argument or claim about what it is and how it is specific to the case. This point is implicit in the common linguistic practice of courts and commentators to equate “facts” and “evidence.” As I suggested above, it is also implicit in the complex of foundation rules, particularly in FRE 901’s recognition of requirements of “identification” (what is it?) and “authentication” (is it specific to this case?).

I propose the following definition of foundation: to meet the foundation requirement (that is, to be “well-founded”), evidence must be case-specific, assertive, and probably true. These three criteria are aspects of a single quality of well-foundedness, and thus tend to overlap a great deal.

The outline of the foundation requirement can be seen as a contrast to the “improbable law school hypothetical evidence” listed above, in section I.D.2. What made each of those examples implausible as real evidence was their lack of foundation, even as traditionally understood. There were missing facts needed to connect these items to the case at hand. More generally, “improbable law school hypothetical evidence” can be formulated in two ways: either as generic information lacking evidence specific to the case (for example, a blank insurance policy, a knife without evidence that it was the murder weapon, etc.); or as a low probability of something specific to the case (such as a 10% probability that this was in fact the murder weapon). The two formulations are

91. See Fed. R. Evid. 901(a) (requiring showing that evidence is “what its proponent claims”).
the same, and their equivalence helps illustrate the key elements of my definition of foundation.

1. Case-Specific

Every litigated case involves a party’s presentation of a unique narrative. “Case-specific” evidence asserts a fact that is part of that unique narrative, rather than a generalization.92 As will be developed further below, jurors are expected to reason about case-specific evidence by drawing inferences that rely on generalizations founded on their background, outside-of-court knowledge about the world. These generalizations are not evidence. While expert opinion testimony can take the form of a generalization when needed to supply background information that is outside common knowledge, nonexpert witnesses are required to supply case-specific information rather than generalizations. This, indeed, is the meaning of FRE 602, the requirement that nonexpert witnesses testify from personal knowledge. Such “firsthand knowledge” means more than matter perceived directly by the senses; after all, jurors’ “common knowledge” is likely to include a fair amount of data they have accumulated in their lives through such direct sensory perception. What distinguishes the personal knowledge of a witness from generalizations brought to bear by jurors is that the matter the witness has perceived by his senses is specific to the case. In other words, the “personal knowledge” requirement of FRE 602 is a requirement of case-specific sense perception. The case-specificity requirement of FRE 602, itself a foundation rule, is true of foundation generally.

The hypotheticals in section I.D.2 fail this test of case-specificity. By simply reiterating jurors’ background knowledge—reminding them that life insurance policies exist, potential murder weapons are found about the home, non-accused individuals may have alibis, etc.—the purported evidence fails to inform the jury about anything case-specific and is therefore irrelevant.

2. Assertive

“Assertive” means “positive,” that the evidentiary fact reflects a commitment to a true version of events by the offering party. Assertive evidence advances a proposition that can be falsified within the confines of the applicable burdens of proof. Proposed “possibilities”—“I might have checked her brakes,” “I might have told the defendant they were bad,” etc.—are not assertive because they cannot be falsified by opposing statements of probable truth. It can be true both that the mechanic “might have checked the defendant’s brakes” and that the mechanic “probably did not check the defendant’s brakes.” Indeed, the two statements are logically equivalent. To controvert the statement of a mere possibility requires a showing of virtual impossibility (it is impossible, or nearly impossible that the mechanic checked the defendant’s brakes), which creates a

92. For an excellent analysis distinguishing generalizations from case-specific evidence, see ALEX STEIN, FOUNDATIONS OF EVIDENCE LAW 40–91 (2005).
burden of disproof far in excess of any legally required burden by a defendant. By the same token, nonassertive statements of possibility fail to cross the hypothetical relevance threshold: plausible possibilities exist a priori. The jury knows as a matter of common knowledge that a person involved in an auto accident “might have” seen a mechanic and have been told about a brake defect; testimony to that effect simply focuses the jury’s attention on a particular subject of speculation without advancing its knowledge. In that sense, nonassertive “evidence” is really a form of generalization.

3. Probably True

Finally, well-founded evidence must be probably true. This requirement directly derives from the “evidence sufficient to support a finding” standard in Rules 104(b), 602, and 901. The finding required by this standard is a preponderance of the evidence, meaning “more likely than not,” or probably true. The required finding is hypothetical: the judge determines whether a reasonable jury could make such a finding. The “evidence sufficient to support a finding” standard is thus synonymous with “believable” or “plausible.” The judge does not herself have to believe the offered evidence is probably true, but merely find that it is plausible.

To be sure, probable truth can also be a quality of statements I have called nonassertive. The statement “the mechanic may have told the defendant to get her brakes fixed” can be true or false or something in between. But to be well-founded, the “probably true” evidentiary fact must be specifically assertive as well.

It is certainly intuitive to contend that a fact must be deemed probably true in order to form the rational basis for a decision about “what happened.” But critics of conditional relevance have, in essence, asserted that evidence need only be possible—not probable—to be relevant evidence. According to Professor Nance, even evidence that has “only a small probability” of truth “is still some evidence.” Finally, there is an intuitive countercurrent according to which plausible but improbable facts and even doubts may be deemed informative and therefore a positive basis for rational decision making. I will address these objections in successive sections.

4. Justification for the Foundation Requirements: The Rule Against Speculation

There is, of course, no explicit evidence rule that specifies these qualities of well-founded evidence. This definition of foundation has to be inferred, and one means of doing so is to consider the rule against speculation. “Calls for speculation” is a standard courtroom objection that is synonymous with a lack of foundation—often, but not always, an absence of firsthand knowledge on the part of the witness. Jurors are frequently admonished not to speculate. Wit-

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94. See supra note 36 and accompanying text.
95. Nance, supra note 1, at 450.
nesses are discouraged from speculating, and questions inviting them to do so can be disallowed. In sum, litigants are not entitled or permitted to invite speculation about material facts.

“Speculation” is the thought process of substituting generalizations or hypotheses for facts that are missing or unsupported by evidence. The distinction between generalizations and evidence is widely acknowledged. (The one exception to this principle is that generalizations that are outside common knowledge may be offered in evidence in the form of expert witness testimony.) Perhaps less obvious is that unfounded evidence—which lacks the three criteria for foundation set out above—is in effect a generalization. A generalization in the evidence context is background knowledge or information not specific to the case. Jurors do not need to hear generalizations from lay witnesses, which are opinions excludable as unhelpful to the jury, because they are uninformative. Case-specificity is required to overcome speculativeness.

But as seen above, generalizations can be cast in case-specific terms, by reducing their assertiveness or their probability. Thus, an offer of testimony that “this is possibly (but probably not) the knife used as the murder weapon” is nonassertive, although the words seem to tie it to the case. It simply alerts the jurors to a particular instance of a generalization already known to them: that in a murder case without any specific information about the cause of death or the murder weapon, any knife is possibly the murder weapon. Hence, assertiveness and probable truth are also required to overcome speculativeness.

B. DERIVING THE FOUNDATION PRINCIPLE FROM THE BURDEN OF PRODUCTION

I have argued that the foundation principle is implicit in a cluster of evidence rules: Federal Rules 104(b), 602, 701, and 901. But foundation is not simply a creation of these rules; rather, the rules are an attempt to express a principle that

96. See, e.g., FEDERAL CIVIL JURY INSTRUCTIONS OF THE SEVENTH CIRCUIT § 3.10 (2009) (stating that a compensatory damage award “must be based on evidence and not speculation or guesswork”), available at http://www.ca7.uscourts.gov/Pattern_Jury_Instr/7th_civ_instruc_2009.pdf; Holmes v. South Carolina, 547 U.S. 319, 327 (2006) (holding that evidence offered by criminal defendant that another person committed the crime may be excluded “where it does not sufficiently connect the other person to the crime, as, for example, where the evidence is speculative or remote, or does not tend to prove or disprove a material fact in issue at the defendant’s trial”); Hendrix v. Evenflo Co., Inc., 609 F.3d 1183, 1194 (11th Cir. 2010) (ruling it proper to exclude expert opinion based on unsupported speculation (citing Rider v. Sandoz Pharms. Corp., 295 F.3d 1194, 1202 (11th Cir. 2002))).

97. See, e.g., Gipson v. United States, 631 F.3d 448, 451 (7th Cir. 2011) (noting that a jury determination without necessary evidence is “speculative”); United States v. Hickman, 626 F.3d 756, 768 (4th Cir. 2010) (explaining that prosecution’s argument based on generalization-based prediction of future drug dealing improperly “invites the jury to speculate as to the amount of heroin involved in the conspiracy”); Chapin v. Fort-Rohr Motors, Inc., 621 F.3d 673, 680 (7th Cir. 2010) (rejecting plaintiff employee’s plausible hypothesis of what “would have” occurred: “[t]he only way to know how matters will turn out is to let the process run its course. Litigation to determine what would have happened . . . is a poor substitute for the actual results of real deliberation within the employer’s hierarchy”’ (quoting Cigan v. Chippewa Falls Sch. Dist., 388 F.3d 331, 333–34 (7th Cir. 2004) (all alterations in original); Trentadue v. Redmon, 619 F.3d 648, 653 (7th Cir. 2010) (using “speculation” in summary judgment context to refer to conclusions or inferences made with “no[,] evidence”).
is built into the logical structure of our system of claiming and proof. Specifically, the foundation principle derives from the idea of a burden of production. Indeed, foundation is the burden of production applied on a more specific level of detail, to items of evidence rather than to a claim as a whole. That accounts for why the standard is the same for both: evidence sufficient to support a finding.98

To see this clearly requires several steps, which will be explained in this section. First, a party’s claim must be based on a single, true narrative. This guilt- or liability-narrative, which must encompass all of the factual “elements” required by the substantive law to state the claim, is properly thought of as the “theory of the case.” Second, the entire guilt/liability narrative is, as an analytical matter, a single fact that entails the more specific factual elements required by the substantive law (sometimes called “ultimate facts,” “material facts,” or “facts of consequence”). Third, the logical doctrine of entailment holds that each required generic factual element of the claim must meet the required burden of production—an idea familiar to us as the threshold for judgment as a matter of law. But this same principle applies to the more case-specific, narrative facts that we think of as “evidentiary facts,” and not only to factual “elements” or “ultimate facts.” The application of this burden of production to evidentiary facts is foundation.


A trial is not an investigation. There are many forms of investigative fact-finding inquiry that are like trials, insofar as they reconstruct past events that are not now, and perhaps never completely were, directly observable. Two principal characteristics distinguish trials from all other fact inquiries: Trial fact-finders (1) render a final and binding decision that leads to imposition of the coercive power of the state, and (2) gather facts exclusively from the presentations of adverse parties.99 These distinctions create differences in how trials and investigations approach facts. Investigations examine plausible hypotheses—possibilities that cross some intuitive threshold placing them within range of potential probability. Investigators consider “leads” that are deemed possibly true but not necessarily (at least at early stages) probably true. In investigations, speculation is a useful tool to generate leads and possible avenues of further inquiry. The ultimate hypothesis—the one selected as the most likely—has not necessarily been selected yet and need not ever be selected. A congressional committee may fail to reach a conclusion or recommend legislation; a police detective may fail to identify a suspect, and leave the case classified as “unsolved.”

98. See Mueller & Kirkpatrick, supra note 1, § 3.2, at 107 (“A party carries the burden of production by introduction evidence sufficient to support the findings of fact that are necessary if she is to prevail.”).
99. Quasi-adjudicative processes, like administrative tribunals and binding arbitration, mimic these fundamental qualities of trials but may depart from the formal trial rules of evidence.
contrast, require claiming parties to commit themselves to the probable truth of 
a specific version—a singular narrative—of events. Moreover, that singular 
narrative must attain a sufficient level of factual detail in order to meet the legal 
burden of proof.

The distinctive characteristics of trials dictate a “specific-claim principle”— 
that parties to a trial must base their claims on a specific, detailed, and true set 
of facts in order to show entitlement to a legal remedy. This set of facts is 
woven into a single narrative, properly called the “theory of the case.”100 To be 
sure, there is no case or statute that specifically sets out such a requirement. 
However, a “theory of the case” requirement is implicit in two principles, one of 
which is specified in the law and the other of which is a practical necessity. The 
burden of production in litigated cases requires that a claimant must produce 
evidence sufficient to support a finding under the applicable burden of persua-
sion on every element of his claim.101 As a practical necessity, this can only be 
accomplished in the form of a narrative—indeed, implicitly, a detailed narrative 
is an implied legal requirement, as discussed further below. The theory of the 

A “claim” is a set of specific factual assertions of “what happened.” From 
what may have been several plausible hypotheses in an investigatory stage, 
parties to a trial are required to have committed themselves to a specific version 
of events. It is axiomatic in our justice system that a claim is entitled to a 
remedy only if it is true. While our system of trial and evidence is designed to 
accommodate the uncertainty inherent in reconstructing past events, it does so 
by allowing parties to base their claims on proof of what probably happened; 
but it does not permit parties to assert “possibly-true” alternative claims.102 And 
while jury decisions are not expected to reflect absolute certainty, the minimum 
probability for any jury finding is “probably true”; accommodating uncertainty 
does not mean permitting juries to base decisions on speculation about what 
happened.

The requirement of a (probably)-true claim implies that a claiming party must 
present a singular narrative. A true claim necessarily asserts that the liability-
creating occurrence was a specific occurrence that happened in a specific way.

100. My use of the term “theory of the case” is consistent with, but more rigorous than, conventional 
usage. Professor Mauet’s definition is typical of the prevalent “gestalt” definition:

A theory of the case is your side’s version of “what really happened.” It should incorporate all 
the uncontested facts as well as your side’s version of the disputed facts. It must be logical, fit 
the legal requirements of the claims or defenses, be simple to understand, and be consistent 
with the jurors’ common sense . . . 

. . . . A jury trial is essentially a competition to see which party’s theory of the case the jury 
will select as more probably true.

THOMAS A. MAUET, TRIAL TECHNIQUES 62 (8th ed. 2010).
101. See MUELLER & KIRKPATRICK, supra note 1, § 3.2, at 107.
102. This statement is fundamentally true, requiring only a slight qualification, discussed further 
below. See infra section III.A.2.
Consider an opening statement in an auto accident trial in the absence of such a principle:

The defendant may have driven the car—we’re not sure. If he did not, it is possible that he owned the car, though we won’t go so far as to say that he probably did. Another possibility is that his neighbor owned the car, but the defendant may have had the keys and given them to his daughter, who may have been drinking.

It would be facile to write this problem off as a question of “trial advocacy technique,” thereby implying that such hypothesized non-claims are “technically permissible” but do not occur as a practical matter because trial lawyers know they will be unpersuasive. The problem with the narrative in this opening statement—if it is a narrative—is formal and systematic, not merely practical. As Ronald Allen put it, if a party “may rely on ways in which the litigated event could have happened . . . , the task becomes one of establishing a probability conditioned on all conceivable evidence. This is obviously a burden that neither party could bear . . . ”103 The adversary system is not designed to place unmanageable burdens on parties. Moreover, under the adversary system, if the claiming party does not know the probable liability narrative, he cannot claim that he is probably entitled to a remedy.

The required commitment to a specific true narrative does not necessarily cover every aspect of the narrative, or every potentially relevant fact. But it is at least implicitly acknowledged that parties must commit themselves to a set of “facts of consequence” in order to proceed to trial.104 These so-called “ultimate

103. Ronald J. Allen, *The Nature of Juridical Proof*, 13 CARDOZO L. REV. 373, 378 (1991) (emphasis added). Allen persuasively argues that parties must offer “well specified cases,” by committing themselves to a particular version of determinative events as the probable truth. *Id.* at 381. My argument here is fundamentally in accord, insofar as Allen’s “well specified case” idea applies to claiming parties. *See infra* section III.C.2. Curiously, Professor Allen is also a leading figure in the critique of “conditional relevance,” contending that that concept—and, by extension, the concept of foundation and the requirement that relevant evidence must be probably true—is incoherent. *See supra* section I.D.3. An implication of my argument here is that Allen’s well-developed argument for “well specified cases,” spanning several articles and his position on conditional relevance, described above, are mutually contradictory.

104. This point is not stated in these exact terms, but is implicit in the analysis applied to summary judgment motions. The key holding of *Celotex Corp. v. Catrett*, 477 U.S. 317 (1986), is that a summary judgment motion requires the nonmoving party “to make a showing sufficient to establish the existence of [every challenged] element essential to that party’s case, and on which that party will bear the burden of proof at trial.” *Id.* at 322. A summary judgment motion does not require the moving party to present evidence affirmatively negating one of the nonmoving party’s facts of consequence. In *Celotex* itself, where the plaintiff purportedly had no evidence of how her husband had been exposed to defendant’s asbestos, *id.* at 319, requiring the defendant to prove a lack of exposure may have called upon the defendant to rebut numerous possible stories of liability, a burden which the Court implicitly found too onerous to place on a defendant, *see id.* at 322–24; *see also* Scott v. Harris, 550 U.S. 372, 380 (2007) (describing summary judgment analysis as requiring a court to adopt a “version of the facts” based on the “stor[y]” presented by the nonmoving party if, but only if, it is supported by the evidentiary record); *cf. Old Chief v. United States*, 519 U.S. 172, 188 (1997) (“[T]he prosecution may fairly seek to place its evidence before the jurors, as much to tell a story of guiltiness
facts” map onto the elements on which the jury is instructed to make findings in order to reach a verdict. Less widely acknowledged is that this claiming requirement—the obligation to commit to a version of events—extends beyond “ultimate facts” to include what evidence scholars unhelpfully refer to as “intermediate evidentiary propositions.” 105

2. The Requirement of Case-Specific Detail

The requirement that a plaintiff must commit to a single narrative (rather than basing his case on numerous possibilities) goes hand in hand with a requirement of specific detail. A plaintiff has made no progress toward proving his entitlement to a judgment by testifying under oath that “the defendant is liable to me,” or that “the defendant is liable to me for negligence.” A plaintiff who specifies the “essential (legal) elements” of his claim has barely gotten closer to proving his claim: “The defendant breached a duty of care toward me, causing me injury.” This is so even if a jury were to find him entirely believable. But the same is true if the plaintiff were to testify with a bare assertion of facts of consequence: “The defendant breached a duty by performing back surgery on me in a manner that falls below the standard of medical care in the Chicago area, thereby causing me chronic pain.” Even such “ultimate facts” can be fulfilled through an infinite variety of specific liability narratives: the surgeon may have cut a nerve, or operated on the wrong vertebra, or sewn up a surgical sponge in the patient’s body. Thus, a requirement of detail is implicit in a party’s commitment to a specific narrative of the basis for his claim. 106

How much factual detail should there be? The answer to that question is highly contingent, and seems to be based on a combination of intuition, tradition, and practical considerations. Our ability to reconstruct past events is limited not only by the inaccessibility of at least some information (memory...
fades, perception is mistaken, insincerity and narrative abilities skew witnesses’ descriptions, physical evidence deteriorates), but also by the limits we impose on the time and effort we will spend on reconstructing them: both pretrial investigations and trials are subject to these resource constraints. These constraints on the degree of factual detail that we can and do require, although practical and rational, are arbitrary.107 Whether a set of principles on the level of required detail is subject to description or prescription is an interesting question beyond my scope here.

The legal process greatly exaggerates its capacity to comprehend what has been called the “granularity” of facts: the amenability of facts to be either broken into component, more specific details, or to be (re)assembled into more holistic or general assertions.108 At any relative level of specificity or generality, facts are so easily disassembled or reassembled as to make the concept of “a fact” inherently unstable. The legal system’s use of and dependence on the granularity of facts—for example, distinguishing between “facts of consequence” (or “ultimate facts”) and specific “evidentiary facts”—is part analytical convenience and part legal fiction: we accept the notion of systematic distinctions among levels of fact for working purposes, even though they are plainly an illusion.

Consider the example of Ronald Allen’s auto mechanic.109 In a car-accident case, the plaintiff claims that the defendant negligently failed to inquire into the dangerous condition of her car shortly before she got into the accident. As proof of notice, the plaintiff offers testimony that the defendant’s mechanic told the defendant “your brakes are bad.” How many facts are we talking about? Two—mechanic’s statement and defendant’s hearing of it? Three—(1) mechanic made an utterance, (2) the utterance was “your brakes are bad,” and (3) the defendant heard the statement? Why not just one? Certainly, the number of facts cannot depend on the number of subject–verb combinations or the number of ands needed to express it in English. Unheard utterances are a different thing than heard ones; in theory, there could be one word to express the concept. And if English does not have that word, that it requires a conjunction of words (“heard utterance” or “utterance that was heard”) to express it is a linguistic artifact, and does not change the nature of the asserted fact. Similarly, the utterance is not an abstract thing, but a specific thing that conveyed a specific meaning: separating the act of speaking from the substance of what was said is a linguistic and narrative convention, rather than a signal that we are talking

107. In my own (anecdotal) experience, I have observed that employment discrimination cases of roughly equal complexity would be allowed one week of trial time in California to every one day of trial time allowed in Wisconsin.


109. See Allen, supra note 72, at 875. This is Allen’s slightly fleshed-out version of an example of “conditional relevance” supplied in the Advisory Committee’s note to FRE 104(b).
about more than one fact. Nor do meaningful utterances exist “in the air”; they are spoken by one sentient person to another in a commonly understood language, so “the fact” asserted in this instance arguably must also include the mechanic and the defendant as speaker and listener.

What interests us in Allen’s mechanic vignette is the probability of its occurrence as a whole. Because it is a salient event in a larger dispute, and perhaps even disputed itself, we need to engage with it in greater detail than we might otherwise. The content of what was said, and whether the defendant heard it are of particular interest to us given the significance of the vignette in the larger story of the auto accident. We may specify those component details, but it is still, in an important sense, one fact.

More generally, there is no defining number of facts that distinguish between a “single fact” and a “narrative.” Looked at one way, a simple fact—the defendant killed the victim, the auto mechanic told the customer that her brakes were bad—can be a narrative. To be sure, these one-sentence narratives are not richly detailed. But the difference between stories that are richly detailed and those that are not is not “the number of facts” but rather the degree of factual detail.

Our legal system imposes variable requirements on the degree of factual detail depending on the context of the inquiry. “The defendant wrongfully killed the victim” can be asserted as a single fact. Indeed, that occurs in our legal system all the time. A defendant entering a guilty plea in court might describe his crime of homicide in a single sentence. A defendant who pleads innocent of homicide and testifies on his own behalf at the ensuing trial might be impeached with a prior homicide conviction, which takes the form of a single assertion in a leading, cross-examination question: “In 1985, you were convicted of second degree homicide.” Thus, a “one-fact” version of homicide suffices for some evidentiary purposes, but not for others.110 There is nothing inherent in the “fact” of homicide that dictates “how many facts” are needed to tell the story.

For a jury to find that a case has been proven at trial requires a considerably more richly detailed factual narrative than these, for two related reasons. One is to give us the requisite level of assurance that, despite inherent uncertainty and the presence of factual dispute, the decision maker is sufficiently informed to understand and identify the narrative—“to know what probably happened”—in the specific case. More factual detail provides more specific knowledge in the reconstruction of a past (disputed) event and, therefore, greater assurance that the decision maker has correctly understood what happened. The amount of detail required to provide adequate assurance is an important part of our understanding of “burden of proof” and has been discussed by evidence theo-

110. These same principles are expressed in FRE 701, the lay opinion rule. There is no stable basis to distinguish “fact” from “opinion.” The narrative abilities of witnesses and requirements of the litigation will determine how much detail will be required of a witness’s testimony. See supra section I.B.
rists, albeit inconclusively, as a concept of evidentiary “weight.”

The other reason for a requirement of factual detail is to give the legal system (specifically, the judge) the requisite degree of assurance that there is a sufficiently tight “fit” between the specific narrative of what happened in this particular case and the general narrative that forms a legal rule, telling us the legal consequences that will ensue when this type of thing occurs. The legal narrative is reduced to a checklist of “elements” or “facts of consequence” that must be present in order for legal consequences to be imposed as a result of the particular occurrence. This “element” requirement is not unlike a screenwriting rule that a “romantic comedy” must have the elements “boy meets girl, they fall in love, they fall out briefly, and they end up together when the boy makes a moving speech after running or driving some great distance to find the girl.” Similarly, negligence requires a narrative that includes “duty, breach, causation, and damages.” The requirement of “elements” and “facts of consequence” are an imposition the legal system makes that certain details must be broken out of a broad assertion of fact as a precondition to proving a disputed case at trial. Neither rationale for the detail requirement means that in some epistemic or ontological sense there are a specific number of facts in a case or indeed any number of facts greater than one.

3. The Logical Structure of Claims and Foundation: The Doctrine of Entailment

The “specific-claim principle” holds that because the story giving rise to legal consequences happened in a particular way, the party claiming a legal remedy must therefore commit himself to a single narrative as the probable truth. However complex this narrative, it is in essence a single event or single “fact” that “granularizes” into component facts primarily to satisfy the legal requirement of sufficient detail.

It follows that there is no analytical distinction between facts at various levels of specificity in the narrative: if the overall liability narrative must be probably true, then all essential component “fact fragments” must also be probably true. If the overall claim must be case-specific, so must the detailed facts comprised by the claim. If the overall liability narrative must reflect a commitment to a singular version of events, so must the detailed facts that make up the narrative.

These commonsense intuitions are captured in the axiom of inductive logic known as “logical consequence” or “entailment.” Inductive logic maintains that


112. “Primarily,” but not exclusively. Practical limitations involved in reconstructing past events based on firsthand knowledge—limitations on the ability to perceive events, to recount them, and to understand the recounting of them—result in the narrative being broken into “items” of evidence presented through the testimony of numerous witnesses and the presentation of numerous documents and things. But “primarily” because even a case in which a single witness perceived all relevant events would still require recounting in sufficient factual detail.
any proposition—any assertion of fact—can be subdivided into component propositions, and each one assigned a probability. The overall proposition is said to “entail” the components and cannot be more probable than any of the entailed components. If fact B entails fact A, the probability of B is less than or equal to the probability of A.\textsuperscript{113} The fact assertion “he arrived at the airport on time” entails “he arrived at the airport,” and thus the probability that “he arrived at the airport on time” cannot be greater than the probability that “he arrived at the airport (at all).” From this it follows that if X entails facts Y and Z, then the probability of X will be less than or equal to the lesser of the two probabilities, Y and Z. In other words, the probability of a fact is less than or equal to the probability of its least probable entailed fact.\textsuperscript{114}

The single true narrative of liability entails all facts necessary to establish the truth of the narrative. These facts must each themselves be probably true if the overall liability narrative is to be probably true. The improbability of a necessary detailed fact defeats the liability narrative.\textsuperscript{115}

This does not mean that a successful claim requires acceptance of every last narrative detail offered by the claiming party. Facts that are probably untrue do not defeat the narrative if they are ultimately deemed nonessential. Even if there were rough agreement among the plaintiff, his lawyers, and the jury about the requisite level of factual detail, there is nevertheless likely to be some disagreement about whether particular details are required in a given case. “Motive” evidence is generally seen by trial lawyers as de rigueur, yet there are undoubtedly cases where the jury does not buy the prosecution’s motive theory but properly convicts anyway. A jury does not have to use every offered item of arguably relevant evidence in order to deem the burden of persuasion met. There will always be cases where the jury can dismiss items of evidence as probably untrue, but rationally find for the offering party anyway. The reason is that the dismissed item was not, after all, relevant, or it was an unnecessary detail.

The specific-claim principle is built into the rules of procedure and evidence. It both explains and justifies why the test for sufficiency to admit an item of evidence is identical to the test for a case surviving judgment as a matter of law (including summary judgment) and going to the jury. Judgment as a matter of

\textsuperscript{113} IAN HACKING, AN INTRODUCTION TO PROBABILITY AND INDUCTIVE LOGIC 60 (2001). To prove this intuitive point, requires the axiom of total probability, by which Pr(A) = Pr(A & B) + Pr(A & not-B). If B entails A, then B is logically equivalent to A & B. Substituting Pr(B) for Pr(A & B) in the “total probability” equation, Pr(A) = Pr(B) + Pr(A & not-B). Given that 0 \leq Pr(A & not-B) \leq 1 (by axiom in inductive logic, all probabilities are a positive number between zero and one), it follows that Pr(A) \geq Pr(B). Id.

\textsuperscript{114} Suppose X entails Y and Z. By axiom, Pr(X) \leq Pr(Y & Z) = Pr(Y) \cdot Pr(Z). The probability of any proposition is between zero and one, and the product of any two numbers between zero and one is always less than or equal to the smaller of the two numbers.

\textsuperscript{115} Cf. Michael S. Pardo, Second-Order Proof Rules, 61 FLA. L. REV. 1083, 1104 (2009) (“A fact is proven by a preponderance of the evidence when the best explanation of the evidence and events in dispute includes this fact.”).
law ("JMOL") assesses whether there is evidence sufficient to support a finding of probable truth of the claiming party’s “facts of consequence” (aka “material facts” or “ultimate facts”).\textsuperscript{116} Foundation assesses whether there is evidence sufficient to support a finding of probable truth of the claiming party’s offered evidentiary fact. Unless this is merely a curious coincidence, the best explanation is that the nature of facts of consequence and more specific evidentiary facts are not analytically distinct. The latter are simply more detailed expressions of the former, which themselves are simply more detailed expressions of the single true liability narrative offered by the claiming party. Relevance is not the same as sufficiency, but there is a sufficiency requirement imposed on all facts at all levels of detail—from the most specific to the “ultimate” facts that map onto the essential elements of the claim.

In sum, every assertion of fact, from the claim on down to a specific item of evidence, has entailed component facts. For claims, those entailed facts are specified by the substantive law. For lower order (more case-specific) facts, the entailed facts vary, depending entirely on the specific narrative of the case. But they are \textit{dictated} by the case narrative. The facts that must be shown about an item of evidence—this is the life insurance policy insuring the life of the victim and which the defendant knew named him as the beneficiary—are required every bit as much as the elements of homicide, and must meet the same burden of production, “evidence sufficient to support a finding” of probable truth. How do we know what facts are so required of individual items of evidence? They include all case-specific facts needed to determine the relevance of the evidence. This point is developed in the next section.

C. FOUNDATION AS A PRECONDITION OF RELEVANCE

The argument thus far has suggested in various ways that foundation is a precondition of relevance. The four examples of “hypothetical” relevance in section I.D were each shown to be irrelevant because they were missing one or more aspects of what I have defined as well-founded evidence: they were not case-specific, assertive, and probably true. Relevance compares the state of knowledge with and without “the evidence.”\textsuperscript{117} Because foundation is a quality required of all evidence, “the evidence” in FRE 401 must be a case-specific assertion of probably true fact.

In this section, I will attempt to explain more rigorously how foundation is a precondition of relevance. Relevance is correctly conceived as a quality of evidence tending to increase the probability of a fact of consequence through a process of inductive reasoning. This inductive reasoning process depends on the jurors’ logical deployment of their background knowledge—empirically based generalizations about the world—to the case-specific facts presented at trial. I will show that a foundation for offered evidence is complete when, and only

\textsuperscript{116} See Fed. R. Civ. P. 50.
\textsuperscript{117} See Fed. R. Evid. 401.
when, the jury can make this inductive connection between the evidence and a fact of consequence by relying entirely on such generalizations. In other words, foundation includes all case-specific facts that must be true in order for the evidence to be deemed relevant.

1. The Logic of Relevance: Inferential Chains

The role of “generalizations” in analyzing the relevance and probative value of evidence is widely known and accepted among evidence commentators. An item of evidence has probative force only through the strength of the generalizations that underlie the inferential chain between the evidence and the fact of consequence.

To illustrate the point, I borrow the diagram form developed by Professors Allen, Kuhns, and Swift. A useful illustration can be drawn from the case of People v. Johnson, in which an inmate at a maximum-security prison was accused of assaulting two prison guards. The defendant Johnson, after being fed lunch in his cell, had refused to slide his lunch tray out through the slot in the cell door, withholding it to protest an alleged grievance. Three guards subsequently entered his cell, and, according to the prosecution, two were slightly injured in a scuffle that began when Johnson attacked them. Johnson contended that the guards entered the cell intending to beat him up, and that they attacked him. The defense case included testimony from Johnson’s cellmate that the guards were wearing heavy-duty work gloves when they arrived at the cell. The relevance of this item of testimony is its bearing on the question of the guards’ intent when they entered the cell. The defense wished the jury to infer that the guards put on gloves to protect their hands while administering a premeditated beating of Johnson.

This proposed chain of inferences can be mapped in the following manner. “EF” means “evidentiary fact”—the offered item of evidence itself. “IF” means “inferred fact,” an intermediate factual proposition along the way to the “fact of consequence” (“FOC”), which in turn maps onto the “essential elements” (“EE”) of the claim or defense.

While the jury is not required to draw any of the successive inferences to the right of the EF, the evidence is relevant only if a jury reasonably could draw all those inferences. In other words, the set of moves from one inference to the next must be logical. Moreover, it is not necessary that each successive inference be “proven” or “established” or “shown” to be more likely than not. Rather, to be relevant under FRE 401, it is necessary only that each inference in this chain is made (even slightly) more likely than without the evidence. That is the significance of the “any tendency” threshold.

118. See, e.g., Allen, Kuhns & Swift, supra note 1, at 141–46.
119. Id.
120. See id. at 142–43 (analyzing People v. Johnson (Cal. Super. Ct., Del Norte Co., July 27, 1992)).
121. This diagram reflects the traditional account. I will amend it below to specify that each assertion after IF 1 is subject to the any tendency standard. The relationship between EF and IF 1 is
What connects each inference—that is, each move from left to right—is a set of “generalizations about the world.” Each generalization is an assertion of fact—not a fact specific to the case, but a fact about “how the world works” most of the time. Generalizations may include facts of natural science (nighttime is dark, water makes things wet) or facts of human behavior (greed is a motive for many people). The key point about these generalizations is that they are deemed to be matters of “common knowledge” or “common sense”—knowledge, impressions, and intuitions that jurors are expected to have and to use in making logical inferences about evidence at a trial.

This next diagram makes explicit the generalizations that underlie the relevance chain from Figure 1.

![Figure 1. “Inferential Chain” Demonstrating Relevance](image)

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This next diagram makes explicit the generalizations that underlie the relevance chain from Figure 1.

![Figure 2. “Inferential Chain” Showing Underlying Generalizations](image)

These are the minimum generalizations needed to make this particular chain of relevance work. But not all three of these generalizations are equally easy to accept, and I will discuss the easiest first. Starting at the far right, it is evident that the guards’ intent to start the fight is relevant based on a generalization about the world that people with an intent to do something are at least slightly more likely to do that thing than people who have no such intent. There are, of course, foundational, meaning that there must be evidence sufficient to support a finding that IF 1 can be found from EF. See infra section II.C.2.
course, exceptions to this broad behavioral generalization, but the import of the “any tendency” standard means that the tendency of intent to correlate with action need only be more likely than not. If actions were no more likely to be taken by people who intended to take them, then the inference from intent to action would not be logical and the evidence of intent would not have any tendency to prove what the guards did.122

The generalization at the far left, linking the offered evidence (the cellmate’s testimony) to the inferred fact (the guards were in fact wearing gloves) is that witnesses more likely than not provide truthful and accurate testimony. One is tempted to dispute this: every day, in courtrooms across the country, witnesses lie or err.123 But our system of fact-finding through witness testimony is predicated on the belief that most witnesses tell the truth and recount events reasonably accurately.124 If it were more likely that witnesses on the whole give false or mistaken testimony, we could not rationally base fact-finding on what they told us.125

The generalization that links the guards’ glove-wearing to their alleged intent is somewhat more problematic. Is it true that prison guards who put on work gloves before going to an inmate’s cell are more likely to want to beat up the inmate than those who do not put on gloves? The “strength” of an item of evidence—its probative value—is a function of the degree of correlation of the underlying generalizations: if guards are only slightly more likely to put on gloves to beat an inmate, the evidence is not as probative as if there were a high correlation between glove wearing and attacking inmates. But the relevance inquiry simply asks whether the generalization is probably true: whether the

122. The inferences are “logical” in the sense that they represent a coherent and consistent induction in light of the empirical or experiential generalizations. This logical quality is reflected in their adherence to a syllogistic structure. Each inferential step (from EF to IF1, IF1 to IF2, IF2 to FOC) is a separate syllogism. The first or leftward fact is the minor premise, the generalization is the major premise, and the next inferred fact to the right is the conclusion. For example:

**Major Premise:** Guards who put on gloves are more likely to intend to initiate violent contact with an inmate than guards who do not put on gloves.

**Minor Premise:** The guards who went to Johnson’s cell put on gloves.

**Conclusion:** Therefore, the guards who went to Johnson’s cell (are more likely to have) intended to initiate violent contact with Johnson.

Here, the phrase “more likely” means “more likely than without the evidence.” See Fed. R. Evid. 401.

123. Probably more common than perjury are other contributors to inaccurate testimony: faulty perception, faulty memory, or the failure to express memory and perception clearly in words on the witness stand.

124. See, e.g., Stein, supra note 92, at 74 (noting that many decisions rely “on the generalization holding that disinterested witnesses generally tell the truth”); Nance, supra note 1, at 489 (“The presence of such potential testimonial defects is unlikely a priori . . . ”). This point seems axiomatic but requires further discussion to show that plausible-but-improbable evidence is irrelevant. See infra section II.D.1.

125. Even in the rare instance where disbelief of a fact assertion not-X by a witness implies, by itself, the truth of X, the traditional rule holds that that is insufficient to meet the burden of proof of X. See Dyer v. MacDougall, 201 F.2d 265, 268–69 (2d Cir. 1952) (per L. Hand, J.).
correlation holds at all, even slightly. Further, the existence of plausible alternative reasons to put on gloves (hygiene, for instance, or “nonviolent” hand protection) does not necessarily defeat the generalization, so long as the generalization is true slightly more than half the time. The probable truth of these generalizations is one of the primary sources of lawyers’ arguments over the relevance, probative value, and proper inferences to draw from evidence. These arguments are the stuff of relevance objections and summations to the jury. The admissibility question turns on whether the alternative reasons for glove wearing preponderate as a matter of common sense and experience, thereby undermining the relevance argument that the “gloves imply violent intent” generalization is probably true.126

Relevance objections are typically objections to the validity of the underlying generalizations, and the judge rules on such objections by asking whether a reasonable juror could find the generalizations to be probably true.127 One could imagine a judge going one of four ways. First, the judge could accept the generalization, and admit the evidence as relevant under FRE 401. Second, the judge could reject the generalization outright, and exclude the evidence as irrelevant. Third, the judge could decide that the question of glove-wearing behavior of prison guards is not a matter of common knowledge but rather one of “specialized knowledge” within the meaning of FRE 702. In such a case, the judge would deem the evidence relevant if the defendant produced expert opinion testimony on why prison guards wear gloves when going to an inmate’s cell. Or fourth, the judge could decide that the generalization about glove-wearing behavior is too general or “speculative,” and determine that the glove-wearing evidence is relevant if the defendant produces nonexpert testimony showing that putting on gloves signified an intention to fight in this case: nonexpert opinion testimony based on firsthand observation of prior incidents of guards donning gloves before attacking inmates, for example, or perhaps testimony that one of the guards was overheard referring to the gloves as “boxing gloves” while putting them on. The third and fourth approaches treat the evidence as “conditionally relevant” under FRE 104(b), as discussed further below.

Generalizations in the inferential chain are, from time to time, subject to challenge. Here, the significance of foundation emerges. A judge who is confused or unconvinced about the relevance of the testimony that the guards were

126. It is possible that evidence can “backfire” on the offering party, where generalizations impliedly asserted by the offering party are reversed by the fact-finder. For example, if the jury concludes that guards are more likely to use bare hands when they intend to beat an inmate, the glove evidence would help the prosecution. In this sense, a fact-finder’s rejection of the offering party’s relevance generalization may not always make the evidence irrelevant, in that it would be relevant to make the offering party’s asserted fact of consequence “less likely than without the evidence.” But in most cases the generalization fails because a jury finds the generalization inconclusive: for example, “Guards who put on gloves are no more or less likely to intend to initiate violent contact with inmates.”

127. Allen, Kuhns & Swift, supra note 1, at 145.
wearing gloves might, in response to an objection from the prosecutor, tell defense counsel to “lay some foundation.” A “conditional relevance problem” is essentially an objection that relevance cannot be satisfactorily established based on one or more of the generalizations underlying a chain of relevance, but must instead be substituted with evidence specific to the case. These issues will be taken up in section II.C.3.

2. The Necessity of Well-Founded Evidence to Begin an Inferential Chain

Well-founded evidence is necessary to draw any of the inferences that create an inferential chain that makes up a relevance argument. Consider the instantly recognizable absurdity of evidence that fails to make a specific assertion about the case: suppose, in the Huddleston case, the prosecution offers evidence that some TVs were sold around the same time Huddleston allegedly sold the stolen videocassettes, but offers no information as to who sold the TVs or whether they were stolen. Consider any of the four examples of irrelevant evidence given above in section I.D. In each instance, the evidence fails the tests of well-foundedness. The life insurance policy, the knife, the mechanic’s statement, and the Huddleston examples fail to specify or assert a necessary connection to the case. Complete, specific assertions would name the beneficiary and insured, would name Huddleston and assert the TVs were stolen, or would assert that the mechanic’s statement was “probably heard by the defendant,” and so forth. Instead, each offered item raises a mere possibility of case-specific information. Thus, the relevance in each case is hypothetical rather than real, providing no information more specifically informative than what the jurors already knew as a matter of common sense and experience. They knew before entering the courtroom that life insurance policies exist; that stolen TVs and other stolen goods are frequently sold; that information sufficient to put people on notice of dangerous conditions is often out there. The key point is that the evidence is irrelevant because it lacks foundation.

The conventional inference chain, like the conventional theory of relevance itself, needs some significant adjustment. In Figure 2 above, note that only the first inference is “evidenced” in the case, that is, supported by case-specific evidence. The remaining inferences are supported by “generalizations about the world.” Put another way, the first generalization is not a generalization at all but a case-specific finding about a specific witness, that his testimony is probably true. As argued below, if the testimony is not probably true, the evidence will not be relevant. At the admission stage, the probable truth is assumed, and the jury is entitled to revisit it when analyzing and weighing the evidence. We neither ask nor permit jurors to assess witness credibility based on general odds of truth telling, but rather demand individualized determinations. That is almost the whole point of trying cases. We only generalize about credibility insofar as we make it an operating assumption about the system of trials. We impose that generalization (witnesses are usually reliable) on the trial judge by forbidding her from making her own individualized credibility determinations as a condi-
tion of admitting evidence.

But the other generalizations are indeed generalizations about the world: they are not case-specific and need not be reduced to case-specific form in order to enable the jury to assess relevance. So a slightly more accurate graphic might look like this:

![Diagram](image)

Figure 3. Revised “Inferential Chain” Distinguishing Foundation from Generalizations

This diagram is intended to better illustrate the distinction between foundation and relevance. “PE” is a new abbreviation, which stands for “proffered evidence.” If foundation is adequate, the proffered evidence is sufficient to support a finding of the Evidentiary Fact (still “EF”).

In sum, just as FRE 401 begins by telling us that “relevant evidence is evidence,” we can see that a chain of inferences must begin with evidence—a case-specific assertion of evidentiary fact. The generalizations that move the inferences forward are not evidence. Foundation for evidence is thus a vertical support holding up the evidentiary fact whose relevance is tested by the inferential chain. While the horizontal inferences need only be more likely than without the evidentiary fact, the evidentiary fact must be probable.

3. Conditional Relevance as an Aspect of Foundation

The role of conditional relevance now begins to come into focus: conditional relevance is a requirement that foundations be complete rather than relying on generalizations to do the work of case-specific, evidenced facts. Let us return to the murder case in which the prosecution’s theory of the case is that the defendant killed the victim to collect on the victim’s life insurance policy. (To see that the analysis is not contingent on a criminal burden of proof, one can simply recast the scenario as a civil declaratory relief action by the insurer to void the policy on the ground that the putative beneficiary wrongfully killed the
The prosecution (or plaintiff insurer) offers an insurance policy with blanks where the names for the insured and the beneficiary should be. The prosecution/plaintiff claims the evidence is relevant to show motive under this theory:

![Relevance Chain for Murder Case Motive, Version 1](image)

Figure 4. Relevance Chain for Murder Case Motive, Version 1

Here, generalizations G-3 and G-4 seem reasonable. G-3, “a person who knows he stands to benefit financially from the death of another has a motive to kill that other person,” leads to IF 3, “D is more likely to have had a motive.” G-4, “a person with a motive to kill is (very slightly) more likely to have killed than someone with no such motive,” slightly increases the likelihood of the fact of consequence.

But no court would admit this evidence, and no party would offer it, because it is utterly unfounded. The jury is asked to speculate about too much: whether the policy insured the victim, whether it named the defendant as the beneficiary, whether the defendant knew about it. The problem arises with G-1 and G-2. The first generalization, G-1, is that “the fact that life insurance policies exist makes it more likely that the victim had a policy naming the defendant as the beneficiary than if we had no information about whether life insurance existed or not.” This fails to cross the hypothetical-relevance threshold: juries already know that life insurance policies exist.

Suppose some additional foundation is offered. The life insurance policy does in fact name the victim as the insured and the defendant as the beneficiary. It is important to see how this additional information changes the inference chain. G-1, deemed too trivial to create relevance, has been replaced by case-specific evidence; as a result, IF 1, the first inference, is now an evidenced fact rather than an inference produced by generalizing from evidenced facts. G-1 and IF 1 have been absorbed into the foundation. To emphasize this point, I have not changed the numbering of the remaining inferences and generalizations, in Figure 5.
Is the document relevant now? We certainly have moved from an absurd hypothetical to a plausible argument for real relevance. Yet a judge could rule the policy inadmissible unless there is some further evidence—the judge might say, some additional foundation—that the defendant was actually aware that he stood to gain from the victim’s death under this policy. The difficulty for the relevance argument is that G-2 is also somewhat questionable. The generalization might be phrased as “a person is more likely to know about [or ‘be informed about’] a life insurance policy when he is the beneficiary than when he is not the beneficiary.”

This analytical situation is easily recognizable as one of conditional relevance. A conditional relevance objection is fundamentally a claim that a generalization in the chain of inferences is inadequate to connect the evidentiary fact to the theory of the case, and must therefore be replaced with a specific well-founded fact. The specific well-founded fact is, in the terms of FRE 104(b), the fact condition on which relevance depends. It is highly significant that the degree of truth required of a generalization is the same as the degree of truth required of the case-specific fact replacing it. Just as the generalization must be probably true for the inferential chain to function, the substitute for that generalization—the factual condition—must be probably true. That quality is ultimately for the jury to decide, so the standard is stated as evidence sufficient to support a finding that the factual condition is probably true.

As a judge, I would rule that the evidence is not relevant. Like all fact situations which raise the issue of “actual notice,” the fact that the substantive information itself is contained in a written or spoken utterance is not relevant unless it is probable that the person in question heard or saw or learned about that information. A complete foundation for the exhibit in this example is, “a life insurance policy on the life of V naming D as the beneficiary, which D knew about.” Until the probability of D’s knowledge is established, we have only a
speculative possibility of the existence of the motive. My “conditional relevance” ruling would require that generalizations 1 and 2 be specifically evidenced and made part of the foundation for the life insurance policy. There must be evidence sufficient to support a finding that there is a life insurance policy insuring V and naming D as the beneficiary, which D knew about:

![Relevance Chain for Murder Case Motive, Version 3](image)

**Figure 6. Relevance Chain for Murder Case Motive, Version 3**

The key point here is not where the line should be drawn—how this particular conditional relevance argument should be resolved—but the fact that there is a line: one that marks where foundation ends and relevance begins.

Foundation is the point in an inferential chain up to which case-specific, evidenced facts are required. Relevance is the point at which generalizations are permitted to take over and complete the link to the theory of the case. To be sure, where that line is drawn in a particular instance can be subject to debate. But that simply acknowledges that there is room for argument over relevance.

These concepts are captured in FRE 104(b), the conditional relevance rule.¹²⁸ Maybe this rule could have been better written, but it is not as confusing as its critics make it out to be.¹²⁹ The FRE 104(b) “condition of fact” is a generalization in a relevance chain that the court deems too weak or speculative to link the offered evidence to the offering party’s theory of the case. The “fulfillment of a condition of fact” means that the court simply requires that the generalized assertion be evidenced—that is, with case-specific evidence. This new piece of case-specific evidence becomes part of a more complete foundation.

As argued above, this analysis applies every bit as much to testimony as to

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¹²⁸. See supra section I.C.
¹²⁹. See supra section I.D.3; infra section III.B.
exhibits. Testimony, no less than an exhibit, is packaged as a “claim” (to use FRE 901 language)\footnote{130. See \textit{Fed. R. Evid.} 901(a) (“The requirement of authentication or identification as a condition precedent to admissibility is satisfied by evidence sufficient to support a finding that the matter in question is what its proponent claims.”).} or a “specific assertion” (to use my language). The claim or specific assertion must be believable, subject to a finding that it is probably true. In \textit{Huddleston}, as discussed above, the Court essentially ruled that a complete foundation for the stolen-TV episode required an assertion that the TVs were stolen. The jury would not be permitted to “speculate” or “overgeneralize” about that fact: case-specific evidence would be required—in other words, more foundation. That entirely testimonial claim required a complete foundation, just as documents do.

What FRE 104(b) refers to as fact conditions on which relevance depends are ad hoc requirements made by a judge that one or more generalizations in a relevance chain of inference be replaced with specific evidentiary facts. \textit{Conditional relevance is simply the specification of generalizations in a relevance chain.}

The foregoing discussion demonstrates that foundation is a precondition of relevance. Any assessment of relevance requires the presence of “evidence,” and that evidence must be well-founded: case-specific, assertive, and probably true. The foundation for that evidence includes all case-specific facts that must be true in order for the evidence to be relevant.

\section*{D. THE IRRELEVANCE OF PLAUSIBLE-BUT-IMPROBABLE EVIDENCE}

The foundation theory asserts that evidence must be probably true in order to be relevant. The contrary proposition is that improbable evidence can be relevant. To resolve this argument, we have to define and describe what plausible-but-improbable evidence is, because there are different forms it could take. One possibility is that the evidence is well-founded but simply disbelieved by the jury. Alternatively, evidence could be prima facie improbable: that is, the evidence on its face is nonassertive, as that term is defined above, asserting a mere possibility rather than a specific, probably true fact. This section will consider both in turn. I will then argue that this largely intuitive argument against the relevance of improbable evidence finds some formal support in basic probability theory.

\subsection*{1. Disbelieved Evidence}

Suppose Allen’s mechanic testifies, “I told the defendant that her brakes were bad,” but the jury does not find the mechanic credible, albeit by a small margin: the jury rates the probability that the testimony is true at 0.4. Note that this testimony is well-founded and will be admissible because the judge must deem the witness credible for purposes of foundation rulings.\footnote{131. See, e.g., \textit{Allen, Kuhns & Swift}, supra note 1, at 238.} Still, the question
remains whether the jury can logically use this testimony as tending to make a fact of consequence more probable. The answer to that question sheds light on the relevance of prima facie improbable evidence more generally.

This conclusion comports with our common-sense notion that rational fact-finding must be based on probably true witness testimony. It also comports with the standard jury instruction that the testimony of one witness may be believed over the contrary testimony of several witnesses.¹³²

2. Prima Facie Improbable Evidence

By “prima facie improbable evidence,” I mean purported evidence that takes the form of nonassertive statements. Suppose Allen’s mechanic testifies in one of the following three ways:

(1) “I might have said to the defendant, ‘your brakes are bad.’”

(2) “I’m not sure whether or not I said to the defendant, ‘your brakes are bad.’”

(3) “There is a 40% chance that I said to the defendant, ‘your brakes are bad.’”

The offering party might assert that versions 1 and 2 present a 40% probability that the mechanic in fact said that to the defendant. Likewise a law professor might say, “Assume, based on this testimony, that there is a 40% probability that the mechanic in fact told the defendant ‘your brakes are bad.’” In version 3, the witness himself asserts that there is a 40% probability that he made the statement to the defendant.

What are these probabilities based on? Versions 1 and 2 are merely alternative linguistic formulas that express uncertain possibilities. No reason is offered to assign a 40% probability, or frankly any particular probability, other than the say-so of the lawyer or law professor presenting the case. Version 3 is the same in this respect, despite superficial appearances. Without more detail, the witness’s 40% assessment is unevidenced. In FRE 701 terms, it is an inadmissible opinion either because it is unhelpful to the jury, because it is not rationally based on the perception of the witness, or both. Without more detailed facts it is impossible for the jury to know what this number means.

A more robust and detailed version of these possibilities is therefore needed. Might these details themselves be presented as plausible improbabilities? The mechanic might say, “I might have gone to work that day. The defendant might have been a customer. I might have checked her brakes.” But the problem is that these possibilities existed to some degree a priori as a matter of general

¹³² See, e.g., JUDICIAL COUNCIL OF CALIFORNIA CIVIL JURY INSTRUCTIONS § 107, at 19 (2010) (“Do not make any decision simply because there were more witnesses on one side than on the other. If you believe it is true, the testimony of a single witness is enough to prove a fact.”).
knowledge. Unless there is some basis to distinguish between plainly unevidenced low-probability “facts” and lower-middle-probability facts that are not quite probable, then the testimony is plausible fiction. Is it informative to the jury to be introduced to one of the mechanics in town? Is the witness even a mechanic at all? What if he testifies, “I might be a mechanic”?

If testimony can be presented in this form, as a prima facie “plausible improbability,” then relevance theory presents us with an infinite regress of increasingly granular, less-than-probable detail. The only way to stop the infinite regress is by asserting probable facts. Perhaps the 40% possibility that the mechanic said this to the defendant is informative, but if so, it is only because he has asserted some probably true underpinnings that give substance to that possibility: he is in fact a mechanic, the defendant was his customer, he did check her brakes. This is how circumstantial evidence works: direct observation of a fact of consequence is not available, so the evidence is taken down to one level of more granular detail, or even perhaps more than one level. But at some level there must be probable truth or else the narrative is built on a foundation of sand.

Consider the alternative. Plausibility cannot be the test of probably true claims because fiction can be plausible. An infinite regress of plausible maybes and might haves is merely realistic fiction. As an epistemological matter, fact-finding must be grounded in a good faith attempt to reconstruct what happened rather than to imagine plausible scenarios that may have happened. That requires, not only from the offering party, but also from the fact-finder, that fact assertions deemed to influence probabilities be anchored in probable truth. Possible truth is not an anchor, and to rely on an infinite regress of possible truth or unevidenced opinions about “plausible scenarios” is epistemologically no different from a juror deciding a murder case by something he read in a mystery novel. Mystery novels may be quite “realistic” and may well be the source of some generalizations jurors make about the world. Perhaps some of those generalizations are valid. But as generalizations they are not evidence. Indeed, “plausible fictionalizing” is a very good definition of speculation.

The foregoing argument should not be understood as asserting that “maybe” and “it is possible” can never be said to frame a question to a witness or that those qualifications said by a witness necessarily render the testimony irrelevant. A witness’s degree of certainty is relevant to weighing his testimony, and “maybe” statements can test or illustrate the edges of his certainty. Possibilities can be relevant to undercut opposing fact assertions of high degrees of certainty. Sometimes witnesses do not say what they mean, and juries must be given some latitude in interpreting testimony; there may be situations where a witness says “possibly” but can be understood to mean “probably.” Finally, there may be situations where the existence of a possibility is itself a fact of consequence; for example, a defendant aware of the possibility of accidents may have a duty of care to take preventive steps.
3. Formal Support for the Irrelevance of Improbable Evidence

Probability theory might shed further light on this question. To examine formally whether improbable evidence can be relevant, it is necessary to consider what probability theorists refer to as “prior probability”133 and what FRE 401 calls the probability of a fact of consequence “without the evidence.”134 According to basic Bayesian theory, an item of evidence E confirms a hypothesis H if and only if $Pr(H|E)/Pr(H)$, where $Pr(H|E)$ is “the probability of H given (or “assuming the truth of”) the evidence E” and $Pr(H)$ is “the probability of H without the evidence E,” otherwise known as the “prior” probability of H.135 This axiom of probability is essentially restated in FRE 401. There is a longstanding academic controversy over the extent to which probability theory can shed light on evidence questions.136 Nevertheless, given the incorporation of the “Bayesian” definition of confirmation into FRE 401’s definition of relevance, it is hard to dispute that some fundamental axioms of probability theory do apply. Moreover, the fundamental axioms of probability theory provide a useful analytical framework for understanding key aspects of
the structure of legal proof.\textsuperscript{137}

Setting the prior probability is controversial. When Professor Nance and others argue that evidence is relevant so long as its truth is “not impossible,” they argue in essence that the prior probability without the evidence equals zero.\textsuperscript{138} But priors cannot be zero in a jury trial context because the common knowledge jurors bring to bear in considering trial evidence raises probabilities of any fact assertions advanced at a trial to something substantially above zero, even before any evidence is heard.\textsuperscript{139} Jurors may have “personal” probability assessments at the start of a trial about the probabilities of people getting hit in crosswalks, or being told to get their brakes fixed, or whatever. These probabilities are not theoretically invalid starting points, insofar as Bayesian probability theory acknowledges that they can (and indeed should) be rationally based.\textsuperscript{140} It is theoretically possible to construct an argument that prior probability of evidentiary proposition X should be based on the jury’s personal probability assessments—perhaps an average. But to use this theory to prove that plausible–improbable evidence can be relevant in light of those personal prior probabilities would require demonstrating that jurors are always initially disbelieving of claims. Not only that, it would require a showing that their prior probability assessments are systematically lower than 0.4 if we want to take that number as an illustration, or less than “plausible” if we want to rely on that description. Either claim seems dubious.

\textsuperscript{137.} See, e.g., Pardo, supra note 115, at 1100 (noting “the important value probabilistic interpretations serve in illustrating the analytical implications of proof rules”).

The controversy over Bayesianism in evidence scholarship is fueled in part by a tendency of legal academics to conflate Bayesian epistemology with probability theory more generally. To say that all evidentiary assertions can be assigned a probability, and that all such probabilities must be between zero and one; that the sum of the probabilities of H and \textit{not}-H necessarily equal 1; that the probability of two independent events, A and B, both occurring is the multiple of their individual probabilities, etc., are not assertions about epistemology—and hence, not “Bayesian”—but are simply mathematically derived postulates of inductive logic. As descriptions of probabilities, and even of analytical processes of inductive logic used by fact-finders, they should be uncontroversial. \textit{Cf.} SOBER, supra note 133, at 8 (distinguishing Bayes’ Theorem from Bayesianism). The controversy properly arises over when belief is justified; in legal terms, over when the burden of proof has been met. Thus, the more substantial source of controversy in legal scholarship concerns how much probability theory can tell us about whether the burden of persuasion has been met in a case—the philosopher’s “justified belief” being the equivalent of the adjudicative fact-finder’s “finding that the burden of persuasion has been met.” Some scholars misuse the term Bayesian to include any reference to probability theory in the discussion of evidence questions, or to believe that any use of probability theory to illustrate evidence questions entails acceptance of the idea that probability theory can offer a complete theory of justified belief in legal fact-finding. In this Article, I use probability postulates in the limited manner. My comments about evidentiary “weight” and “detail” should make clear that I have not endorsed the view that probability theory supplies an adequate theory of justified belief in legal disputes.

\textsuperscript{138.} See supra section I.D.2.

\textsuperscript{139.} Indeed, modern philosophic logic considers probabilities of zero and one to be “sticky,” meaning that they are not amenable to change in light of new evidence. \textit{See} SOBER, supra note 133, at 152. This view confirms the idea that probabilities of zero and one have no place in a trial setting (or, for that matter, any setting in which propositions are not tautologous and require empirical proof).

\textsuperscript{140.} See HACKING, supra note 113, at 173 (noting that personal probabilities should be coherent and, as such, can form the basis for confirmation pursuant to Bayes’ Theorem).
A much more defensible prior probability is 0.5. Juries are uniformly required and instructed to approach cases without a predisposition in favor of either side.\textsuperscript{141} This implies viewing the claims as equally probable as not. The probability of a plaintiff’s claims, $H$, and the probability of their negation, $\neg H$, should both begin at 0.5.\textsuperscript{142} This instruction to juries conforms to the “principle of insufficient reason” (also called the “indifference principle”) in probability theory, which holds that when there is no evidence to favor either $H$ or $\neg H$, both should be assigned a probability of 0.5.\textsuperscript{143} Jurors at the start of trial have no case-specific information to offset those generalizations that may hold unusual events to be improbable. But cases that go to trial have been prescreened for plausibility by judges who have determined that there is evidence sufficient to support the claims are true. Whatever criticisms might be made of the indifference principle in philosophical contexts, it seems particularly well suited to the starting point for jury inquiry.\textsuperscript{144}

If the prior probability of any unevidenced fact is 0.5, then disbelieved testimony cannot raise that probability. The testimony of a disbelieved witness is unreliable, which can be expressed logically with the assertion that $\Pr(E|H) = \Pr(E|\neg H)$: the probability of getting “bad brakes” testimony “$E$” is no greater if $H$ is true (the brakes are indeed bad) than if $H$ is false (the brakes are okay). But if $\Pr(E|H) = \Pr(E|\neg H)$, then $\Pr(H|E) = 0.5 = \Pr(H)$, the probability of the brakes’ being bad given the mechanic’s (unreliable) testimony remains unchanged from its prior probability of 0.5. Unreliable testimony is irrelevant where the prior probability is 0.5.\textsuperscript{145}

\textsuperscript{141} See, e.g., Judicial Council of California Civil Jury Instructions, supra note 132, § 100, at 2 (“The parties have a right to a jury that is selected fairly, that comes to the case without bias, and that will attempt to reach a verdict based on the evidence presented.”).

\textsuperscript{142} It is axiomatic that for any proposition $H$, the probabilities of $H$ and $\neg H$ add up to one. See, e.g., Sober, supra note 133, at 10.

\textsuperscript{143} Hacking, supra note 113, at 143. More generally, the indifference principle holds that in the absence of evidence to favor any of $n$ mutually exclusive, jointly exhaustive propositions, the probability assigned to each should be $1/n$. Id. Propositions that are mutually exclusive cannot be true at the same time. Propositions that are jointly exhaustive cover all possible events. See id. at 70. By definition, $H$ and $\neg H$ are mutually exclusive and jointly exhaustive. “$\neg H$” includes all possible propositions whose truth excludes the truth of $H$.

\textsuperscript{144} See Sober, supra note 133, at 27 (noting that “it is rare for contemporary Bayesians to have anything good to say about” the indifference principle). The main criticism of the indifference principle among probability theorists is that “there are multiple ways to slice the logical space into parts,” meaning that the prior probability of $1/n$ can be manipulated by arbitrarily creating more or fewer possible outcomes, thereby increasing or decreasing $n$. See id. This objection poses less of a problem—arguably none at all—in a trial setting which simply fixes $n$ at two: the plaintiff/prosecutor’s version and its negation.

\textsuperscript{145} The proof of this equivalence is based on Bayes’ Theorem, which can be expressed as

\[
\Pr(H|E) = \frac{\Pr(E|H)\Pr(H)}{\Pr(E|H)\Pr(H) + \Pr(E|\neg H)\Pr(\neg H)}.
\]

See Hacking, supra note 113, at 70. If, as argued above, the prior probability of any unevidenced fact is 0.5, then $\Pr(H) = 0.5 = \Pr(\neg H)$, since $\Pr(H) + \Pr(\neg H)$ necessarily equals 1. $\Pr(H)$ and $\Pr(\neg H)$ thus multiply out of the equation. Since unreliable testimony means $\Pr(E|H) = \Pr(E|\neg H)$, we are left with
Evidence that some material factual proposition is “possible though improbable” is only relevant if the prior probability was “virtually impossible.” That violates the indifference principle and the jury instruction against predisposition. Even more fine-grained distinctions fail to escape this net. Evidence that a relevant proposition is “plausible” is informative to a jury whose prior belief was that the proposition was implausible or far-fetched. Evidence that the probability of a proposition is 0.4 might be relevant where the prior probability was 0.3, but again, that’s not the starting point.

To return to the example of Allen’s mechanic, suppose H is the proposition “the defendant had notice of the brake defect” and E is evidence that “there is a 0.4 probability that the mechanic told the defendant her brakes were bad.” Assume that the mechanic’s statement, if made and heard, are equivalent to notice. Here \( Pr(H|E) \leq 0.4 \) and therefore irrelevant. As a logical matter, evidence that on its face conveys an assessment of its own probability cannot confer on another fact a probability greater than itself. This implies that to be relevant—to make \( Pr(H|E) > 0.5 \) (the prior probability of H)—evidence must necessarily convey a probability of its own truth > 0.5.

### III. Foundation Theory Defended

Various objections to the foundation theory may have occurred to readers up to this point. At least some of these have been expressly or impliedly advanced by the arguments of conditional relevance critics summarized in section I.D. Most of the objections either assume or boil down to a fundamental point: that “plausible but improbable” evidence can make a fact of consequence more probable and therefore be relevant. Questions might arise about the application of foundation theory to civil and criminal defendants in general, and to evidence offered to diminish the probability of opposing evidence in particular. Concerns might also arise that the foundation theory would actually heighten the bar for admissibility of evidence. Finally, I will consider practical implications of the theory.

#### A. Is Improbable Evidence Relevant in Connection with “Other Evidence”?

It is frequently argued that improbable evidence can raise the probability of a fact of consequence “in combination with” other evidence. Nance, for ex-

\[
Pr(H|E) = \frac{Pr(E|H)}{Pr(E|H) + Pr(E|\neg H)} = 0.5 = Pr(H).
\]

See Sober, supra note 133, at 15. The unusual case of backfiring testimony, see supra note 126, is expressed by \( Pr(E|H) < Pr(E|\neg H) \), which would result in \( Pr(H|E) < 0.5 \) under Bayes’ Theorem. Obviously, in such a case, the testimony E fails to make H more probable.

146. According to the “principal principle,” \( Pr(H|Pr(H)=X) = X \). See Peter Achinstein, The Book of Evidence 62–63 (2001). Here, the probability of notice given evidence that “the probability of notice is 0.4” equals 0.4.

147. See, e.g., Nance, supra note 1, at 450–51; Friedman, supra note 66, at 448 (describing “disjunctive reasoning”).
ample, writes:

Of course, one must evaluate the likelihood that it was heard, but even if, from all the evidence presented, there is only a small probability that X heard the spoken statement, it is still some evidence of notice that, together with the other evidence, may warrant a finding of notice. This follows directly from the liberally inclusive concept of relevance . . . .

Suppose, for example, there were a hundred such utterances, independently made. The trier of fact might reasonably conclude that it is unlikely that X heard any particular utterance and yet also reasonably conclude that it is very likely that X heard at least one of them. More realistically, and more generally, there could be evidence of a variety of events, different in nature and weakly probative taken severally, that taken in combination make the existence of notice very likely but do not make it likely that the particular utterance was heard. 148

But this argument is potentially misleading and needs to be unpacked. To begin with, the argument abandons the claim that improbable evidence can be viewed as relevant under FRE 401 when viewed in isolation. Yet, as demonstrated above, well-founded evidence can meet the FRE 401 requirement without taking into account the synergistic effect of other evidence in the case. On further examination, it will be seen that improbable evidence can formally be relevant in conjunction with other evidence only in the particular, exceptional circumstance of burden shifting. In all other respects, the superficial impression that improbable evidence is relevant can be dispelled. Either the evidence in question has been determined probable by the jury in a revision of its initial probability assessment, or it has been recognized as logically irrelevant.

1. Revised Probability Assessments

The intuitive appeal of finding relevance in plausible–improbable evidence is, in large part, illusory and misleading. In reality, it depends on the notion of a probabilistic “upside,” by which evidence initially deemed improbable is open to reevaluation. A juror may initially be skeptical of a witness’s testimony but simply change his mind. Evidence that might have seemed improbable when first introduced may become more probable than not when viewed in conjunction with corroborating or interlocking evidence. A juror may find the motive offered in a murder case—the defendant wanted to collect on the victim’s life insurance policy—to be improbable when first presented, but perhaps reevaluate that in light of fairly compelling circumstantial evidence connecting the defendant to the murder weapon and the crime scene. A bank teller whose identification testimony is initially viewed with disbelief may be corroborated by a compellingly clear surveillance video showing the robber. The key point is

148. Nance, supra note 1, at 450–51 (emphasis omitted).
this: a fact-finder who adjusts the probability of evidence from his initial impression of “40% probability” or “plausible–improbable” to 50% or probably true has “found” the evidence to be probable. In other instances, an item of evidence remains doubted at the end of trial and is disregarded in favor of more probative evidence on the same point. A jury may conclude that an eyewitness claiming to have seen and identified the robber is unconvincing but convict anyway based on fingerprint and other circumstantial evidence. The idea that plausible–improbable or “believable but ultimately disbelieved” evidence makes a fact of consequence more likely by identifying possibilities and holding the door ajar for more probative evidence is a merely question-begging argument. These types of reasoning processes are manifestly not a demonstration that plausible–improbable evidence can make a fact of consequence more probable.

2. Burden Shifting

In certain situations, the law allows the claiming party to shift the burden of production onto the defending party. Some burden-shifting doctrines include res ipsa loquitur, and the improbably law-schoolish case of *Summers v. Tice*, in which the plaintiff was injured by a gunshot that was known to have come from either of two shooters who fired simultaneously. In these instances, proof of the ultimate fact of a claim can be made by showing that certain elements—injury and causation—are probable; and when this standard is met, the burden of proof shifts to fill in missing details about the specific causal mechanism or agent. With market-share liability and *Summers*, for example, liability is apportioned among all possible tortfeasors who cannot disprove their liability.

A similar burden shift may occur informally at a more granular level of detail. Professor Friedman posits two forms of notice—a newspaper announcement and a television broadcast—and argues that each form of notice may be less

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149. This is the fallacy in Tillers’s argument that a jury may believe one or more “lying witnesses” by the time the twentieth witness testifies to the same account. 1 W. WIGMORE, supra note 2, § 14.1, at 719. Tillers argues that each witness’s improbably testimony must be relevant, because the cumulative effect of the twenty witnesses’ improbable testimony is to establish the probable truth. So each unit of improbable testimony is relevant because it contributes to the overall finding. But Tillers’s argument fails: his example does not show that probably-false testimony can be added until it is true, but only that corroboration can cause a fact-finder to reassess and revise her earlier skepticism about the testimony.


152. 199 P.2d 1, 4–5 (Cal. 1948) (en banc). The conundrum is posed by the interplay between the notion of causation in fact and the preponderance standard of proof. Although it was 100% certain that one of the two shooters caused the injury, by sheer mathematic logic the plaintiff would be unable to prove that either was “more likely than not” to have done so—but both were at 50%. The court held that the burden shifted to each defendant to prove that the other was the culprit. *Id.* at 5. Significantly, from the plaintiff’s perspective, the story could be told as a single (albeit strange) liability narrative involving two possible shooters who, conjointly, probably wounded him—and were thus jointly and severally liable.
than 50% probable, but the two together may make it more likely than not that some notice got through; we just do not know which one. 153 Nance’s “hundred utterances” example is based on the same logic. 154 These arguments rely on the addition rule for disjunction, which holds that $Pr(A \text{ or } B) = Pr(A) + Pr(B)$ where $A$ and $B$ are mutually exclusive, and that $Pr(A \text{ or } B) = Pr(A) + Pr(B) - Pr(A \& B)$ where $A$ and $B$ can both occur. 155 It is easy to see that the sum total of either formula can be $> 0.5$ even when $A$ and $B$ each have values $\leq 0.5$. 156

These examples neither demonstrate that improbable evidence can make a fact of consequence more probable, nor that the foundation theory is wrong. They are simply a qualification of the foundation requirement in the unusual case where certain conditions are met. Claimants can base claims on plausible possibilities where three conditions are met: (1) the defendant’s access to the relevant proof is equal to or greater than that of the plaintiff; (2) the disjunctive possibilities (for example, the possible causal agents) must be specified; and (3) the sum total of the disjunctive evidence must reach the threshold of evidence sufficient to support a finding. There may be situations other than those described in the text where an ad hoc burden shift on a particular fact is justified. This de facto shifting of the burden of proof is more accurately understood as a policy-based relaxation of the detail requirement and is at most a marginal exception to the standard foundation requirement.

None of the foregoing are generalizable examples of improbable evidence making a fact of consequence more likely.

3. Alternative Claims and Moving Targets

The illustrations of the foundation theory have been based on idealized “Hohfeldian” litigation with one plaintiff making one claim against one defendant. 157 But plaintiffs’ ability to make multiple and alternative claims does not change the analysis. If the claims offer alternative legal theories for a single “transaction or occurrence,” 158 the plaintiff remains committed to a singular, true narrative even if some different facts are required to trigger entitlement to alternative remedies.

But some alternative legal theories may require inconsistent factual assertions. For example, a plaintiff in a police excessive-force case might proceed to trial on the theory that the police officer intentionally, or in the alternative,

153. See Friedman, supra note 66, at 448.
154. See Nance, supra note 1, at 451.
156. See Friedman, supra note 66, at 448 n.30.
158. See Fed. R. Civ. P. 20; see also id. 15(c)(1)(B), 18, 19. Difficulties in defining a “transaction or occurrence” reflect the difficulties in drawing clear lines around facts. A complex case involving more than one transaction or occurrence likewise may involve more than one liability narrative.
negligently used unreasonable force. A contract plaintiff might claim breach, or in the alternative, promissory fraud (that the defendant never intended to fulfill the bargain). Both examples involve cases where the outward conduct and harm is the same in both causes of action, and the alternative claims result from differing mental states with which the defendant may have acted. Although there are undoubtedly examples in which alternative legal claims are generated by facts other than intent, the key point is that the legal system accommodates a certain degree of factual uncertainty: truth is somewhat inaccessible even to the claiming party, particularly where the facts are “in the possession” of the other party (the other party’s mental states, its own records, information held by its own employees, and the like). Claiming parties are allowed to proceed with some modicum of uncertainty in their narratives, and within that confined space may speculate or offer alternate versions. This allowance is analogous to a de facto shift in the burden of production. What is really going on is that the narrative to which the claimant has committed himself gives rise to alternate favorable inferences or interpretations. The requirement of a single true narrative is to some extent an ideal, but it is also fair to say that the bulk of the claiming party’s narrative must meet this requirement.\(^{159}\) Moreover, the jury findings must meet the “probably true” threshold based on well-founded evidence.

Similarly, there will be cases where a party’s theory of the case changes during trial to “conform to proof.” A plaintiff’s case will not necessarily be dismissed merely because his closing argument does not match his opening statement. And some trial lawyers may get away with a considerable amount of presentational sloppiness—presenting an incoherent narrative that avoids judgment as a matter of law and somehow produces a successful verdict. Indeed, there are instances, perhaps many, where the lawyers misidentify the key facts and inferences in their own cases. Perhaps in such cases, the claimant may still (deservedly) win because the jury does the lawyer’s work and identifies a specific, probably true version of events supporting the claim; or perhaps not. But none of these examples of moving targets calls the foundation theory into question. Slippage or sloppiness in the obligation to present specific, probably true claims is a question of how strictly the principle is enforced, not an argument against its existence.

4. Res Gestae and Technical Irrelevance

There is another, more common situation in which jurors are permitted to speculate, and therefore parties may offer evidence in the form of *maybes* and *might haves*. Under the doctrine of res gestae, courts sometimes allow parties to fill narrative gaps in order to head off potential jury frustration over incomplete

\(^{159}\) See supra section II.B.1.
narratives. Typically, res gestae “evidence,” which is uniformly understood as “technically irrelevant,” comes in the form of background detail. In People v. Johnson, discussed in section II.C.1, the fight between Johnson and the guards occurred when the guards went to retrieve a lunch tray that Johnson had refused to hand over. His reasons for refusing to hand over the tray—a protest that the prison was delaying delivery of some mail belonging to him—were irrelevant to the question of whether Johnson or the guards initiated the fight that occurred once they entered his cell. But courts typically allow some latitude to parties to provide technically irrelevant background matter to place the case in a richer narrative setting to satisfy the jurors’ curiosity and head off speculation about matters of context.

In some subset of res gestae situations, the offered fact might reflect less-than-probable truth. Lawyers occasionally deal with unknown facts by some version of the statement, “We may never know exactly what happened.” For instance, a prosecutor might argue “We will never know exactly why the defendant killed the victim.” Such assertions demonstrate that the fact in question is excluded from—or perhaps more accurately, bypassed by—the theory of the case. Courts may give latitude toward narrative details that are not necessary parts of the theory of the case and therefore not facts of consequence. This is hardly a demonstration that improbable evidence is relevant, or that it makes a fact of consequence more probable.

Finally, evidence may be technically irrelevant in a very different—but far more common—sense. It is not the case that a winning plaintiff (or prosecutor) must have every witness or every offered item of evidence deemed probably true in order to win the case. The system leaves room for the jury to tweak the narrative presented to it. The finding of “A” ultimately requires persuasion only on the facts that make up the theory of the case: the facts of consequence and the supporting detail that the jury deems necessary to sustain that liability- or guilt-narrative. Some narrative detail may be redundant or unnecessary to the jury, even if the offering party believed it to be essential to the narrative. So the single, probably true narrative is one that consists of all the details needed to sustain the narrative that encompasses all the facts of consequence.

B. THE CONDITIONAL RELEVANCE CRITIQUE REFUTED

The critique of conditional relevance is a fundamental attack on the foundation principle. Conditional relevance critics assert that the relevance of an item of offered evidence never logically depends on the probable truth of another fact. If that is so, there can be no foundation requirement. The conditional relevance rule in FRE 104(b) is in essence a statement of the doctrine of logical consequence. As demonstrated above, in section II.C, the relevance of an

160. See, e.g., Allen, Kuhns & Swift, supra note 1, at 149; cf. Old Chief v. United States, 519 U.S. 172, 188–89 (1997) (noting the importance of meeting the narrative expectations of jurors).
161. See supra note 120 and accompanying text.
offered item of evidence only depends on a “condition of fact” within the meaning of that rule when the foundation for the offered item of evidence, be it testimony or exhibit, is incomplete. There is some fact entailed in the complete foundation that has not been supported with case-specific evidence. Because a complete foundation must be probably true, all entailed facts—the “fact conditions” identified in FRE 104(b)—must be probably true under the axiom of logical consequence. Hence, FRE 104(b) requires all such fact conditions to be established with evidence sufficient to support such a finding.

The conditional relevance critique makes two overarching, fundamental errors: a general tendency to confuse foundation, relevance, and probative value; and a failure to come to grips with the basic “evidence sufficient to support a finding” structures that bracket FRE 104(b): the foundation requirement for exhibits and the burden of production requirement for claims. Not only does relevance depend on the truth of the “evidence” whose relevance is under consideration, but it also depends on the existence of a theory of the case, the narrative entailing all “facts of consequence” necessary to the probable truth of the party’s claim. Ball’s analysis, which spawned this line of scholarship, is deeply flawed, and the attempts of other conditional relevance critics to prove their point anecdotally with hypotheticals are unsuccessful.

1. Ball’s Mistake

According to Ball, if two facts (A and B) must both be proven in order to find a third fact (C), evidence tending to prove A will always be relevant as long as the probability of B is not zero.162 Taking Ball’s example,163 if the finding of a valid contract (C) requires proof of “offer and acceptance” (A) and authority to contract (B), then evidence making offer/acceptance more likely also makes contract more likely so long as the probability of authority is not zero.164 This is meant to be a “proof” that any nonzero probability of B will sustain the relevance of “E” (evidence making A more probable).

To be sure, because the probability of C will be at least in part a product of multiplying the probabilities of A and B, increasing the value of A necessarily increases the value of A times B, and therefore increases the value of C. But this is a very confused setup for a problem purporting to test the existence of conditional relevance, and it ultimately fails to make Ball’s point.

In Ball’s example, A and B happen to be facts of consequence. Therefore, evidence making either more likely is relevant by definition. This is not a conditional relevance question, but rather a tautological assertion that evidence making a fact of consequence (A) more likely is relevant (irrespective of the

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162. See Ball, supra note 19, at 450.
163. See id. at 440. Ball’s example is derived from Morgan, supra note 40.
164. See Ball, supra note 19, at 450 (referring to evidence that “increases the probability of the offer and acceptance by a factor of x”). I am simplifying, and also clarifying, the point that Ball makes in over ten somewhat abstruse pages, by reducing it to its essentials.
likelihood of another fact of consequence, (B)). Allen and Nance note this problem and purport to fix it by offering examples where facts A and B are “intermediate factual propositions” rather than facts of consequence.\footnote{See Allen, supra note 72, at 875–76; Nance, supra note 1, at 451 & n.15.}

But the problem with Ball’s analysis really goes well beyond that. Let’s suppose A and B are not facts of consequence. Ball’s example at a minimum supposes they are both items of relevant evidence and, further, that their relevance depends on each other. But if A is relevant, which Ball takes as given, then evidence “E” tending to make A more probable is also relevant—by definition. Evidence raising the probability of relevant evidence is always itself relevant; not a tautology, perhaps, but not a breath-stopping insight either, and certainly not an argument about conditional relevance.\footnote{Ball’s argument can be expressed formulaically as follows. He assumes evidence “E” that makes A (offer and acceptance) more probable. That is, \( \Pr(A|E) > \Pr(A) \). Given that assumption, Ball argues, it follows that \( \Pr(A|E) \cdot \Pr(B) > \Pr(A) \cdot \Pr(B) \), where \( \Pr(B) \neq 0 \).}

Ball’s analysis comes apart when we recall that the focal point in the example is not “E” (evidence raising the probability of A), but B (a fact condition on whose fulfillment the relevance of A depends). The conditional relevance question is not whether this third item of evidence “E” is relevant. Instead, it is whether A can be relevant (\( \text{raise the probability of } C \)) without sufficient grounds to believe that B is probably true. More specifically, the question is whether a probability of B that is less than 50% can sustain the logical relevance of A. In Ball’s particular fact pattern, can “offer and acceptance” be relevant to the defendant’s making of a contract when the defendant probably did not authorize the purported agent? Ball never attempts to answer this question. By focusing on a third item of evidence “E” that is assumed to be relevant, Ball addresses a tangential question and, moreover, begs it.

2. Ignoring Theory of the Case

Relevance is conditional on probably true facts at both ends of the relevance chain. At the start of the chain, relevance requires “evidence,” which must be probably true under the foundation principle. At the end of the chain, relevance depends on a fact of consequence—a “fact condition” to whose probable truth the claiming party has made a commitment. Conditional relevance critics also err by failing to acknowledge the dependence of relevance arguments on the probably true facts that constitute the claiming party’s theory of the case.

Professor Allen analyzes several examples to support his claim to be able to recharacterize any conditional relevance issue as a “pure” (that is, FRE 401) relevance issue and vice versa, from which he concludes that “[t]he concepts are identical.”\footnote{Suppose, Allen says, that the defendant driver in the mechanic vignette “wished to testify that he believed the mechanic was joking.” Allen asserts that that testimony “would be ‘conditionally relevant’ upon the reason}\footnote{Allen, supra note 72, at 879.\footnote{Id.}}
why he believed the message was a joke, but I suggest that all judges would admit the testimony whether he was questioned about his reasons or not.”169 But this example only appears to support Allen’s argument insofar as we do not know the applicable substantive law that would dictate the factual theory of the case. If a defendant’s purely subjective belief about the “seriousness” of notice is a fact of consequence under the substantive law, then the defendant’s assertion “I believed he was joking” is not conditionally relevant on the reasons for the belief; testimony about having good reasons for the belief might make the testimony about the belief more persuasive or credible, but would not make or break relevance. On the other hand, if subjective belief is not a fact of consequence in a notice case, and notice instead depends on objective reasonableness, then the defendant’s belief that the mechanic was joking would indeed be conditionally relevant on the facts suggesting that the mechanic’s statement was not objectively notice-giving.170

The evidence of the statement in Allen’s mechanic vignette is conditionally relevant on other facts in the theory of the case as well. Evidence that the mechanic yelled to the customer, “Your brakes are bad,” will be conditionally relevant on evidence sufficient to support a finding that a defect in the car—in particular, one that would have turned up on inquiry notice—contributed to the accident. If instead, plaintiff’s theory of the case is that the defendant caused the accident because she was “texting” on her cell phone rather than paying attention, and plaintiff offers no other evidence about the condition of defendant’s car, then the evidence of the mechanic’s statement is irrelevant, at least if offered to show notice.171 This and Allen’s other examples of morphing of relevance into conditional relevance depend on ignoring the requirement that parties commit themselves to a theory of the case—the very same requirement of a “well-specified case” Allen persuasively argues for elsewhere.172

The theory of the case is not a completely malleable narrative that parties can...

169. Id.

170. To the extent that “all judges would admit the testimony” without the underlying reasons—debatable, but let us assume it for the sake of argument—it would be on the assumption that an opinion, if believed, is by its nature rationally derived from underlying facts or “reasons” which need not always be made explicit. Such a ruling would simply be an application of the lay opinion rule. But any lay opinion is conditionally relevant on the witness’s having firsthand knowledge of the subsidiary facts on which the opinion is “rationally based.” See supra section I.B. Perhaps a judge would allow the witness to omit details such as “he had an ironic tone in his voice and chuckled slightly,” or whatever perceptions led to the impression of a joke. Allen mistakes the omission of specific details of the foundation for its nonexistence.

171. It might be relevant, albeit inadmissible under FRE 404, if offered to show a character trait for carelessness about cars. See Fed. R. Evid. 404(a) (generally prohibiting the admission of character evidence).

172. See supra section II.B.1. Allen also fails to see that conditional relevance rulings involve a judge requiring specific evidence in place of unsatisfactory generalizations. As another example of purported interchangeability, Allen considers evidence that the defendant, accused of murder by bombing, purchased chemical X. The testimony is relevant without further evidence if the judge believes that jurors know X to have explosive properties, but becomes “conditionally relevant” if the judge believes they do not. See Allen, supra note 72, at 879. This is not an example of interchangeabili-
change at will to accommodate any conceivable relevance theory that may seem 
convenient at the moment the evidence is offered. By committing to a specific 
narrative of how the litigated events actually happened, the party in effect 
commits himself to a limited set of relevance arguments—often just one—for 
any given item of evidence.173

3. Confusing Foundation, Relevance, and Probative Value

Every offered item of evidence has two characteristics: (1) its own probabil-
ity of truth and (2) the extent to which it has an effect on other evidence. The 
effect on other evidence itself has a double-aspect: it can contribute to the 
foundation of another fact (raising the probability of truth of that fact) while at 
the same time creating synergistic probative value that raises the probability of 
a fact of consequence. The first characteristic is foundation, and the second 
comprises relevance and probative value. Foundation deals with the probability 
that an evidentiary fact assertion is true, and the rule of foundation requires that 
evidentiary fact assertions be probably true. Probative value and relevance deal 
with the degree of change in \( \Delta \) probability of another fact, specifically a fact 
of consequence. In other words, foundation is a question of \( probability \), and 
relevance/probative value a question of “\( \Delta \) probability.”

A tendency to confuse these concepts underlies much of the attack on 
conditional relevance. Ball, for example, asserts that a nonzero probability of 
truth of evidence “\( B \)” means that \( B \) is admissible under the FRE 401 any 
tendency standard;174 he thus confuses the probability of \( B \) with the \( \Delta \) proba-
bility that makes \( B \) relevant. All of the conditional relevance critics confuse 
foundation and probative value when they assert that the “evidence sufficient to 
support a finding” standard for foundation is a “higher threshold” than the FRE 
401 “any tendency” standard for relevance. This is like saying “warmth” is a 
higher standard than “warmer.” The comparison makes no sense because the 
two scales—“total probability” and “\( \Delta \) probability”—are not commensurable. 
Yet conditional relevance criticism tends to treat the two as interchangeable—as 
though a 10% probability that the defendant received notice from publication in 
an obscure newspaper was the same thing as a 10% increase in the probability 
that notice occurred.175 That can only be true if the prior probability is zero,

173. Friedman makes the same mistake. Rather than seeing “predicate” or “intermediate” fact 
propositions as specific fact assertions preselected by the party in creating its chosen theory of the case, 
he contends that such factual propositions always raise “a disjunction of various evidentiary possibili-
ties that would support the probative value of the proffered evidence.” Friedman, supra note 66, at 469. 
175. Nance makes this error in arguing the relevance of his paradoxical murder witness: “As long as 
we are not certain that she is either making it up or basing it on completely unreliable hearsay, or a 
combination of the two, we should conclude that it is more likely [than without the testimony] that 
defendant committed the crime given the testimony than it would be without the testimony.” Nance, 
supra note 1, at 489.
which as argued above, is an unjustifiable assumption. When one moves away from cardinal numbers to concepts, the confusion is somewhat more understandable. One item of evidence can affect both the probable truth and the probative value of another item of evidence at the same time. Evidence that the defendant had access to the type of gun used in the killing can be seen to make it more likely that he had the claimed motive (that is, that the motive is probably true) and also to increase the strength (probative value) of the motive evidence as an element of the narrative. But Ball, for example, does not seem to try to distinguish between these two effects when he observes that “all offered evidence is conditionally relevant.” 176

4. The Problems of Authentication and Judgment as a Matter of Law

Conditional relevance critics have been logically inconsistent in attacking the “evidence sufficient to support a finding” concept of FRE 104(b) while accepting that same logical structure in one or both of the two closely-related rules, the authentication requirement for exhibits and the standard for judgment as a matter of law. Acceptance of an “evidence sufficient to support a finding” requirement for exhibit foundations is irreconcilable with rejection of the same requirement under FRE 104(b). The principle of authentication tells us that, for example, a plaintiff offering a letter purporting to contain a damning admission by the defendant must authenticate the letter by evidence sufficient to support a finding that the defendant wrote it; the basis for this requirement is that the letter is otherwise not what the proponent claims it is (a letter written by the defendant) and is therefore irrelevant. How can that be “transmuted” into a case of “pure” relevance? Evidence that the letter was written with a Cross pen and that the defendant had a Cross pen of the same color is “relevant” in that it increases the likelihood that defendant wrote the letter, but it will not suffice to authenticate the letter. We are obviously talking about something different from pure relevance, something that looks a lot like conditional relevance, and yet something that conditional relevance critics appear to find unproblematic.

Among conditional relevance critics, Ball acknowledges the question only to wave it away without any sort of justification: “[T]he [authentication] requirement is imposed in addition to relevancy and is not a precondition for relevancy.” 177 He explains neither how unauthenticated exhibits might be relevant, nor why there might be a “sufficiency” requirement imposed on otherwise relevant evidence 178—presumably, it’s just a common law artifact. Allen fails to address the question of authentication at all. 179 Nance and Friedman, for their part, both see the inconsistency of attacking conditional relevance without

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176. Ball, supra note 19, at 460.  
177. See id. at 451.  
178. “The authentication and identification requirements when analyzed are not matters on which relevancy depends, but requirements for sufficiency findings in addition to relevancy.” Id. at 467–68.  
179. See generally Allen, supra note 72.
addressing specific foundation issues; they deal with this conceptual inconsistency by legislating it away, proposing in different ways to eliminate “evidence sufficient to support a finding” as a test for the admissibility of any evidence.180

More subtle, but equally undermining to the conditional relevance critique, is the question of judgment as a matter of law. How are facts of consequence qualitatively different from other evidentiary facts such that they must be believable (substantiated by evidence sufficient to support a finding) in order to affect the outcome of the case while other facts—“lower order” facts, “intermediate factual propositions,” or whatever—can rationally influence the jury’s decision making without being believed true? To be sure, facts of consequence are those facts which the law says must be present in the particular guilt- or liability-narrative in order to sustain a judgment. Because those facts must be present to satisfy the substantive law, the jury is instructed to make findings about them.

Although the requirement to make “findings” might be the starting point of a theoretical explanation of why ultimate facts, but not other facts, need to be believable, it is not self-evidently a complete or satisfying explanation. Ultimate facts are simply the ones included in the substantive law’s “checklist” of what must be present in the guilt- or liability-narrative to prove a claim. But the claim principle requires presentation of a liability narrative that is considerably more detailed than the small set of required ultimate facts. “Ultimate” and more detailed facts are therefore both required, and the only difference is that the more detailed facts are not specified by legal rules: the substantive law permits those to vary from case to case. The requirement of probably true facts making up a theory of the case undermines the contention that relevance never depends on the probable truth of another fact. None of the conditional relevance critics address this difficulty.181

5. The Problem of “Findings”

Conditional relevance critics point to the burden or even absurdity of Rule 104(b)’s purported “requirement” that the jury make “findings” on conditional relevance issues (presumably, including foundation issues).182 This might well

180. See Friedman, supra note 66, at 475–77; Nance, supra note 72, at 440, 451.
181. Nance and Allen discuss facts of consequence in a way that makes clear that they do not question the requirement of “evidence sufficient to support a finding” as to those. See Allen, supra note 72, at 873; Nance, supra note 1, at 454. Ball seems oblivious to the problem.
182. See Allen, supra note 72, at 880 (“Unfortunately, the consequences of the analytical error underlying the idea of conditional relevancy have not been simply benignly academic.”); Friedman, supra note 66, at 447 (arguing that evidence sufficient to support a finding requirement “imposes an artificial, and potentially harmful, restriction on the fact-finding process”).

Ball, in particular, reads FRE 104(b) as a significant threat to the trial system. Because conditional relevance supposedly offers a screening opportunity for the judge that is more rigorous than the “any tendency” standard of logical relevance under FRE 401, the ubiquity of conditional relevance issues creates, in his view, undue opportunities for judges to exclude relevant evidence and screw up trials. Imagining a host of complex conditional relevance jury instructions that would require jurors to make
be burdensome, but for the fact that it is not a requirement of Rule 104(b). The only determination to be made, if any, is by the judge as a screener: is there evidence sufficient to support a finding (by a reasonable jury) on the point. The finding is purely hypothetical.\footnote{See Nance, supra note 1, at 451 (“The point is simply that the trier must make a finding, by the appropriate standard of proof, only as to the ultimate propositions in the case, not as to intermediate evidentiary propositions contained within inferential chains.”); supra notes 36–37 and accompanying text.} It is no different from the credibility “finding” juries are imputed to make about every witness who testifies. But the jury is not required, or understood, to make actual findings of credibility, as though on a special verdict form, and the same is true of conditional relevance or foundation “findings.” They are a logical construct: if a reasonable jury could not find the conditional evidence relevant, the judge is authorized to exclude it.

There is an additional respect in which the problem of conditional relevance “findings” is overblown. Conditional relevance—or more broadly, foundation—is like dust. It is ubiquitous, but one notices it only when it becomes a “problem.” In fact, conditional relevance and foundation, although they inhere in every item of evidence, are only rarely a problem: an arguable objection based on conditional relevance rarely arises. The fact conditions needed to establish the relevance of most evidence are either self-contained in the proffer of evidence, are satisfied by ordinary or simple foundations, or are already established (or are to be established) through connecting up.

The Advisory Committee’s example of “evidence in a murder case that [the] accused on the day before [the killing] purchased a weapon of the kind used in the killing,”\footnote{FED. R. EVID. 104(b) advisory committee’s note.} presumes that there is, or will be, a linkup to evidence of the kind of weapon used in the killing. If that evidence is on the exhibit list, a conditional relevance objection (“we don’t know what weapon was used in the killing”) would be pointless. The testimony of Allen’s mechanic will obviate any conditional relevance objection that the defendant is not shown to have probably heard the statement with a very simple direct examination:

Q: What happened next?
A: X was right across the desk from me and I looked at her and told her, “Your brakes are bad.”

This brief snippet of testimony provides evidence sufficient to support a finding that the statement was made, and that X heard it. The jury is not compelled to
countless findings of “intermediate” facts, Ball concludes: “The serious effort to put a jury through these gymnastics as to every witness’s testimony, every thing admitted as an exhibit, and nearly all inferences from circumstances seems to me staggering in its possibilities for misunderstanding, mistake, and mistrial.” Ball, supra note 19, at 458. It is safe to say that no such crushing burden of conditional relevance instructions and intermediate factual findings by juries has, in fact, materialized. Of course, the Federal Rules of Evidence had been in effect only a few years when Ball wrote his article, so perhaps he can be forgiven for playing Cassandra.
make that finding, of course—there may be evidence to suggest that a loud banging noise from the garage drowned the statement out, or the jury may simply disbelieve the mechanic—but a judge would have to allow the issue to go to the jury. The self-evident fulfillment of 104(b)-type fact conditions through details attending the presentation of the conditionally relevant evidence is extremely common, making arguable 104(b) objections the exception rather than the rule.

Foundation objections to exhibits at trial are becoming less usual in practice as more courts adopt the practices of encouraging or requiring such objections to be resolved in pretrial conference, while also discouraging pro forma foundation objections designed only to put the opposing counsel through her paces. Where the authenticity of a document is both disputed and a fact of consequence, evidence sufficient to support a finding of authenticity is likely to have been established before trial in a summary judgment motion, and a conditional relevance objection at trial would give way to a motion for JMOL after the close of the offering party’s case.

C. OTHER POTENTIAL OBJECTIONS TO THE FOUNDATION THEORY

The main objections to the foundation theory of evidence revolve around the claim that plausible-but-improbable evidence can be logically relevant. Here, I stop to consider four other objections. Three are based on arguments that the foundation theory is contradicted by rules relating to burdens of proof. The fourth is a policy-based concern that the foundation theory would undermine the regime of liberal admissibility implied by the low “any tendency” threshold for relevance.

1. Does the Foundation Theory Break Down in Criminal Cases?

It might be objected that the foundation theory breaks down in criminal cases. The elements of the criminal charge must be proven beyond a reasonable doubt. According to my “single-fact theory,” it would follow that a guilty verdict could only be obtained if every fact necessary to the narrative were also true beyond a reasonable doubt. To be sure, the principle of entailment dictates as much. If, as I argue, foundation is inextricably linked with the burden of proof through the claim principle, would that not suggest that foundation for offered evidence

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185. Fed. R. Civ. P. 16(c)(2)(C) (encouraging use of pretrial conferences to obtain “admissions and stipulations about facts and documents to avoid unnecessary proof, and rule[e] in advance on the admissibility of evidence”); N.D. Cal. Civ. R. 16-10(b)(11), (12) (requiring pretrial resolution of “objections to proposed testimony and exhibits”); United States v. Walker, 9 F.3d 1245, 1249–50 (7th Cir. 1993) (“At the pretrial conference, the judge asked defense counsel to consider entering into stipulations as to undisputed questions involving the foundation and authenticity of documentary evidence.” (emphasis omitted)); see also Standards for Professional Conduct Within the Seventh Federal Judicial Circuit 9 (1996), available at http://www.ca7.uscourts.gov/_rules/rules.htm#standards (“In civil actions, we will stipulate to relevant matters if they are undisputed and if no good faith advocacy basis exists for not stipulating.”).
must likewise meet the “beyond a reasonable doubt” standard? In other words, doesn’t the foundation theory imply that a judge in a criminal case must exclude any evidence offered by the prosecution unless a reasonable jury could find that evidence true beyond a reasonable doubt?

In theory, a judge could apply “beyond a reasonable doubt” as the sufficiency standard for foundation in criminal cases. Plainly, however, that is inconsistent with the law. The Supreme Court has made abundantly clear that evidence is admitted in criminal cases, as in civil cases, subject to evidence sufficient to support a finding that it is (merely) probably true.\textsuperscript{186} Does that undermine the foundation theory?

No. There is nothing contradictory about saying that the jury is permitted to consider all plausible evidence, but that it can convict only on the basis of evidence that is true beyond a reasonable doubt. Nothing in \textit{Huddleston}—or for that matter, in logic or policy—suggests that a jury can find guilt beyond a reasonable doubt if it finds key facts to be merely “more probable than not.” Allowing the jury to consider evidence that may fall beneath the persuasion threshold is standard in both civil and criminal cases. Even in civil cases, the jury is entitled to consider any item of evidence it may find persuasive.

Put another way, the foundation rules are tied to the burden of production, not the burden of persuasion. In criminal cases, as in civil cases, the burden of production is a preponderance of the evidence: cases are bound over for trial if the evidence reasonably supports probable cause.\textsuperscript{187} For admissibility purposes, the preponderance standard suffices to prevent speculation and hold the prosecution to offering a singular true narrative of guilt. In criminal cases, unlike civil cases, the pre-evidence and post-evidence sufficiency standards differ.

There are two very good, closely related reasons for employing the preponderance standard as the basis for foundational sufficiency in criminal cases. The first is that a beyond-a-reasonable-doubt standard for foundation rulings would greatly reduce the jury’s role in weighing the evidence. The second is that the gap between the provisional FRE 401 relevance ruling—which examines relevance on an item-by-item basis—and the principle of total evidence, which examines it in its full context, puts the jury in a better position to weigh it.\textsuperscript{188}

2. Does the Foundation Theory Break Down in Defense Cases?

The foundation theory has been presented as though it applies only to claiming parties. A question arises whether the same requirement applies to the non-burdened party (the defendant on the plaintiff’s or prosecutor’s claims, or the civil plaintiff on affirmative defenses or counterclaims). As a formal matter, a foundation requirement only applies to parties who present what they claim to


\textsuperscript{187} \textit{See, e.g., Wayne R. LaFave et al., Criminal Procedure} 754–55 (5th ed. 2009).

\textsuperscript{188} \textit{See infra} note 191 and accompanying text for a discussion of the “principle of total evidence.”
be a true narrative. Burdened parties are required to do so. Non-burdened parties have the option of doing so.

A civil defendant can rebut the plaintiff’s claim by presenting a “doubt case,” just as a criminal defendant is entitled to present a “reasonable doubt case.” Evidence intended to produce doubt, in a civil or criminal case, is essentially rebuttal evidence aimed at lowering probabilities of the adverse narrative rather than increasing probabilities on one’s own. Such evidence might well only raise possibilities and need not always take the assertive form described above.189 But a party who offers a narrative as “the probably true” one takes on a moral, legal, and epistemological obligation to support that narrative with probably true evidence.190

As a practical matter, imposing the foundation requirement of specifically assertive, probably true evidence on civil defendants does not work to impose a burden of persuasion on them, irrespective of whether the defendant chooses to put on a “doubt case” or a “well-specified case.” As shown above, plausible-but-improbable evidence, if well-founded, meets the evidence sufficient to support a finding standard and goes to the jury, so that a defendant who voluntarily presents a “well-specified case” is not prejudiced by being held to the same foundation standard as the plaintiff. The defendant still wins where the jury finds both the plaintiff’s and defendant’s “well-specified case” to be equally persuasive.

3. Does a 0.5 Prior Probability Create a Paradox?

The argument for the irrelevance of plausible-but-improbable evidence assumes that all unevidenced prior probabilities are at 0.5. At a glance, it seems

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189. A more difficult question is whether it is consistent to require the defendant to meet the “more likely than not” threshold for his evidence foundations, and even his preliminary facts under FRE 104(a). Arguably, a defendant should be entitled to offer hearsay statements that, in the judge’s view, merely plausibly (not probably) meet the elements of a hearsay exception. But see Bourjaily, 483 U.S. at 181. The question of whether courts have applied FRE 104 preliminary fact thresholds in a manner that comports with the ultimate reasonable doubt burden of proof is beyond the scope of this Article.

190. Allen has forcefully argued that both the burdened and non-burdened parties have, or at least should have, an obligation to present a “well-specified case.” See Allen, supra note 103, at 381–82. This means a single, coherent guilt- or liability-narrative, which is the equivalent of what I have called a “theory of the case” based on specific, probably true claims. Instead of trying to determine “cardinal probability”—whether the plaintiff’s case is “50% likely,” or probable in some absolute sense—Allen argues that trials work best if the fact-finder is understood and required to decide “ordinal probability,” choosing the more believable of the conflicting narratives offered by the parties. See id. The rationale for Allen’s argument is that this is necessary, or at least desirable, to resolve certain probability paradoxes and to conform to persuasive behavioral models of juror decision making. Professor Pardo develops this argument further, arguing that only by comparing the relative probabilities of the plaintiff’s case with the defendant’s case (rather than comparing the probability of the plaintiff’s case to all scenarios that might conceivably negate it) can the risk allocation inherent in the preponderance standard be attained. See Pardo, supra note 115, at 1093–94; see generally Pardo & Allen, supra note 71. The merits of these arguments are beyond the scope of this Article. Suffice it to say that a “well-specified case” requirement on civil defendants would plainly impose the foundation principle on their evidence as well.
paradoxical to say that relevant evidence must raise the probability of a fact of consequence above its prior probability of 0.5, while at the same time maintaining that relevance is not sufficiency. The latter principle means that relevant evidence is not required by itself to make a fact of consequence more probable than not. But the paradox is more apparent than real. Analyzing the relevance of a single item of evidence is necessarily provisional and hypothetical—it is an exercise by the judge to anticipate what a reasonable jury would do with the evidence and can exclude consideration of other evidence in the case. This hypothetical projection of the jury’s eventual task violates the “principle of total evidence,” a rule of inductive logic which holds that all available, relevant evidence must be taken into account in determining whether a given item of evidence tends to help confirm a hypothesis (i.e., is relevant in the legal sense).191 Rule 401 is written for judges to make relevance determinations as the evidence comes in, thereby suspending the principle of total evidence.192 The rulings are provisional, in the sense that they do not bind the jury. And jurors themselves are not instructed to apply FRE 401, but rather to apply the principle of total evidence.193 Formally, FRE 401 is expressed by the formula \( \Pr(H|E) > \Pr(H) \) where \( H \) is the fact of consequence reduced to a single proposition. Relevance from the jury perspective, considering the totality of the evidence, is better expressed as \( \Pr(H|T & E) > \Pr(H|T) \) where \( T \) is the totality of the evidence exclusive of \( E \), the item under consideration. The ultimate test of relevance for the jury is whether the evidence increases the probabilities in light of all the other relevant evidence.

This paradox underlies a great deal of scholarly debate over questions of “naked statistical evidence” and evidentiary “weight.”194 The concept of evidentiary “weight” is meant to capture the idea that probabilities can exceed 0.5 without being sufficient to meet the applicable burden of proof because very thin evidence can raise the probability of a proposition: if the starting point was

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191. See, e.g., RUDOLF CARNEB, LOGICAL FOUNDATIONS OF PROBABILITY 211 (2d ed. 1962) (“[I]n the application of inductive logic to a given knowledge situation, the total evidence available must be taken as basis for determining the degree of confirmation.”); SOBER, supra note 133, at 41–42.

192. Somewhat. Because judges have prescreened the case for plausibility they typically have some idea of the overall evidentiary picture. Moreover, lawyers arguing for the admissibility of their evidence over a relevance objection have the opportunity to help the judge view the offered evidence in its fuller context by making an offer of proof. See FED. R. EVID. 103(a)(2).

193. See, e.g., FEDERAL CIVIL JURY INSTRUCTIONS OF THE SEVENTH CIRCUIT, supra note 96, § 1.08 (“In determining whether any fact has been proved, you should consider all of the evidence bearing on the question regardless of who introduced it.”); § 2.01 (“Until the trial is over, you are not to discuss this case with anyone, including your fellow jurors . . . . [R]emember to keep an open mind until all the evidence has been received.”); JUDICIAL COUNCIL OF CALIFORNIA CIVIL JURY INSTRUCTIONS, supra note 132, § 100, at 3 (“Do not form or express an opinion about this case while the trial is going on. You must not decide on a verdict until after you have heard all the evidence.”).

194. Compare STEIN, supra note 92, at 80–91 (arguing that probability theory is incomplete as an explanation of trial fact-finding in the absence of a theory of evidentiary “weight”), and NANCE, supra note 111 (same), with D.H. KAYE, COMMENT, DO WE NEED A CALCULUS OF WEIGHT TO UNDERSTAND PROOF BEYOND A REASONABLE DOUBT?, 66 B.U. L. REV. 657, 657–58 (1986) (arguing that no separate theory of evidentiary “weight” is necessary). See also supra note 133.
0.5, even plainly insufficient, albeit relevant evidence (like the existence of a motive) can raise the probability of a fact of consequence above 0.5. The response of some theorists has been to argue that the prior probability must therefore be less than 0.5; while others have argued that Bayesian theory is entirely inapplicable to legal proof. A better answer involves recognizing that Bayesian theory makes the same distinction between relevance and sufficiency that the law makes. Raising a probability above 0.5 on thin evidence supplies confirmation—relevance, in legal terminology—but does not necessarily justify “belief” (a finding of “sufficiency”). Belief in this example would be justified, if at all, only if the motive evidence were all the evidence available—and we know that no criminal case would be allowed to proceed—no jury would be allowed to “believe” guilt—if motive were the only evidence presented. In other words, Bayesian belief must comport with the principle of total evidence and, as in law, a “sufficiency” finding can only be made in light of all the available evidence. Bayesian logic does not tell us how much evidential “weight” there must be—that is the equivalent of the requirement of detail described above, which comes from some other, perhaps intuitive source. Whatever its source, the “weight” or “detail” requirement is necessarily factored into any “sufficiency” determination through the principle of total evidence. In other words, relevance and sufficiency differ, not because the assignments of prior or posterior probabilities differ in the two cases, but because the body of evidence under consideration differs.

4. Does the Foundation Theory Raise the Standard for Admissibility of Evidence?

Concerns that the foundation theory proposed here would somehow raise the bar for admissible evidence are unwarranted. The foundation theory merely describes the logical structure unifying the various existing foundation rules and explains their logical relationship to relevance. It does not change any admissibility rules.

Moreover, the foundation standard of “evidence sufficient to support a finding” is based on its potential probability of truth and its potential relevance. That standard asks only whether there is enough evidentiary weight or detail for a reasonable jury to conclude the evidence is probably true. “Plausible but improbable” evidence should not be excluded by a judge under this standard because “plausible” evidence, by definition, is “believable”: it has the potential to be deemed probably true. Foundation decisions are based on this potential quality of the evidence; and because foundation is a precondition of relevance, a ruling that evidence “is relevant” shares this “potential” quality: it is capable of being deemed relevant by the fact-finder. Technically speaking, judges do not rule that evidence is relevant, but only that it is potentially relevant to a reasonable jury. A judge’s rulings admitting evidence do not bind the jury, which is free to disregard potentially relevant evidence as ultimately irrelevant, and to deem potentially probably true evidence as ultimately improbable.
A graphical illustration may be useful here. For purposes of discussion, we might equate “plausible but improbable” evidence with evidence having a “40% likelihood” of being true. Numerical probability estimates are useful for purposes of illustration and for making certain idealized arguments. But the notion that we think in terms of 100 meaningfully different gradations of probability (or, 1,000, forsooth, for those bold enough to go out one decimal place) is potentially misleading. Among other objections, this approach understates the range of uncertainty or “equipoise” in a civil case—that is, the point at which a juror believes the plaintiff’s and defendant’s version of events equally and must, under the law of burden of persuasion, find against the plaintiff. The hundred-point scale implies that “equipoise” is a tiny notch in the dead middle of a 100 centimeter ruler, whereas it may be more like an oblong balloon in the middle of several balloons laid end-to-end. Figure 7 illustrates the “evidence sufficient to support a finding concept,” superimposed on both a numerical and a “balloon” scale:

![Figure 7. Evidence Sufficient to Support a Finding of Fact “A”](image)

This illustration should not be taken for an argument either that there are five gradations of certainty, or that those gradations correspond to particular numerical probabilities; rather it is a purely notional mapping, to illustrate the idea that actual decision-making heuristics of certainty may correspond to wide bands of percentage likelihoods. Nor need one argue that “evidence sufficient to support a finding” (“ESSF”) means a 35% or a 40% probability of being true. The black letter principle merely holds that evidence sufficient to support a finding of probable truth—either of a fact of consequence or a lesser foundational fact—is somewhere lower than the screening judge’s assessment of 50% probability. Once the judge determines that a reasonable jury could find the factual condition to be probably true, the judicial oversight role—the role of “evidence law”—ends. What does the jury do with “plausible but improbable” evidence?

195. See, e.g., ACHINSTEIN, supra note 146, at 82–83 (citing probability theorists who argue for ranges of probabilistic belief rather than numerical points).
In theory, the jury may disregard it as irrelevant; recalculate its likelihood as “probably true”; or, perhaps (illogically) deem it relevant even though improbable. The only thing the jury is not supposed to do is to determine that one fact (or set of facts collectively) deemed plausible but improbable is sufficient to meet the “preponderance of the evidence” standard. How a jury ultimately otherwise handles such evidence is left by the law of evidence in a black box.

D. PRACTICAL IMPLICATIONS OF THE FOUNDATION THEORY

The foundation principle, going by the name of conditional relevance, is a classic example of a doctrine that has been questioned according to the terms of the old adage: “Yes, it works in practice—but does it work in theory?” Conditional relevance critics have vigorously addressed themselves to the latter question and wrongly answered “no.” Despite issuing warnings about the potential danger of conditional relevance rulings causing widespread improper exclusions of relevant evidence, they have produced no reason to believe that those have occurred and that litigation practice has been skewed as a result. Nevertheless, conditional relevance critics have suggested that the rules should be changed to eliminate conditional relevance.196

The biggest practical implication of the foundation theory advanced in this Article may be to provide a theoretical basis for leaving well enough alone. Professor Edmund Morgan’s original insight in creating FRE 104(b)197 was to give the jury more latitude, not less, to consider relevant evidence. Many judges, before the adoption of the federal rules, had treated conditional relevance questions as FRE 104(a)-type questions for judicial, rather than jury, determination, and thereby excluded more evidence than under current practice.198 Yet Morgan has had many detractors and few defenders.

This Article shows that the foundation rules work in theory. But the foundation theory should also have practical implications. By showing that foundation is a ubiquitous characteristic of all evidence, the foundation theory should be helpful to students and practitioners to get evidence admitted. The argument of this Article is not that more evidence should now be subject to cumbersome and arcane foundation requirements, but rather that foundation requirements are intuitive and not arcane. A clear articulation of what the evidence is and how it fits the overall narrative of liability or guilt will not only show a trial lawyer what foundation is needed, but will also assist her in the crucial pretrial preparation of thinking through her case. As always, most foundations will be self-evident and require no special handling.

The other practical implication of this Article is preventive. In the event that proposed rule changes to the foundation rules gain traction due to wrong-headed

196. See supra note 72 and accompanying text.
197. See 1 WIGMORE, supra note 2, § 14.1, at 718 (noting that Professor Morgan is “apparently the inventor of the modern theory of conditional relevancy”).
198. Id. at 715–16.
criticisms of conditional relevance, this Article offers a corrective. Rule revisions based on erroneous theoretical premises are bound to lead to confusion, and thereby to unintended consequences. Ironically, the rule changes proposed by conditional relevance critics might themselves raise the bar of evidence admissibility above what it is now. Professor Friedman, for example, would replace FRE 104(b) with an FRE 403-type analysis. While FRE 403 is supposed to favor admissibility, it adds an element of subjective judicial discretion to consider whether the evidence is worth hearing when balanced against a variety of factors, including trial efficiency. This could in practice lead to more exclusions than FRE 104(b), which poses the admissibility question in less discretionary terms: whether sufficient facts have been presented to determine that the evidence is relevant.

Professor Nance proposes to solve the conditional relevance problem by recasting the foundation requirement as a “best evidence” requirement: that parties must present the best evidence reasonably available to them—presumably, evidence that maximizes both the qualities of probable truth and probative value. At first blush this seems normatively appealing for its apparent tendency to promote important fact-finding objectives. But on closer inspection, it opens a Pandora’s box of potential exclusions of relevant evidence. To enforce it would appear to require excessive judicial oversight: judges would have to become dictators of the discretionary decisions now left to the parties about how best to try their cases. Judges would be dragged into the pretrial discovery process, repeatedly asked for speculative rulings about which avenues of discovery or investigation would be needed to produce the “best evidence.” Judges would be asked to rule on such imponderables as whether counsel used “best efforts” to find better evidence prior to trial, so that it could be determined whether or not the offered evidence was the “best available.” The criteria for determining what evidence is “better” than other evidence is so subjective and case-specific that it would greatly compound the difficulty in applying predictable evidence rules. Such a regime could immeasurably expand the latitude for discretionary exclusions of relevant evidence.

**CONCLUSION**

The foundation theory resolves Nance’s paradox, with which this Article began: “[A] witness in a homicide case takes the stand and simply declares under oath that she knows who the killer is and that it is the defendant.” The testimony is not relevant. The basic fact that defendants are not haled into court

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199. *See supra* note 72.

200. *See supra* note 84 and accompanying text.

201. For example: Is direct eyewitness testimony “better” than circumstantial evidence? That question seems impossible to answer even in a single case, let alone as a general matter; lawyers would be left guessing how to build their cases.

on murder charges without any accusing witnesses is a matter of common knowledge. So the jury already knows somebody claiming to be a “witness” thinks defendant is the killer, and that bare, unspecified assertion adds nothing to the probabilities in the case. Significantly, the testimony is not well-founded: only superficially specific insofar as the witness names the defendant, the utter absence of specific factual detail invites, indeed compels, the jury to speculate about all the possible factual scenarios that may have given rise to the witness’s knowledge. The foundation theory thus demonstrates that the murder witness testimony in Nance’s paradox is irrelevant because it lacks foundation.203

The existing rules of foundation, with their “evidence sufficient to support a finding” standard, ask the judge to screen offers of evidence to make sure they are believable by a rational jury. Such evidence must be specifically assertive and probably true; without those characteristics, evidence cannot be logically relevant. This principle of well-founded evidence follows directly from the broader requirement—itself dictated by the logic of the adversary system—that parties base their claims on a single true narrative. The truth of that narrative, and the truth of the evidentiary facts necessary to sustain that narrative, are analytically indistinguishable. Once one sees that, the fundamental structure of evidence law turns out to make more logical sense than we have given it credit for.

203. Rule-based confirmation of this point can be found in FRE 701 and 602. The testimony is an opinion that violates both prongs of FRE 701: the lack of detail is at once unhelpful to the jury because it usurps the jury’s role of assessing the underlying evidence, and at the same time fails to demonstrate that the opinion is “rationally based on the perception of the witness.” See Fed. R. Evid. 701. Likewise, the testimony violates FRE 602: there is not evidence sufficient to support a finding that the witness has any firsthand knowledge, despite his unfounded assertion. See Fed. R. Evid. 602.