

Atomism, Holism, and the Judicial Assessment of Evidence

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ABSTRACT

How should judges go about assessing the admissibility of evidence? In this Article, I explore a key and underexamined issue within evidence law: the interpretive tension between atomism and holism. Should judges assess the admissibility of an item of evidence atomistically—piece by piece, and by itself? Or should they engage in a more holistic, synthetic, and relational inquiry? I argue that there is not, and cannot be, any simple answer to this question, because judicial atomism versus holism turns out to implicate two further important tensions within our bifurcated trial system: the balance of power between the judge and the attorney, on the one hand, and between the judge and the jury, on the other. Moreover, the relation between these multiple issues turns out to depend significantly on whether the evidentiary assessment at issue is what I term a low-threshold evidentiary determination, tilted in favor of admissibility (like relevance, or Rule 403), or, instead, a high-threshold determination (like the assessment of expert evidence). This Article explores both an array of evidence doctrines and the extent to which they provide guidance to judges vis-à-vis atomism versus holism, and then looks in detail at how atomism versus holism operates in both low-threshold and high-threshold circumstances.

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INTRODUCTION

One of a trial judge's primary functions is to rule on the admissibility of items of evidence. The Federal Rules of Evidence are replete with both particularistic rules and more general guidelines delineating the admissible from the inadmissible. While the jury trial has become, in practice, the exception rather than the rule, trial by jury nonetheless provides the conceptual underpinning for our rules of evidence.¹ A judge's evidentiary decisions define the jury's informational landscape; admissibility rulings delimit the materials out of which the jury sculpts its verdict.²

But what interpretive rules, guidelines, and canons ought judges to follow when making these admissibility determinations? The Federal Rules of Evidence (the Rules) provide little structured guidance on this kind of question. The Rules—specifically, Rule 104(a)—do assert the judge's power to decide preliminary questions of admissibility and instruct judges that they are not bound by the Rules of Evidence themselves in making these preliminary judgments.³ The Rules also typically define the applicable inquiry, such as whether an item is relevant (Rule 401);⁴ whether an item is hearsay and, if so, whether it fits the contours of an exception to the hearsay rule (Rules 801–804 and Rule 807);⁵ or whether expert evidence is reliable (Rule 702),⁶ among others. But while the Rules frame the

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1. As James Bradley Thayer famously remarked in his classic treatise, the law of evidence and its patchwork arrangements must fundamentally be understood as “the child of the jury system.” JAMES BRADLEY THAYER, *A PRELIMINARY TREATISE ON EVIDENCE AT THE COMMON LAW* 266 (Little, Brown, & Co. 1898). For evidence of the jury trial's relative rarity, see, for example, Marc Galanter, *The Vanishing Trial: An Examination of Trials and Related Matters in Federal and State Courts*, 1 J. EMPIRICAL LEGAL STUD. 459, 462–63 tbl.1 (2004), and Marc Galanter, *The Hundred-Year Decline of Trials and the Thirty Years War*, 57 STAN. L. REV. 1255 (2005). Plea bargains and settlements are vastly more common than jury trials.
 2. To be sure, the Rules of Evidence do formally apply in bench trials as well, but they are typically applied by judges in a significantly laxer manner when no jury is present. For an argument that judges should take evidence rules seriously even in bench trials, see Frederick Schauer, *On the Supposed Jury-Dependence of Evidence Law*, 155 U. PA. L. REV. 165 (2006).
 3. Rule 104(a) states, “The court must decide any preliminary question about whether a witness is qualified, a privilege exists, or evidence is admissible. In so deciding, the court is not bound by evidence rules, except those on privilege.” FED. R. EVID. 104(a).
 4. Rule 401 defines relevant evidence as that which has “any tendency to make a fact more or less probable than it would be without the evidence.” FED. R. EVID. 401(a).
 5. See generally FED. R. EVID. 801–804 (defining hearsay and detailing the myriad exceptions to the general rule that hearsay evidence is not admissible).
 6. Rule 702 permits expert evidence when “the testimony is the product of reliable principles and methods” and “the expert has reliably applied the principles and methods to the facts of the case.” FED. R. EVID. 702(c), (d).

questions to be asked and define the appropriate quantum of proof necessary for the judge to make his determination (most often a preponderance of the evidence), they frequently tell the judge little else about how, precisely, to make these determinations. When they do provide some limited degree of guidance, the interpretive approach varies significantly across the Rules.

In what follows, I explore a key and underexamined tension in evidence law: the interpretive tension between atomism and holism. In making their evidentiary determinations, should judges assess the item in question in relation both to its broader context and to other evidence in the case, considering the whole to inform their decision about the part? Or should they narrow their gazes to the particular item at issue, minimizing their engagement with the broader evidentiary record? In other words, should judges make determinations holistically, with an eye toward context, comparison, and complexity? Or should they make them atomistically, attempting as much as possible to assess the item on its own?

For example, Rule 403 of the Federal Rules asks judges to balance an item of evidence's probative value against a variety of competing concerns, including the danger that it will generate unfair prejudice. Should judges consider the prejudice and probative value of that item, taken by itself—atomistically? Or should they evaluate both prejudice and probative value within a broader context, holistically taking into consideration the other evidence adduced in the case that might affect the item's incremental probative value or prejudice? Imagine, for example, that in a criminal trial, the victim's stab wounds are visible on two different photographs, one of them taken by the medical examiner in the course of the autopsy, the other taken earlier by the crime scene investigator and showing far more gore and blood. Suppose that both photographs reveal the location of the fatal wounds, and suppose, further, that neither photograph is being introduced for any other purpose beyond this. If the prosecution wants to introduce the bloodier, more emotionally impactful image of the victim, should the court evaluate the prejudice versus probative value of this image standing alone? Or is it more appropriate to consider the marginal probative value and marginal prejudice of this image, also taking into account the other image available for this same purpose? The first approach would be more atomistic; the second more holistic. Or consider Rule 702, which requires expert evidence to be adequately reliable in order to be admissible.⁷ When a judge assesses reliability,

7. Rule 702 permits experts to provide their opinions or conclusions if "the testimony is based on sufficient facts or data" and "the testimony is the product of reliable principles and methods" that "the expert has reliably applied . . . to the facts of the case." FED. R. EVID. 702.

should he individually evaluate the reliability of each specific study on which an expert relies, or should he engage in a more holistic reliability inquiry into whether the aggregated array of informational inputs, taken together, support the expert's conclusions? I discuss atomism versus holism in both the Rule 403 context and the Rule 702 setting at length below;⁸ for the moment, I offer these examples simply to illustrate what the difference between atomism and holism might look like in particular contexts.

As we shall see, the Rules themselves do, at times, provide limited guidance on this issue of atomism versus holism, though that guidance is not consistent across the Rules, and in many instances the Rules provide no direct guidance whatsoever. The question then becomes one of interpretive convention, intuition, or common sense, left largely to the court's unbridled discretion and framed primarily by the judges' inchoate and instinctive sense of how best to proceed.⁹

This inquiry into certain interpretive conventions within evidence law links rather nicely with a gem of an essay penned some years ago by Professor Stephen Yeazell, my remarkable colleague in whose honor this Symposium is held. While Professor Yeazell is best known for his groundbreaking work on group litigation and class actions—among other topics in civil procedure—quite early in his career he wrote an article for *New Literary History* titled *Convention, Fiction, and Law*.¹⁰ In that piece, he canvassed the multiple and complex ways that the legal system relies on convention to achieve at least the appearance of coherence, plausibility, legitimacy, and something more or less like truth. He concluded that we need these conventions, operating more as incompletely articulated intuitions than as transparent rules, to make our adjudicative process function:

And it may well be that meaning is not a thing in itself but the result of a process, a struggle that has to be refought in every case. If that is so, what is interesting about the structure of adjudication is that it establishes a set of processes by which historical fact and textual interpretation can be not detected but achieved. They can be achieved only by use of a set of conventions, but fundamental to those conventions is the proposition that before we transfer wealth or impose punishment, two people ought to be able to fight their way beyond the barriers that divide minds from each other. One would not wish to have to defend the proposition that the shared meanings that arise from such confrontations have great philosophical or analytic rigor, yet it may be possible

8. See *infra* Parts IV and V.

9. For an argument that the Rules of Evidence at present permit an excess of judicial discretion in critical areas like hearsay, expert evidence, and character evidence, see Eleanor Swift, *One Hundred Years of Evidence Law Reform: Thayer's Triumph*, 88 CALIF. L. REV. 2437 (2000).

10. Stephen C. Yeazell, *Convention, Fiction, and Law*, 13 NEW LITERARY HIST. 89 (1981).

to believe that they reflect something real—even if the something is a subarticulate moral intuition.¹¹

The definitive article on the operation of conventions in the law of evidence has yet to be written, and that project is well beyond the scope of this Article. Nonetheless, with all due modesty, I would claim to be following a quasi-Yeazellian path by examining the way that judges wrestle with the dueling interpretive conventions of atomism and holism in their efforts to produce the evidentiary inputs for trial. With their rulings on admissibility, judges are, inevitably, both interpreting the evidence and providing the raw materials for the factfinder to do the same. While they have significant guidance on what questions they ought to be asking—questions of the “is it relevant” sort—they have rather little in the way of analytic guideposts or philosophically rigorous justifications governing what interpretive conventions ought to guide them in answering these questions. Certainly, the Rules do provide some limited direction in a variety of instances, but in many circumstances judges are instead guided primarily by instinct and, as Professor Yeazell put it, subarticulate intuition, rather than by law, rules, or any form of explicit direction. While I do not argue that we can replace these intuitions and conventions with a consistent set of across-the-board rules, I do think that much is to be gained by both making the operation of these conventions more visible, and exploring what, both conceptually and institutionally, is at stake in these interpretive choices.

In addition to arguing that atomism versus holism is an important and insufficiently explored tension within judicial decisionmaking about evidence, I also want to suggest that two further tensions lurk behind the opposition between atomism and holism. The first is between our current adversarial system with its ethos of party and attorney control, and an alternative vision of a managerial, umpireal, perhaps even inquisitorial judge. The second is the tension between judicial control and the power of the factfinder. While atomism and holism do relate to these two other fulcrums, the relationship is not entirely straightforward or linear. In many instances, judicial holism tends to increase judicial power and control, both vis-à-vis the attorneys and vis-à-vis the jury, while an atomistic, itemized approach, by contrast, tends to grant more power to both attorneys and the jury. But in other situations, this dynamic is flipped on its head, and it is judicial atomism that tends to reduce the power of both of the attorney and the jury, and holism that tends to enhance it. Why might this be and what affects this relationship?

11. *Id.* at 101.

I argue that it depends on whether the underlying evidentiary inquiry for the judge is itself tilted in favor of admissibility or exclusion and whether the baseline threshold for admission is low or high (or somewhere in between). When the admissibility threshold is low, or the Rule in question is structured as to favor admissibility, then judicial atomism also tends to favor admissibility.¹² In these circumstances, what I will call *low-threshold evidentiary determinations*, holism—with its greater degree of contextualization, comparison, and engagement with a broader spectrum of evidence—is likely to provide greater fodder for exclusion given the baseline preference for admissibility. For low-threshold determinations, like a basic relevance determination under Rule 401,¹³ or rules favoring admissibility, such as Rule 403's balancing test,¹⁴ the Rules guide judges toward permitting the evidence unless there is a significant valid reason not to do so. In this circumstance, because holism engages the court in a more searching inquiry, it will likely lead to more decisions to exclude—which decreases the proffering attorney's control over the evidence, and by reducing the array of evidentiary inputs, provides the jury with less raw material for its own decisions as well.

By contrast, for evidentiary determinations tilted against admissibility, or for which a high threshold must be met as a precondition to admissibility, the dynamics tend to operate in reverse. If the Rules require a heightened or substantial showing for admissibility, then a judge inquiring holistically will engage with a broader array of materials in assessing whether the necessary threshold or precondition has been met. For *high-threshold evidentiary determinations*, holism provides the attorney a greater opportunity to meet the required threshold precisely because the evidence is assessed in toto and holistically. For example, a sufficiently old conviction is not permitted to impeach a witness unless the proponent

12. One point of clarification: In discussing admissibility thresholds, I am not referring to standards of proof of the “more likely than not” and “beyond a reasonable doubt” sort. Rather, I distinguish between evidence provisions that overtly favor admissibility (such as balancing tests that are explicitly tilted in the direction of permitting the evidence, like Rule 403 or Rule 609(a)(1)(A), or provisions that are designed to have a low threshold (such as relevance), on the one hand; and provisions that involve balancing tests that are tilted against admissibility (like Rule 609(b) or the disclosure of expert basis evidence under Rule 703), or that require a more substantial threshold to be met as a prerequisite for admissibility (like expert evidence under Rule 702). It is also worth noting that many provisions of the Rules have neither noticeably low nor high admissibility thresholds in the sense I use these terms.

13. Rule 401 defines relevance as that evidence having “any tendency to make a fact more or less probable” than it would otherwise be. FED. R. EVID. 401. For further discussion of the low “any tendency” threshold, see *infra* notes 42–46 and 81 and accompanying text.

14. Rule 403 permits exclusion on a variety of grounds (like danger of unfair prejudice or waste of time) but only if the evidence's “probative value is substantially outweighed by [the] danger”; the word “substantially” tilts the scales distinctly—indeed, we might say substantially—in favor of admissibility. FED. R. EVID. 403.

can show that its probative value supported by specific facts and circumstances substantially outweighs its prejudicial effect.¹⁵ Given this high burden, the more specific facts and circumstances that the proponent has an opportunity to bring to the court's attention via a holistic inquiry, the greater the possibility for meeting this balancing test explicitly tilted against admissibility. Similarly, for expert evidence, which has to be shown to be adequately reliable in order to be admissible,¹⁶ a holistic approach is more likely to lead to admissibility than an atomized, one-by-one examination and assessment of each scintilla the expert offers, because it offers the proffering party the chance to meet its burden through the aggregated evidence in toto. To put it simply, the key insight is that holism typically operates as a counterpoint to the default approach to admissibility within any given rule, by providing a broader canvas or more expansive frame through which to justify deviating from the default position.

Recognizing that atomism versus holism implicates the balance of power between judge and lawyer on the one hand and judge and jury on the other, and that the effects of atomism or holism on these balances of power vary depending on the particular evidentiary threshold, leads us to a further insight. Understanding both this complexity and the specific levers at work helps explain why we do not have—and likely do not want—a consistent, across-the-Rules answer to the question of whether judges should frame their evidentiary inquiries in relatively atomistic or holistic terms. The risks of atomism and holism each vary depending on the baseline approach to admissibility that applies under any given rule. For low-threshold evidentiary determinations, atomism may incentivize distressingly strategic behavior by attorneys—an attorney, for example, might try to introduce the most prejudicial possible proof that she can get away with—and holism may help to check that tendency. But at the same time, too much holism may feel like unjustified meddling by the judge in the attorney's appropriate ability to tell her side's story in the manner in which she chooses. For high-threshold evidentiary determinations, atomism may lead to judicial assessments that feel uncomfortably myopic or, especially if the evidence in question is dispositive to the case, that seem erroneously to conflate admissibility with sufficiency. But when the threshold is high, holism may also be discomfiting, as it may leave judges feeling unmoored about precisely how to apply a high threshold to a complex, and perhaps seemingly disconnected, array of evidence. Not only do the strengths and weaknesses of each approach vary depending on the baseline ap-

15. The Federal Rules of Evidence have special rules governing convictions when more than ten years have passed since either release from confinement or from the date of conviction. FED. R. EVID. 609(b).

16. See FED. R. EVID. 702; *see also* Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579 (1993).

proach to admissibility but we must also recognize that each approach can have both benefits and drawbacks for the judicial assessment of evidence.

We thus begin to see why a theoretically sound justification in favor of either an across-the-board atomism or a consistent holism will almost certainly remain elusive. Another way to see the point is to recognize that our evidentiary system lacks what we might call an epistemology of bifurcation.¹⁷ Bifurcation—the divided power of the judge and jury—stems both from the desire to blindfold the jury from prejudicial or otherwise misleading information and also from the need to curtail the strategic behavior of the attorneys within a system that is committed both to jury factfinding and to adversarial advocacy. Judges are gatekeepers who assure that the evidentiary inputs considered by the jury comport with our notions of fairness and legitimacy, but the interpretive methods by which they are supposed to assess these evidentiary inputs is often left (perhaps intentionally) vague. Recognizing that these dynamics play out differently in high-threshold and low-threshold evidence determinations helps us see why an epistemology of bifurcation may continue to elude us.

To be sure, even apart from these institutional dynamics of adversarialism and the judge/jury bifurcation, it might not be possible to argue firmly in favor of one interpretive approach over the other. If more information typically leads to better decisions, or if understanding emerges through a search for coherence within a large variety of sources, that might suggest the superiority of holism as an interpretive approach.¹⁸ Even outside of the judge/jury context, however, it is widely understood that information can, at times, be more biasing than illuminating, and that sometimes better decision-making results from ‘blinding’ evaluators to information that risks leading them astray.¹⁹ Of course, precisely this concern—that factfinders may be misled by certain evidence—is, at root, the primary justification for a complex system of evidence rules instead of a system of free proof.²⁰ Our adversarial system no doubt exacerbates the dangers of biasing information; advocates have a definite incentive to bias jurors in their favor if they

17. For an initial exploration of this issue, see Jennifer L. Mnookin, *Bifurcation and the Law of Evidence*, 155 U. PA. L. REV. PENNUMBRA 134 (2006), <http://www.pennlawreview.com/responses/index.php?id=11>.

18. See, e.g., Ronald J. Allen, *Factual Ambiguity and a Theory of Evidence*, 88 NW. U. L. REV. 604 (1994); Michael S. Pardo, *Judicial Proof, Evidence, and Pragmatic Meaning: Toward Evidentiary Holism*, 95 NW. U. L. REV. 399 (2000); Dan Simon, *A Third View of the Black Box: Cognitive Coherence in Legal Decision Making*, 71 U. CHI. L. REV. 511 (2004).

19. See, e.g., DAN SIMON, *IN DOUBT: THE PSYCHOLOGY OF THE CRIMINAL JUSTICE PROCESS* (2012). For obvious examples, consider the extensive efforts to encourage “blinding” procedures for eyewitness identification and within forensic science.

20. See, e.g., MIRJAN R. DAMASKA, *EVIDENCE LAW ADRIFT* (1997); Mnookin, *supra* note 17; Schauer, *supra* note 2.

possibly can. Thus, the already-difficult question of atomism versus holism becomes even more difficult within the institutional context of our trial process.

As these introductory remarks already suggest, the point of this Article is therefore neither to embrace holism or atomism in general nor even to select one over the other as the better overall approach for judicial assessments of evidence (though in Part V I suggest that holism is interpretively superior with respect to expert evidence). Overall, this Article attempts to make four related but distinct contributions. The first is simply to draw attention to and illustrate the significance of this atomism-versus-holism dynamic for judicial assessment of evidence. Relatedly, the second is to show through a variety of examples that there is presently no unified approach to atomism and holism across the Rules; we see instead places where the Rules tilt in each of the two directions and other locations where they offer no guidance whatsoever. The third purpose is to explore in more detail two particular locations where the atomism-versus-holism dynamic is both important and fraught; one of these is a low-threshold setting (Rules 401/403 and the determination of prejudice versus probative value for relevant evidence), while the other is a high-threshold setting (the admissibility of expert evidence under Rule 702). This exploration of these two locations helps illustrate how the dynamics of atomism and holism play out rather differently in low- and high-threshold settings, though in both settings we encounter an unresolved seesawing between the two approaches. The fourth purpose is to suggest that this inability to settle on one strategy over the other is both explicable and perhaps even valuable, because atomism and holism may each protect distinct and legitimate institutional values both in low-threshold and high-threshold settings. In low-threshold settings, holism can protect against adversarial excess and strategic behavior, while in high-threshold settings, atomism is more likely to do the same. By contrast, in low-threshold situations, atomism checks judicial power, whereas in high-threshold settings, holism offers the parties broader opportunities to meet the higher threshold imposed by the Rules. Assuming that we maintain our systemic commitments both to (partly checked) adversarialism and to the bifurcated power of judge and jury, this tension between atomism and holism is thus quite unlikely to be resolved. Nonetheless, understanding its dynamics can help us better understand the consequences of our interpretive choices.

This Article proceeds in five Parts. In Part I, I introduce my understanding of atomism and holism in somewhat more detail and briefly explore jury-focused scholarship connected to these core concepts. In Parts II and III, I map these categories onto a variety of rules contained in the Federal Rules of Evidence, looking first at some locations in the Rules that tend to atomism and then turning briefly to areas that invite judges to engage in holism. I then turn to a more

detailed look at two specific areas in which the tension between atomism and holism is not only especially important but has also been, to a certain (rather unusual) degree, recognized as an interpretive issue by the U.S. Supreme Court (though with different terminology). I first focus on a low-threshold evidentiary setting—the assessment of prejudice and probative value under Rule 403 (Part IV)—and then turn to a high-threshold setting: reliability assessments of expert evidence under Rule 702 (Part V). Finally, I offer some concluding thoughts about the tension between atomism and holism.

I. ATOMISM, HOLISM, AND EVIDENCE: AN OVERVIEW

Before we proceed, it is worth describing in somewhat more detail the dual conceptions of atomism and holism in the context of making admissibility determinations. As I use the terms, atomism and holism are extreme points on an interpretive continuum. Atomism, as I am using the concept, operates on two distinct but related axes: First, the item of evidence's evaluation in relation to other items of evidence, and second, the narrowness with which we define what the item of evidence is taken to be. On the first dimension, atomism is the assessment of a piece of evidence in a relative vacuum. It involves treating each piece of evidence as an island unto itself and evaluating its admissibility in at least relative isolation.²¹ An atomistic approach to a piece of evidence means that admissibility does not depend on what other evidence may or may not be available to prove the point for which the evidentiary item is offered; plausible alternative methods for proving the point at issue do not affect the admissibility of this particular piece of evidence. In addition, and this is the second dimension, atomism may involve breaking items of evidence into smaller units—assessing the item of evidence sentence by sentence or clause by clause rather than evaluating it as a single whole. The more a judge breaks admissibility determinations into smaller constituent parts, assessing each part individually and separately rather than seeing them as interrelated and intertwined, the more atomistic the approach. Atomism therefore privileges a narrow, localized frame rather than a broad, inclusive one.

To be sure, while pure atomism would involve analyzing a small unit of information entirely within its four corners, without consideration of either its broader context or other related evidence in the case, the reality is that no ad-

21. Justice Souter invokes the image of an island in *Old Chief v. United States*, though with respect to Rule 403 in particular, rather than admissibility determinations more generally. 519 U.S. 172, 182 (1997). For a detailed discussion of this case in relation to atomism and holism, see *infra* Part IV and accompanying notes.

missibility determination can be purely atomistic. The admissibility of a piece of evidence can never be assessed completely acontextually. To give just one example, in order to be admissible, any item of evidence must be relevant, and while relevance is a strikingly low threshold under the Rules, relevance determinations are nonetheless necessarily somewhat context dependent.²² Why so? Because for a piece of evidence to be relevant, it must be relevant *to* something, and that something must matter in the case, either directly or through a chain of potential inferences. As the language of Rule 401 puts it, “relevant evidence” is evidence with “any tendency to make a fact more or less probable than it would be without the evidence,” so long as “the fact is of consequence in determining the action.”²³ Every imaginable piece of evidence is relevant to something out there in the world, but not every fact is relevant to the case at hand. Determining whether the fact is of consequence inevitably requires that it be evaluated in relationship to other facts or to the legal questions at issue. Thus, a judge cannot evaluate the relevance of a piece of evidence without considering the elements of the charge or claim, or the implicit or explicit theory that links this specific item of evidence to a matter of legitimate concern within the case, be it the whereabouts of the defendant on the night in question, the credibility of a witness, or the possibility of a causal link between the defendant’s action and the plaintiff’s harm.²⁴ Relevance, therefore, is and must be at least somewhat relational. Similarly, to determine whether an out-of-court assertion is hearsay, the court must also know the purpose for which it is being offered, because it is hearsay only if it is offered to prove the truth of the matter asserted.²⁵ If it is introduced for some other purpose—to show, for example, the effect on the listener, or to illustrate that a witness made a prior statement inconsistent with her in-court testimony, or because the simple fact of making the statement, true or not, had legal consequences—then it is not hearsay. So the hearsay determination cannot be made in a wholly atomistic vacuum; its specific purpose (which relates to the profferer’s theory of relevance for the evidence) has to be part of the calculus.

22. See FED. R. EVID. 401.

23. *Id.*

24. See, for example, the discussion of “reality hypotheses” in RICHARD O. LEMPERT ET AL., *A MODERN APPROACH TO EVIDENCE: TEXT, PROBLEMS, TRANSCRIPTS AND CASES* 207–09 (3d ed. 2000). As the Advisory Committee’s note to Rule 401 says, “Relevancy 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.” FED. R. EVID. 401 advisory committee’s note.

25. The Rules define hearsay as a statement made outside the current trial or hearing that “a party offers in evidence to prove the truth of the matter asserted in the statement.” FED. R. EVID. 801(c)(2).

Absolute atomism, therefore, cannot exist. John Donne famously claimed of human beings, “no man is an island, Entire of itself”;²⁶ so too, no item of evidence can be wholly judged as “an island, Entire of itself.” The ends of the atomism/holism continuum are therefore not found in actual practice. Moreover, as many theorists of interpretation have argued, it may well be that understanding is inevitably produced through a back-and-forth between both interpreter and the evidence and between part and whole, a hermeneutic circle that, if taken seriously, makes extreme atomism an epistemic impossibility.²⁷

Atomism and holism are therefore better understood as opposite ends of an interpretive continuum rather than as discrete evidentiary approaches. What is at stake, then, is not a choice between pure atomism and pure holism, but rather a question of tendencies and emphases. But even though the extreme points are fictions and the categories no doubt blur somewhere in the middle, the distinction nonetheless remains meaningful. A more atomistic approach keeps to a minimum the degree to which matters apart from the piece of evidence itself affect its admissibility. Atomistic interpretation therefore evaluates the piece of evidence within its own four corners as much as can be managed rather than seeing admissibility as greatly and appropriately affected by other evidence already in the record, or perhaps even by evidence that might be offered later in the case. Admissibility determinations, if conducted atomistically, are seen to be relatively discrete and independent of one another.

By contrast, a holistic approach embraces, rather than resists, the notion that admissibility determinations are contextual. Holism views meaning and significance as inherently relational and disavows artificially delineating evidence into independently assessed subparts; instead, with a holistic perspective, the admissibility of a particular piece of evidence is determined in explicit recognition of how it fits into a larger portion of the evidentiary puzzle. A holistic approach views atomism as asking a judge to wear blinders, as asking her to pretend that the item in question stands alone when in fact it is but one moment embedded inextricably within a broader tale whose meaning cannot be established outside of this broader context. To be sure, like atomism, holism can never be absolute; no one, not even the most lyncean of judges, can possibly be all seeing. Furthermore, the possibility of holism is limited further within a bifurcated system in which

26. JOHN DONNE, *Meditation XVII*, in DEVOTIONS UPON EMERGENT OCCASIONS AND SEUERALL STEPS IN MY SICKNES 108–09 (Univ. of Mich. Press 1959) (1624).

27. For Hans-Georg Gadamer, for example, understanding is only possible via a “fusion of horizons” between the person attempting to interpret and the text or issue that is being interpreted, an encounter that depends on the text, but also on the interpreter’s situatedness in the world, including her presuppositions and prejudices. See generally HANS-GEORG GADAMER, TRUTH AND METHOD (1975).

power is divided between judge and jury. Given that the judge's role is to determine what matters are fit for the jury to hear rather than to assess the evidentiary merits herself, an aggressively holistic approach to evaluating evidence could well be seen as an invasion of the province of the jury. In addition, the mere fact of temporality—the fact that evidentiary determinations are made one after another, rather than all at once—places some degree of additional, structural limits on holism.²⁸ Still, holism aims to broaden the set of reference points the judge examines when she makes any particular admissibility decision. Holism calls for examining particular items in relation to both their context and their evidentiary equivalents or substitutes.

An atomistic approach thus parses and particularizes, while holism embraces connection and context. Another way to capture the distinction is to focus on the appropriate frame for evidentiary determinations.²⁹ Should an admissibility determination be made within the narrowest frame practicable, in which the appropriate rules apply to the smallest possible unit of evidence? Or should the frame be purposefully expanded and broadened, so that other pieces of evidence are taken explicitly into consideration and their admissibility determined jointly or relationally, rather than individually? The narrower the frame, the more atomistic the inquiry; conversely, the broader the frame and the more relational the engagement, the more holistic the inquiry will be. Atomism is the interpretive equivalent of a close-up view, while holism instead employs a wide-angle lens.

One more clarification: Because atomism and holism exist on a continuum, they are matters of degree. Therefore, a given approach to an evidentiary determination might be atomistic compared to one alternative and yet more holistic than some other possible option. To give just one example, consider Rule 106, which expresses the rule of completeness: "If a party introduces all or part of a writing or recorded statement, an adverse party may require the introduction, at that time, of any other part—or any other writing or recorded statement—that in fairness ought to be considered at the same time."³⁰ This is a rule that tends toward holism, in that it invites the court to assess whether, when part of a writing is introduced, fairness requires that that part be placed in the broader, more holistic

28. Perhaps this is less the case in civil cases, given the substantial role for discovery and pretrial process that informs both the parties and the court about what is expected to unfold at trial.

29. For especially insightful articles exploring our framing conventions in other contexts, see generally Daryl J. Levinson, *Framing Transactions in Constitutional Law*, 111 YALE L.J. 1311 (2002), and Mark Kelman, *Interpretive Construction in the Substantive Criminal Law*, 33 STAN. L. REV. 591 (1981).

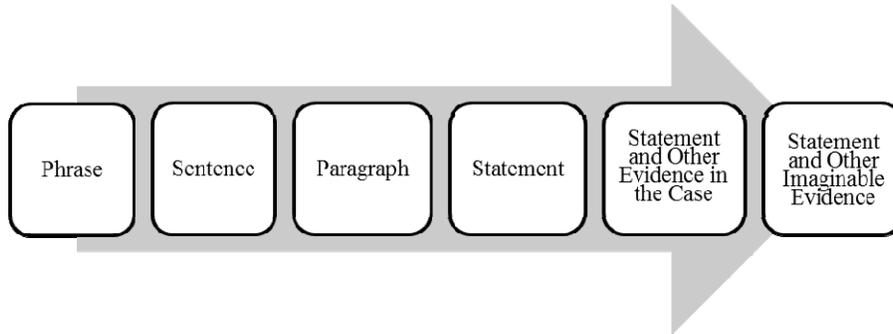
30. FED. R. EVID. 106.

context of the whole (or at least of other portions).³¹ We could certainly imagine a more atomistic version of the Rule—consider, for example, the same Rule with the removal of the phrase “or any other writing or recorded statement.” Without those words, this Rule would apply only to other portions of the specific proffered recording or document, and the judge would possess no explicit authority to allow the simultaneous introduction of other documents that helped contextualize the party’s evidence. This alternative Rule would be somewhat more atomistic in its approach than the Rule we actually have. On the other hand, we could imagine a more expansive version of the Rule that would permit any other evidence—including oral statements—that ought in fairness to be considered at the same time. That modification would broaden the range of evidentiary alternatives available to the court and would render it somewhat more holistic than its current form. While in my nomenclature, I would say that the Rule 106 is holistic, because it explicitly directs the judge to look to a context beyond an individual item of evidence, it is also obvious that atomism and holism are tendencies, not absolutes. Though in what follows I sometimes refer to specific rules as atomistic or holistic as a convenient shorthand, I do not mean, by doing so, to deny that atomism and holism exist on a continuum rather than as discrete and separable interpretive approaches.

What does this continuum look like? We might envision the atomism-to-holism continuum as follows, with the most atomistic approach on the left of the diagram below. The judicial inquiry becomes increasingly holistic as we move to the right along the arrow. To be sure, in this diagram, we have blended our two axes, considering together both the “scale” at which we consider an item of evidence (phrase/sentence/paragraph/statement) as well as the item’s relation to its broader context and evidentiary alternatives. While in theory, a judge might be atomistic on one axis (considering, say, the admissibility of an isolated phrase within a longer statement) and holistic on another (by considering this isolated phrase in relation to a variety of evidentiary alternatives), I suspect that the continuum more often runs in the way depicted in this diagram. In any event, the key point is simply that it is a continuum—tendencies rather than absolutes.

31. Note that holism here is being used to curb strategic behavior by attorneys making use of the low threshold for relevance; as one court put it, Rule 106 “protects litigants from the twin pitfalls of creative excerpting and manipulative timing.” *United States v. Boylan*, 898 F.2d 230, 256 (1st Cir. 1990).

Figure 1. From Atomism to Holism



One more preliminary point is called for before we turn to the specific operation of atomism and holism within the law of evidence: Surprisingly little scholarship has looked at issues of atomism and holism with respect to judicial determinations.³² This is even more puzzling because there has been a robust and substantial literature examining how juries assess evidence, and this jury-focused scholarship has examined in detail concepts that map, to a significant degree, onto atomism and holism.

More specifically, in the scholarship examining how factfinders make sense of the evidence presented to them, “mathematical” approaches compete with “explanatory” approaches for conceptual dominance.³³ Mathematical approaches often imagine that the items of evidence are (or ought to be) evaluated individually, measured and weighed one by one, the scales of justice teetering slightly in one direction or the other as each item is added—or, in other words, assessed atomistically.³⁴ For example, a mathematical approach might envision the jury as

32. For the small handful of articles that do in some way engage this issue, see, for example, Pardo, *supra* note 18, offering a philosophical defense of holism, but with juror interpretation as the dominant lens; Susan Haack, *Proving Causation: The Holism of Warrant and the Atomism of Daubert*, 4 J. HEALTH & BIOMEDICAL L. 253 (2008), focusing on the interpretation of toxic-torts evidence; Mirjan Damaska, *Atomistic and Holistic Evaluation of Evidence: A Comparative View*, in COMPARATIVE AND PRIVATE INTERNATIONAL LAW: ESSAYS IN HONOR OF JOHN HENRY MERRYMAN ON HIS SEVENTIETH BIRTHDAY 91–104 (David S. Clark ed., 1990), suggesting that the adversarial system tends toward atomism and the inquisitorial system leans toward holism; and John Leubsdorf, *Presuppositions of Evidence Law*, 91 IOWA L. REV. 1209 (2006), exploring a variety of what he terms “presuppositions” of evidence law, which include both its “atomic” tendency to itemize evidence, as well as a penchant for generalizations, among a variety of others.

33. See generally INSIDE THE JUROR: THE PSYCHOLOGY OF JUROR DECISION MAKING (Reid Hastie ed., 1993).

34. See, e.g., PROBABILITY AND INFERENCE IN THE LAW OF EVIDENCE: THE USES AND LIMITS OF BAYESIANISM (Peter Tillers & Eric D. Green eds., 1988); Peter Donnelly, *Approximation, Comparison, and Bayesian Reasoning in Juridical Proof*, 1 INT’L J. EVIDENCE & PROOF 304, 305–

engaged in Bayesian updating, in which an assessment of the “likelihood ratio”³⁵ associated with each new item of evidence modifies the factfinder’s prior evaluation of the odds of guilt or liability. By contrast, explanatory models conceptualize the jury as engaged in a more active, interpretive—and holistic—relationship to the evidence. The best known, and perhaps dominant, explanatory model—the “story model”—posits that the jurors construct a narrative built out of both the evidence and their own experiences about how the world works. Jurors use the evidence and their experience together, actively generating a plausible, coherent story out of the evidence and simultaneously fitting the evidence to that narrative framework.³⁶ According to this model, the jurors do not simply weigh the items of evidence individually and piecemeal; rather, they endeavor to make sense of the evidence as a whole, with individual items assessed both in relation to the other evidence presented and to their experience.

For the most part, mathematical models assume that the factfinder can assess evidence item by item, separately and atomistically. As Dan Simon writes:

Bayes Theorem relies heavily on syntactic assumptions, the most important of which is that each piece of evidence is evaluated on its own terms, and is affected neither by the other pieces of evidence (unless the items are substantively interdependent) nor by the conclusion of the process. This assumption relies in turn on a conception of unidirectionality in human reasoning: inferences flow from the individual pieces of evidence toward a computed judgment, but the perception of the evidence is in no way affected in the reverse direction. In other words, the evaluation of the evidence precedes, and is thus entirely exogenous to, the process of making the judgment.³⁷

07 (1996); Stephen E. Fienberg & Joseph B. Kadane, *The Presentation of Bayesian Statistical Analyses in Legal Proceedings*, 32 STATISTICIAN 88 (1983); Stephen E. Fienberg & Mark J. Schervish, *The Relevance of Bayesian Inference for the Presentation of Statistical Evidence and for Legal Decisionmaking*, 66 B.U. L. REV. 771, 773–76 (1986); Michael O. Finkelstein & William B. Fairley, *A Bayesian Approach to Identification Evidence*, 83 HARV. L. REV. 489 (1970).

35. The likelihood ratio is a subjective assessment of the probability of the same event under two different hypotheses. In this instance, it could be, for example, the likelihood of receiving this piece of evidence if the defendant were guilty (or liable) compared to the likelihood of receiving this piece of evidence if the defendant were innocent (or not liable). For an introduction to Bayes’s theorem in evidence law, see, e.g., *id.*

36. For classic developments of the story model, see generally Nancy Pennington & Reid Hastie, *A Cognitive Theory of Juror Decision Making: The Story Model*, 13 CARDOZO L. REV. 519 (1991), Nancy Pennington & Reid Hastie, *Evidence Evaluation in Complex Decision Making*, 51 J. PERSONALITY & SOC. PSYCHOL. 242 (1986), and Reid Hastie, *The Role of “Stories” in Civil Jury Judgments*, 32 U. MICH. J.L. REFORM 227 (1999). See also, e.g., ROBERT P. BURNS, *A THEORY OF THE TRIAL* (1999); Kenworthy Bilz, *We Don’t Want to Hear It: Psychology, Literature and the Narrative Model of Judging*, 2010 U. ILL. L. REV. 429.

37. Simon, *supra* note 18, at 560.

According to this model, the evidence is evaluated both item by item and a-temporally; just as the items on a scale together weigh the same amount no matter which one is placed there first, the order in which the evidence is presented ought not to matter to its interpretation. By contrast, the story model sees the evidence in far more relational, integrated terms; the jury looks for coherence across items of evidence in order to build a plausible, interconnected story.

To be sure, we do very little monitoring of precisely how juries weave stories or weigh evidence, preferring to leave the sausage making mostly unexamined. While those from each school might disagree both descriptively and normatively about what cognitive processes and methods factfinders do use and what processes they ought to use, both groups would acknowledge that (apart, perhaps, from the Rules of Evidence themselves) we do not have a well-developed law of jury decisionmaking. That is, we do not have rules or instructions through which we instruct the jury about what methods it ought to use to assess the evidence. While some might wish it otherwise, we do not, in fact, tell the jury to engage in (or refrain from) mathematical reasoning, nor do we tell it to think about the evidence in toto and construct the most plausible story.³⁸

38. Consider, for example, this (not atypical) pattern jury instruction on the evaluation of evidence:

[You are about to] hear the evidence in this case. The evidence consists of the sworn testimony of witnesses and any exhibits admitted into evidence by the court. You should consider the evidence in light of your common sense and experience in life but cannot consider any information not admitted as evidence by the court.

At the end of the trial, it will be your job to decide how much weight to give to the evidence and evaluate the evidence according to the instructions that the court will give you. These instructions contain the law that must be applied in this case. When you consider the evidence, you must not be influenced by sentiment, prejudice, passion or public opinion. You must base your verdict upon a fair consideration of the evidence.

ALASKA CRIMINAL PATTERN JURY INSTRUCTION § 1.07 (2011) (alteration in original). The jury is told to weigh the evidence, but it is given no instructions about how to do so. To be sure, some pattern jury instructions give more detail to the factfinder about what it means to weigh the evidence, especially vis-à-vis credibility. Take, for example, the Seventh Circuit's pattern instruction (again, not atypical):

1.03 TESTIMONY OF WITNESSES (DECIDING WHAT TO BELIEVE)

You are to decide whether the testimony of each of the witnesses is truthful and accurate, in part, in whole, or not at all, as well as what weight, if any, you give to the testimony of each witness.

In evaluating the testimony of any witness, you may consider, among other things:

- [- the witness's age;]
- the witness's intelligence;
- the ability and opportunity the witness had to see, hear, or know the things that the witness testified about;
- the witness's memory;

But what about those judges whose evidence rulings create the evidentiary landscape available to the factfinder? Precisely how are judges supposed to think about the evaluation of evidence? As I have suggested, notwithstanding the significant literature on jury decisionmaking and the nature of the inferential processes used by factfinders, very little scholarship has examined by what interpretive conventions judges themselves ought to assess admissibility.³⁹ For juries, then, we have a relatively robust scholarly literature on inferential and interpretive processes but virtually no law, while for judges, we have a modest hodgepodge of guidance from the Rules of Evidence and from cases but very little in the way of scholarship.

* * *

We now turn to that hodgepodge of guidance. As I survey a variety of areas within evidence, we will see that in some circumstances, an implicit or explicit atomism dominates, while in others, at least a partial holism is the convention, or is explicitly called for by the relevant rule. In still other circumstances, there is no guidance on the question whatsoever, and judges have nothing (beyond the loose and inchoate conventions to which Professor Yeazell refers)⁴⁰ to use as lodestars. In addition, despite the enormous variations in approach across kinds of evidence (as well as within evidentiary categories), our current system lacks any coherent justification for why judges seem to take an atomistic approach to certain questions and a holistic approach to others; no analytic framework, much less an epistemology of bifurcation, undergirds the intuitive pull of atomism in some locations and holism in others. Because of the enormous discretion trial judges are generally granted with regard to evidentiary decisions,⁴¹ the tricky and important issues that this tension raises are often papered over, or even invisible.

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- any interest, bias, or prejudice the witness may have;
 - the manner of the witness while testifying; and
 - the reasonableness of the witness's testimony in light of all the evidence in the case.

PATTERN CRIMINAL FEDERAL JURY INSTRUCTIONS FOR THE SEVENTH CIRCUIT, 1.03, available at <http://www.ca7.uscourts.gov/pjury.pdf>. Elsewhere, these instructions also tell the jury to use its "common sense" in weighing the evidence. PATTERN CRIMINAL FEDERAL JURY INSTRUCTIONS FOR THE SEVENTH CIRCUIT, 1.04. While instructions like these are somewhat more granular than Alaska's quoted instructions and purposefully direct the jury's attention in particular ways, they still do not provide the jury with any guidance on what interpretive methods to use for weighing the evidence, nor do they direct the jury specifically to use a formalist, mathematical, or probabilistic approach on the one hand, or to use a holistic, narrative, or story-model approach on the other.

39. For partial exceptions, see generally the several articles cited *supra* note 32.

40. Yeazell, *supra* note 10.

41. See generally Swift, *supra* note 9.

This invisibility is unfortunate, for the distinction between atomism and holism is a central—perhaps even *the* central—tension pervading judicial determinations of evidence, implicating the balance of power between judge and jury on the one hand, and between judge and attorney on the other. One purpose of this Article, then, is simply to draw attention to this underrecognized tension and to illustrate the ways in which the Rules at times invite atomism, at times invite holism, and at times are quite silent on the question of which interpretive convention ought to govern judicial determinations about admissibility. To help remedy the relative invisibility of this distinction, the following Part therefore briefly surveys several evidentiary rules. After this brief overview of a number of areas of evidence, the Article turns in Part III to two areas in more depth, one of them a setting that involves low-threshold evidentiary determinations and the other a higher-threshold setting.

II. ATOMISM IN THE FEDERAL RULES OF EVIDENCE

A. Relevance

The first place we can see a relatively atomistic approach to evidence is in the definition of relevance itself. As we have already seen, there is something inherently relational in the idea of relevance: Relevance does not inhere to a piece of evidence but rather exists as a relation between the item and something of consequence in the case.⁴² Nonetheless, the Federal Rules take a strikingly atomistic approach to determining whether an item is relevant under Rule 401 and hence presumptively admissible under Rule 402.⁴³ The threshold for determining relevance is extremely low: A piece of evidence is relevant if it has “*any* tendency” to change the probability of some matter that is at issue.⁴⁴ In order to be relevant, a piece of evidence therefore need not do very much work at all; it may be nothing more than a very small piece of a very large puzzle. As the Advisory Committee Note to Rule 401 reminds the reader, quoting Charles McCormick, one of the great treatise writers in the field of evidence, “[a] brick is not a wall.”⁴⁵ The wall of evidence need not be built by any single item of evidence standing

42. FED. R. EVID. 401.

43. Federal Rules of Evidence 402 provides that relevant evidence is admissible unless some other law or rule dictates otherwise, and deems irrelevant evidence inadmissible.

44. FED. R. EVID. 401 (emphasis added).

45. *Id.* advisory committee’s note (internal quotation marks omitted).

alone. Persuasion is built out of the totality, and there need not be any individual item of evidence powerful enough to make the case by itself.⁴⁶

Such an understanding of relevance makes relatively atomistic assessments possible. Because the contribution of any individual piece of evidence need not be substantial in order for it to be relevant, a judge may rule on relevance even without a well-defined sense of its probative value. So long as the proponent can assert some connection, even if tenuous, between the item and something legitimately at issue in the case, the low relevance threshold is met. Thus, relevance determinations can typically be made (on objection) one by one as the trial proceeds, rather than requiring the judge to have a rich understanding of the full contours of the factual disputes or the parties' theories of the case as a precondition to its assessment.

This low "any tendency" standard was not universally considered the correct approach to relevance determinations. John Henry Wigmore, quite probably the most important treatise writer of the twentieth century, argued that legal relevance should require something more than pure logical relevance, something he called a "plus value": "Legal relevancy denotes, first of all, something more than a minimum or probative value. Each single piece of evidence must have a plus value,"⁴⁷ he argued. Wigmore's notion of a "plus value" never gained much traction, in significant part because defining a "plus value" with enough precision to be helpful proved difficult.⁴⁸ If some additional quantum of probative value was required for legal relevancy, just how much was needed? And how could the

46. The classic commentators on evidence frequently emphasize that evidence need not be sufficient to be admissible. *See generally* THAYER, *supra* note 1; 1 JOHN HENRY WIGMORE, A TREATISE ON THE ANGLO-AMERICAN SYSTEM OF EVIDENCE IN TRIALS AT COMMON LAW §§ 28–29 (2d ed. 1923); WEINSTEIN'S FEDERAL EVIDENCE (2d ed. 2012).

47. 1 WIGMORE, *supra* note 46, § 28. There is now in the literature a classically described dispute between Thayer and Wigmore on this topic, in which Thayer is thought to advocate a pure logical relevance approach and Wigmore is associated with the position that something more ought to be required; Thayer's approach is generally seen as superior, partly because any effort to define with precision what that something more would actually look like runs into significant difficulty. *See, e.g.*, Herman L. Trautman, *Logical or Legal Relevancy—A Conflict in Theory*, 5 VAND. L. REV. 385, 391–92 (1952). It is not clear the two giants of evidence law were actually so far apart on this point, however. For while Wigmore does describe legal relevancy as something more than pure logical relevance, the relevant treatise sections, read in full, suggest Wigmore believed that more than a mere minimum of probative value was required for *admissibility* as much as for relevance; the real issue, in his view, was for the judge "to select only such material as is worth laying before the jury." 1 WIGMORE, *supra* note 46, § 29. It is therefore not clear that what Wigmore envisioned doing through a slightly elevated relevancy test is, in practical terms, any different from what we now do through Rule 403's provision that evidence can be excluded even if relevant if it risks the waste of time. FED. R. EVID. 403. Whether we call such evidence relevant but not sufficiently probative to be worth hearing or we instead call it legally irrelevant may be as much semantics as substance.

48. *See, e.g.*, WILLIAM TWINING, THEORIES OF EVIDENCE: BENTHAM AND WIGMORE 153–54 (1985) (noting multiple criticisms of Wigmore's "plus-value" idea).

judge assess whether this higher quantum was reached without knowing what other evidence was going to be introduced? The point here is not to defend (nor to attack) Wigmore's notion of a "plus value," but simply to point out that the higher the probative value required for relevance, the more intertwined its assessment must be with the rest of the evidence in the case. A higher test would require a more holistic approach.⁴⁹

To be sure, as I have already suggested, even a minimal, low-threshold relevance inquiry requires, to a certain degree, reaching beyond the item of evidence itself to understand how it makes something of consequence in the case more or less probable. Doing this typically requires making additional inferences. But often these inferences do not require additional case-specific evidence; they may instead be plausible experience-based generalizations about how the world works, that may inform a conception of how it may have worked in this instance. For example, suppose the prosecutor in a case introduced testimony that a gun belonging to the defendant was found three feet away from the victim of a gunshot wound. Presumably, the existence of this piece of evidence increases the probability that the defendant was the person who shot the victim. Of course, standing alone, this piece of evidence does not in any strong sense prove that the defendant shot the victim and even less does it prove the defendant's culpability under the law. In order to conclude that the defendant in fact shot the victim, a reasonable jury would require additional evidence; indeed, this piece of evidence would by itself be insufficient as a matter of law to meet the prosecution's burden of proof.

However, based on our collective experience, we would probably all acknowledge that the fact that someone testifies to a matter carries with it some greater-than-zero probability that the matter of fact to which she testifies is true. Second, we would probably agree that a gun found in the close vicinity of a shooting has a reasonable probability of having been the weapon used and, further, that there is a significant, though obviously uncertain, chance that the gun was operated by the gun's legal owner. Thus, even without considering the existence or nonexistence of any other piece of evidence—that is, even assessed atomistically—the testimony about the gun is legally relevant. If, however, we believed that a gun was no more likely to have been discharged by its owner than by any other member of the population, then the testimony regarding the ownership of the gun would not meet even the low threshold of relevance. It would

49. Twining made a similar observation in passing, noting that Wigmore's "plus value" idea has been critiqued because it "suggests that a judge is able to predetermine the weight of a single item of evidence outside the context of the whole corpus of evidence." *Id.* at 154.

not have any tendency to make a fact at issue any more likely than it was before that piece of evidence was introduced.⁵⁰ I offer this illustration to make what I hope is a simple point: Though assessing the relevance of evidence requires further inferences and even armchair assumptions about empirical reality, that only makes such assessments holistic in a quite limited sense. Relevance determinations cannot rest solely on the four corners of the piece of evidence, but typically, they do not require a robust consideration of the existence or nonexistence of other pieces of evidence in the specific case.⁵¹ It is in this sense that the low threshold for relevance makes relevance determinations atomistic: Additional admissible evidence supporting the inferences invited by the item's proponent is generally not a prerequisite for deeming the original item relevant in the first place.⁵²

Moreover, courts have asserted that items of evidence can and sometimes should be broken down into subparts for assessing relevance, thus making relevance inquiries even more atomistic. For example, the Supreme Court wrote in *Old Chief v. United States*:

Viewing evidence of the name of the prior offense as relevant, there is no reason to dwell on the Government's argument that relevance is to be determined with respect to the entire item offered in evidence (here, the entire record of conviction) and not with reference to distinguishable sub-units of that object (here, the name of the offense and the sentence received). We see no impediment in general to a district court's determination, after objection, that some sections of a document are relevant within the meaning of Rule 401, and others irrelevant and inadmissible under Rule 402.⁵³

50. The analysis here is implicitly Bayesian; I am drawing on Richard O. Lempert, *Modeling Relevance*, 75 MICH. L. REV. 1021 (1977).

51. In fact, one critique of the Rules' liberal definition of relevance is precisely that literally *any* piece of evidence, even standing alone, can be argued to be relevant through chains of experiential claims and invited inferences. See, e.g., David Crump, *On the Uses of Irrelevant Evidence*, 34 HOUS. L. REV. 1, 3–13 (1997) (arguing that Rule 401 "is perfectly indiscriminate" and "literally admits any arguable factual proposition in any case," even, say, a Shakespeare play or an apple introduced in an assault case).

52. Issues of conditional relevance are an obvious exception. See FED. R. EVID. 104(b). While conditional relevance has posed thorny delimitation problems for evidence professors, practically speaking it seems to arise relatively infrequently. For the scholarly debate, see, for example, Ronald J. Allen, *The Myth of Conditional Relevancy*, 25 LOY. L.A. L. REV. 871 (1992), Vaughn C. Ball, *The Myth of Conditional Relevancy*, 14 GA. L. REV. 435 (1980), Richard D. Friedman, Reply, *Refining Conditional Probative Value*, 94 MICH. L. REV. 457 (1995), and Dale A. Nance, *Conditional Relevance Reinterpreted*, 70 B.U. L. REV. 447 (1990).

53. *Old Chief v. United States*, 519 U.S. 172, 179 n.4 (1997).

In practice, this is a matter on which trial courts are given a great deal of discretion. There are neither generally applicable canons nor well-considered shared conventions that govern how fine a sieve a judge should use to separate the relevant from the irrelevant portions of a statement or document.⁵⁴ Should analysis of relevance take place phrase by phrase, sentence by sentence, or paragraph by paragraph? If most of a document is relevant, should the irrelevant portions be redacted? If they are not obviously harmful or prejudicial, is it better to permit the whole? No clear doctrinal answer exists, nor do the Rules provide any guidance. What is clear, however, is that some degree of parsing and sifting is, if not required, at least permitted. In practice, judges do frequently divide statements into smaller subparts to determine relevance, though they do so intuitively rather than based on clearly expressed guidelines. Indeed, in an inchoate and not particularly theorized way, the need to do so is even taken for granted by judges and parties alike.⁵⁵

B. Statements Against Interest

We have seen that the extremely low threshold for defining relevance makes atomistic determinations possible. We have seen, further, that the atomistic delineation of a piece of evidence into relevant and irrelevant portions is permitted under the Rules, though such atomistic analysis is generally a matter of discretion rather than mandated. I turn now to an area where the current jurisprudence requires a hybrid approach: The hearsay exception permitting the use of statements against interest made by unavailable declarants, codified in Rule 804(b)(3).⁵⁶ As we shall see, Rule 804(b)(3), as interpreted by courts, requires that judges atomistically evaluate the content of statements under the Rule but also requires that they determine the trustworthiness of the statement contextually.

Rule 804(b)(3) permits the use of statements that would otherwise be hearsay if “a reasonable person in the declarant’s position would have made [the statement] only if the person believed it to be true because, when made, it was so contrary to the declarant’s proprietary or pecuniary interest or had so great a

54. In fact, this issue raises difficult questions which have received remarkably little attention in the context of relevance itself, though similar questions arise with respect to numerous other provisions of the Federal Rules, such as statements against interest, the limits of *res gestae*, the scope of hearsay exceptions, and others. See, for example, *infra* Part II.B.

55. For example, the fact that part of an extensive document is relevant would not be likely to lead a party or the judge simply to assume that it was relevant in its entirety; the same would hold true for a conversation, a statement, or an eyewitness’s report.

56. FED. R. EVID. 804(b)(3).

tendency to . . . expose the declarant to civil or criminal liability.”⁵⁷ The rationale behind the Rule is straightforward: People are unlikely to fabricate statements that are genuinely and significantly against their interest at the time they make the statement.⁵⁸ Out-of-court statements that potentially subject the speaker to civil or criminal liability are thus thought to be sufficiently reliable that if the speaker is unavailable to testify in person at the time of trial, the earlier statements should not be excluded from evidence simply because they are hearsay.⁵⁹ So long as the statement is sufficiently against the speaker’s interest that a reasonable person in the declarant’s position would not be expected to make such a statement unless it were true, then it passes muster under this hearsay exception.⁶⁰

Applying the Rule prompts questions about how narrowly to define a statement against interest. If a defendant in a burglary case says, “Yes, I did it, but Big Joe was the lead. I participated, but he was the mastermind,” is that a statement against interest at all? What about, “Yes, I did it. Big Joe was there too. He was in the living room grabbing some electronics when I was upstairs. I saw some jewelry in one of the bedrooms, but I just left it there, because I didn’t want to take anything too sentimental, you know? That’s just cruel. I took a camera, though before we left.” Is that statement against the defendant’s interest, and if so, is it against interest in whole or in part?

In *Williamson v. United States*,⁶¹ the Supreme Court explicitly avowed a narrow definition of what counts as against the speaker’s interest. The Court’s approach requires parties to sift through statements carefully, separating the genuinely inculpatory aspects of the statement from those parts that were self-serving, or even simply neutral. As the Court wrote:

57. FED. R. EVID. 804(b)(3)(A).

58. The significant literature on the phenomenon of false confessions illustrates the limits to this assumption about human behavior. See, e.g., GISLI H. GUDJONSSON, *THE PSYCHOLOGY OF INTERROGATIONS, CONFESSIONS AND TESTIMONY* (1992) (discussing false confessions in detail in the context of how erroneous testimony is produced); Saul M. Kassin & Lawrence S. Wrightsman, *Confession Evidence*, in *THE PSYCHOLOGY OF CONFESSION EVIDENCE AND TRIAL PROCEDURE* 67, 67–68 (Saul M. Kassin & Lawrence S. Wrightsman eds., 1985) (discussing the impact of uncorroborated confessions, including false confessions, on the likelihood of conviction); Saul M. Kassin et al., *Police-Induced Confessions: Risk Factors and Recommendations*, 34 *LAW & HUM. BEHAV.* 3 (2010) (discussing false confessions generally); Richard J. Ofshe & Richard A. Leo, *The Social Psychology of Police Interrogation: The Theory and Classification of True and False Confessions*, 16 *STUD. IN L. POL. & SOC’Y* 189 (1997) (comparing tactical differences in interrogation methods that produce either true or false confessions).

59. To be sure, there might be other reasons for exclusion. Rule 804(b)(3) does not make the item of evidence admissible; it simply means that the rule against hearsay does not exclude it. See FED. R. EVID. 804(b)(3).

60. FED. R. EVID. 804(b)(3)(A).

61. 512 U.S. 594 (1994).

One possible meaning [of the word “statement”], “a report or narrative,” connotes an extended declaration. Under this reading, Harris’ entire confession—even if it contains both self-inculpatory and non-self-inculpatory parts—would be admissible so long as in the aggregate the confession sufficiently inculpatates him. Another meaning of “statement,” “a single declaration or remark,” would make Rule 804(b)(3) cover only those declarations or remarks within the confession that are individually self-inculpatory.⁶²

The Court continued:

Although the text of the Rule does not directly resolve the matter, the principle behind the Rule, so far as it is discernible from the text, points clearly to the narrower reading. Rule 804(b)(3) is founded on the commonsense notion that reasonable people, even reasonable people who are not especially honest, tend not to make self-inculpatory statements unless they believe them to be true. This notion simply does not extend to the broader definition of “statement.” The fact that a person is making a broadly self-inculpatory confession does not make more credible the confession’s non-self-inculpatory parts. One of the most effective ways to lie is to mix falsehood with truth, especially truth that seems particularly persuasive because of its self-inculpatory nature.⁶³

The Court reasoned that if the rationale for the exception was that reasonable people would be unlikely to fabricate genuinely self-inculpatory statements, then the exception should apply only to those statements that are truly inculpatory and to no others. It rightly recognized that the mere fact that part of someone’s narrative inculpatates them does not helpfully or persuasively establish that other parts of the narrative are also reliable:

The fact that a statement is self-inculpatory does make it more reliable; but the fact that a statement is collateral to a self-inculpatory statement says nothing at all about the collateral statement’s reliability. We see no reason why collateral statements, even ones that are neutral as to interest, should be treated any differently from other hearsay statements that are generally excluded.⁶⁴

62. *Id.* at 599 (citations omitted). Of course, using the terminology I employ in this Article, the first approach would be significantly more holistic, and the latter more atomistic.

63. *Id.* at 599–600.

64. *Id.* at 600 (citation omitted).

The Court's particular concern in *Williamson* was inculpatory remarks intertwined with exculpatory ones,⁶⁵ not altogether unlike my first Big Joe example above.⁶⁶ When someone takes some degree of responsibility but also lays blame on a collaborator, there is no particular reason to believe that their acknowledgement of their own partial responsibility establishes that their description of the other person's responsibility is accurate. Especially when the statement is made to an interrogator or to an investigating authority, there may be every reason for the speaker to minimize her own role and exaggerate or overstate participation by others. Therefore, that the statement taken as a whole is inculpatory provides virtually no meaningful protection against falsehood.⁶⁷

Thus, the Court in *Williamson* called on lower courts to be atomistic in their analysis of statements against interest.⁶⁸ The question of whether the statement as a whole is self-inculpatory is only a preliminary inquiry. Even if the entire statement is self-inculpatory, implementing the exception requires a court to take another step and break the statement down into individual statements (presumably sentence by sentence or even phrase by phrase, though the Court is not clear on this point).⁶⁹ The court must examine whether each sentence (or clause) is self-inculpatory, exculpatory, or neutral. Only those that are genuinely inculpatory (and, despite the Court's seeming rejection of the use of neutral collateral statements, presumably some accompanying statements that provide context but are not exculpatory) should be admitted under the exception.⁷⁰

This approach—insisting on sentence-by-sentence or even clause-by-clause parsing of statements—is clearly atomistic. However, two other aspects of our current approach to statements against interest invite significantly more holistic analysis. First, *Williamson* makes clear that the assessment of whether a statement was in fact against the speaker's interest at the time it was made should

65. *Id.*

66. *See* Part II.B.

67. In circumstances like these, it may also be possible to argue that the entire statement fails the basic test under Rule 804(b)(3); sometimes a statement including both inculpatory and exculpatory portions may as a whole not actually be against interest at all, in that the speaker may be disavowing responsibility to the maximum extent she deems credible.

68. *See generally Williamson*, 512 U.S. 594.

69. Note that in my first Big Joe example, sentence by sentence analysis would permit the whole statement, and this would presumably be quite troubling under *Williamson*.

70. Those attracted to holism might point out, correctly, that this degree of atomism means that the admitted statement becomes a statement that was, in some sense, never actually made. Parsing a statement and extricating from the whole only those self-inculpatory sentences could produce a statement with a meaning quite different from the original statement, perhaps even misleading or downright fictional. To apply this approach to my examples above yields statements like, "Yes, I did it. I participated," and "Yes, I did it. I took a camera . . . before we left," both of which have radically different valences and meanings than the original statements.

be determined contextually simply by evaluating the words spoken, but rather, by examining the circumstances in which they were spoken.⁷¹ Second, Rule 804(b)(3) requires that if a statement against penal interest is offered in a criminal case, there must be “corroborating circumstances that clearly indicate its trustworthiness.”⁷² Corroboration under Rule 804(b)(3) can either be independent evidence confirming aspects of the statement itself, or merely the circumstances in which the statement was made make it worthy of belief.⁷³ Just as it is inherently holistic to use context to evaluate whether a statement is actually against the speaker’s penal interest, the corroboration requirement is also holistic because it requires judges to look beyond the piece of evidence in isolation and to make a judgment in relation to corroborating circumstances that indicate trustworthiness. This broadens the inquiry and expands the frame, directing judges to consider the circumstances in which the statement was made, the existence or nonexistence of other corroborating evidence at trial, and the like.⁷⁴ Thus, we see that Rule 804(b)(3) requires judges to undertake both an atomistic inquiry and a holistic one before admitting a statement under this hearsay exception.

C. Dishonesty Crimes Offered to Impeach Credibility

Another place in the Federal Rules in which judges are required to assess evidence atomistically is Rule 609(a)(2). This rule governs the admission of evidence designed to impeach a witness’s credibility by showing that the witness has been convicted of a crime that involved dishonesty or false statement.⁷⁵ It is an unusual rule, in that it is perhaps the only place in the Rules that denies judges

71. *Williamson*, 512 U.S. at 604 (noting that the question of whether a reasonable person would not have made the statement unless believing it was true “can only be answered in light of all the surrounding circumstances”).

72. FED. R. EVID. 804(b)(3)(B). Prior to 2010, the rule required corroboration only when the statement was exculpatory for the defendant. In 2010, the rule was made symmetrical; it now applies to all uses within criminal cases of statements against interest that expose the declarant to criminal liability. FED. R. EVID. 804 advisory committee’s note.

73. *See, e.g.*, *United States v. Barone*, 114 F.3d 1284, 1300 (1st Cir. 1997) (stating that the corroboration required by 804(b)(3) need not be “independent evidence supporting the truth of the matters asserted by the hearsay statements”).

74. The Advisory Committee’s note to the 2010 Amendment to the rule, however, takes issue with the way some courts have turned to an assessment of the credibility of the hearsay witness to judge whether the corroboration requirement has been met. Credibility, the Advisory Committee says, “is not a proper factor for the court to consider” in its corroboration inquiry, because to do so “would usurp the jury’s role.” FED. R. EVID. 804 advisory committee’s note. Thus, courts can look at circumstances and other independent corroborating evidence, but they are not to determine trustworthiness by assessing the declarant’s credibility.

75. FED. R. EVID. 609(a)(2).

any discretion in deciding whether or not to admit evidence that falls within the Rule's purview. Typically, Rule 403, which permits judges to exclude evidence if its probative value is substantially outweighed by its prejudicial effect or its potential to mislead the jury or waste time, is an envelope wrapped around all the other rules, allowing judges to exclude on Rule 403 grounds a piece of evidence admissible under some other rule. But Rule 609(a)(2) declares that evidence of a witness's conviction of a crime involving a dishonest act or false statement "*must* be admitted"⁷⁶ if offered to impeach a witness; earlier iterations of the Rule used the slightly more ambiguous "shall be admitted."⁷⁷ Courts have interpreted this strong language as a mandate and concluded that the balancing provisions of Rule 403 do not apply to evidence of this type.⁷⁸ Thus, even if the judge believes that evidence of a witness's dishonesty-related conviction is substantially more prejudicial than probative, she *must* admit it under the Rule. To put it differently, the judge is simply not permitted to analyze the piece of evidence holistically. Even if the evidence is cumulative, or its probative value is reduced to nearly zero because of the existence of other evidence, a judge must still admit the evidence. She may not assess the other evidence in the case and its ability to establish the same point, nor can she take its potentially prejudicial effect of this evidence into account. The inquiry is squarely atomistic: Does this conviction, evaluated in isolation, fit the contours of the Rule? If so, as the Rule clearly states, it "must be admitted."⁷⁹

III. HOLISM IN THE FEDERAL RULES OF EVIDENCE

Our discussion of atomism within the Rules has already touched somewhat on rules that tilt toward holism, as well as some areas where the Rules provide little information about either which approach to take or to what extent. It is nonetheless worthwhile to take a brief look at several places within the Federal Rules where holism is either explicitly permitted or required. This is by no means

76. *Id.* (emphasis added).

77. *See, e.g.*, FED. R. EVID. 609(a)(2) (repealed 2011). The change from "shall" to "must" occurred through the Federal Rules Restyling project, an effort to make the Rules clearer and easier to understand, without changing their substantive meaning (much). *See* Davison M. Douglas et al., Symposium, *The Restyled Federal Rules of Evidence*, 53 WM. & MARY L. REV. 1435 (2012); *Restyled Rules of Evidence*, U.S. COURTS (Sept. 2011), http://www.uscourts.gov/News/TheThirdBranch/11-09-01/Restyled_Rules_of_Evidence.aspx.

78. *See, e.g.*, *Green v. Bock Laundry Mach. Co.*, 490 U.S. 504, 525–26 (1989) ("With regard to subpart (2), which governs impeachment by *crimen falsi* convictions, it is widely agreed that this imperative, coupled with the absence of any balancing language, bars exercise of judicial discretion pursuant to Rule 403."); *United States v. Kuecker*, 740 F.2d 496, 501–02 (7th Cir. 1984).

79. FED. R. EVID. 609(a)(2).

a complete list but rather serves to provide examples of locations within the Rules inviting or requiring a degree of holistic analysis by the judge.

A. Conditional Relevance

The first rule worth mentioning is Rule 104(b),⁸⁰ which governs the admissibility of matters that are conditionally relevant. The entire notion of conditional relevance is an inherently holistic rule. The idea behind the Rule (much criticized by scholars) is that sometimes relevance is contingent on sufficient proof of some preliminary condition of fact, and thus, such items should be admitted only on the introduction of (or the promise to introduce) adequate proof of the conditional matter.⁸¹ This is clearly and obviously holistic because the judge must determine the relevance of one piece of evidence in relation to another. The difficulty with conditional relevance, put simply, is how to reconcile the Rule's claim that some matters are conditionally relevant with the generally atomistic approach to relevance embodied in the low relevance threshold discussed earlier in Part II.A. Despite the conceptual instability of the category of conditional relevance, judges in practice do not seem to face significant difficulties in its application.

80. See generally sources cited *supra* note 52.

81. The classic article criticizing conditional relevance is Ball, *supra* note 52. Ball argues that the idea of conditional relevance depends on a misunderstanding of relevance—the low “any tendency” standard means that anything that is conditionally relevant is in fact, already relevant, since the fact upon which it is conditionally relevant might possibly be true. See *id.* If we were to say that a warning spoken to someone were irrelevant unless the person heard it, or to put it differently, was conditionally relevant upon a showing that it was heard, we would be failing to recognize that, given that the person to whom it was spoken might have heard it, the mere fact it was said already meets the low “any tendency” standard of relevance.

However, conditional relevance has also been criticized from the opposite perspective: Once you start looking for it, you can find it absolutely everywhere. Every item of evidence depends, in part, on additional inferences and generalizations about the world which we could, theoretically, insist need to be established with specific evidence (rather than based on commonsense understandings of behavior and experience-based generalizations about the world). If the speed of the plaintiff's car at the time of an accident is at issue, is evidence that the plaintiff was speeding two miles earlier relevant? Should the defendant have to introduce evidence in support of conditional matters that strengthen the probative value—for example, the continuity of road conditions over that two mile stretch, whether the speeding was more commonplace in one location than the other, or whether plaintiff was seen speeding somewhere else before or after? So depending on how the issue is framed, conditional relevance can be found nowhere or everywhere. For some of the scholarly debate about conditional relevance, see, for example, Nance, *supra* note 52, Friedman, *supra* note 52, and Allen, *supra* note 52.

B. The Residual Exception

Another place where holism is required is Rule 807, the residual exception to the hearsay rule. This rule, designed as an escape valve to allow judges to admit reliable hearsay even if it fails to fit squarely in any other delineated exception, requires that the proffered statement be “more probative on the point for which it is offered than any other evidence that the proponent can obtain through reasonable efforts.”⁸² Thus, the judge is explicitly required to compare the item’s probative value to any other form of available proof on the question at issue. Indeed, this is perhaps the only place in the Federal Rules of Evidence where judges are affirmatively called on to imagine what other available forms of proof might have been available, what diligent investigation might have produced, and what careful investigation would have shown—that is, where judges are explicitly instructed to go beyond the expected record in imagining evidentiary alternatives.

C. Admissions by Agents and Coconspirators

Another explicitly holistic requirement in the Rules can be seen in Rule 801(d)(2), which exempts from the hearsay rule out-of-court statements made by a party that are offered against her at trial.⁸³ Such statements can include not only the party’s own statements but statements by the party’s agents as well, so long as they were made during the agency relationship and concern matters within the scope of the agency.⁸⁴ Similarly, statements by coconspirators are also permitted as admissions, so long as the statement was made “during and in furtherance of the conspiracy.”⁸⁵ Implementing this rule raises an obvious question: How can an agency relationship or the existence of the conspiracy be proved? If the statement is only admissible under this hearsay exception if such a relationship in fact exists, can the content of the statement itself be taken as evidence of the relationship? Or would proving through the statement itself the very relationship that permits the statement’s admissibility be an illegitimate form of bootstrapping?⁸⁶ The current rule clearly answers that question, drawing on and extending the Supreme Court’s reasoning in *Bourjaily v. United States*⁸⁷: “The statement must be considered but does not by itself establish” the existence of an agency relationship or a

82. FED. R. EVID. 807(a)(3).

83. FED. R. EVID. 801(d)(2)(A).

84. FED. R. EVID. 801(d)(2)(D).

85. FED. R. EVID. 801(d)(2)(E).

86. This was the issue faced in *Bourjaily v. United States*, 483 U.S. 171 (1987).

87. *See id.* at 180–81.

coconspiracy.⁸⁸ Courts must also consider matters beyond the content of the statement itself, including both the circumstances in which the statement was made and any evidence corroborating the statement or otherwise establishing the requisite relationship.⁸⁹ This requirement of some evidence beyond the contents of the statement makes the Rule modestly holistic—admissibility cannot be determined simply from the atomistic contents of the statement alone. The Advisory Committee Notes, however, make clear that there need not be genuinely independent evidence of agency or conspiracy; rather, the context in which the statement was made or even just the identity of the speaker may be sufficient if it adequately demonstrates that such a relationship exists.⁹⁰ Permitting context alone to suffice is less holistic than a requirement of independent additional evidence, but it nonetheless represents at least a weak form of holism. More generally, any requirement of corroboration⁹¹ or of preliminary foundational evidence⁹² is at least a partial form of holism.

* * *

Numerous additional examples of both atomism and holism could be described, but these suffice, I hope, to illustrate that in a number of places in the Rules, judges are permitted or required to take an atomistic approach, while in other places, an implicit or explicit holism is expected. Whether the choice of the Rules and courts to require atomism or holism in each of these circumstances is warranted or beneficial is not my point; I merely have aimed to show through relatively straightforward examples that we can see numerous aspects of both approaches throughout the Rules as written and as implemented.

But in some sense this Part may have been misleading, for the places where interpretive conventions are made explicit within the Rules are as much the exception as the rule. Much of the time, there is neither explicit language within the text of the Rule nor definitive caselaw with which to provide guidance to courts—and as we have seen, that guidance which is provided is usually quite limited in scope. In some areas, there is indeed caselaw that wrestles with the

88. FED. R. EVID. 801(d)(2).

89. See generally FED. R. EVID. 801 advisory committee's note.

90. *Id.*

91. For example, the dominant approach to statements of intent under Rule 804(b)(3) and the *Hillman* doctrine, involving a third party's actions in accordance with the speaker's claimed intent, requires corroboration as a prerequisite to admission. FED. R. EVID. 804(b)(3)(B).

92. Take, for example, Rule 901's authentication requirement. FED. R. EVID. 901(a) ("To satisfy the requirement of authenticating or identifying an item of evidence, the proponent must produce evidence sufficient to support a finding that the item is what the proponent claims it is.").

tension between atomism and holism, but the wrestling often turns out to produce more questions than answers. We turn, in the next Part, to two areas in which the Supreme Court has to a certain degree weighed in on this issue of atomism and holism. As we shall see, however, the Court's engagement with these questions has not produced a great deal of clear guidance for lower courts.

IV. ASSESSING PREJUDICE AND PROBATIVE VALUE: THE QUAGMIRE OF "EVIDENTIARY ALTERNATIVES"

The remainder of this Article looks more closely at two conceptual categories where the tension between atomism and holism poses both significant practical and theoretical problems. I look first at the problems of assessing prejudice and whether the prejudice and probative value of an item of evidence should be evaluated atomistically or holistically. The focus here is on Rule 403, a centerpiece of the Federal Rules, potentially implicated in nearly every admissibility decision judges make. Rule 403, like Rule 401, is a low-threshold evidentiary determination because the Rule is explicitly, and strongly, tilted in favor of admissibility.⁹³ Then, in Part V, I turn to the problem of assessing reliability and the thorny and practically important question of whether the reliability of expert evidence—perhaps the most significant high-threshold determination—should be determined atomistically or holistically. We will see that for low-threshold evidentiary determinations, holism provides a check on strategic behavior by the parties but at the risk of impinging too much on parties' ability to tell their story in their preferred manner. By contrast, for high-threshold determinations, atomism may lead judges to excessively narrow inquiries that risk conflating admissibility and sufficiency, whereas holism may leave judges without clear guideposts through which to assess whether the high threshold has legitimately been met.

Rule 403 is a keystone of the Rules. This rule grants the trial judge the authority to exclude relevant evidence on a variety of grounds, the most important of which is that the item's "probative value is substantially outweighed by a danger of . . . unfair prejudice."⁹⁴ Rule 403 calls for judges to perform a balancing test and weigh probative value against a variety of other factors, including, in addition to unfair prejudice, the risk of "misleading the jury . . . , wasting time, or needlessly presenting cumulative evidence."⁹⁵ Rule 403 applies to nearly all evidence—even if the evidence is admissible under another rule, with very few ex-

93. FED. R. EVID. 403.

94. *Id.*

95. *Id.*

ceptions,⁹⁶ judges are permitted and indeed expected (on objection) also to consider whether it passes muster under Rule 403. Note that Rule 403's scales are purposefully not created equal. Courts are told to exclude evidence under the Rule only if the probative value is substantially outweighed by one or more of the dangers listed in the Rule. If the probative value and the danger are equal, the judge should admit the evidence. Rule 403 is thus explicitly designed to favor admissibility; it is, therefore, a low-threshold evidentiary determination, both because it is tilted towards admissibility and because it places the burden of establishing the danger on the party that wishes to exclude.

But the language of the Rule itself provides little guidance vis-à-vis atomism and holism. In attempting to balance prejudice and probative value, how should judges apply Rule 403? Should they assess a piece of evidence's probative value and then examine its potential prejudice, looking in both instances to the piece of evidence standing alone? Or should both prejudice and probative value be assessed holistically and contextually, in relation to other evidentiary alternatives? While the language of the Rule itself is silent on this point, the Supreme Court confronted precisely this issue in *Old Chief v. United States*.⁹⁷ *Old Chief* involved a defendant, Johnny Lynn Old Chief, who was charged with assault with a dangerous weapon and with using a firearm for a crime of violence.⁹⁸ Because the defendant had previously been convicted of another felony (assault causing serious bodily injury), he was also charged with being a felon in possession of a firearm, a violation of 18 U.S.C. § 922(g)(1).⁹⁹ The defendant wished to stipulate that he had indeed been convicted in the past of a felony of the sort delineated in the felon-in-possession statute. He offered such a stipulation in an effort to prohibit the government from introducing any specific facts about the prior felony, including its name.¹⁰⁰ His concern was that if the jury learned the name or details

96. The only absolute exception is for dishonesty crimes offered to impeach a witness. See FED. R. EVID. 609(a)(2) and discussion, *supra* Part II.C.

97. 519 U.S. 172 (1997).

98. *Id.* at 174.

99. *Id.* at 174–75.

100. *Id.* at 175. In fact, there is every reason to believe in this case that the knowledge of the name of the prior felony could have had a significant improper influence on the jury. The facts of *Old Chief*—glaringly missing from the Court's opinion—are striking on this score. Old Chief and a couple of friends were drinking and went to a bar, where Old Chief got into a fight with another man who was the undisputed aggressor. During the course of the fight, a gun (not belonging to Old Chief) was fired into the air. No one was injured. The testimony was in dispute over who fired the gun. See Opening Brief of Defendant-Appellant at 5–8, *United States v. Old Chief*, 85 F.3d 638 (9th Cir. 1996) (No. 95-30283), 1995 WL 17065406, at *5–8; D. Michael Risinger, *John Henry Wigmore, Johnny Lynn Old Chief, and "Legitimate Moral Force": Keeping the Courtroom Safe for Heartstrings and Gore*, 49 HASTINGS L.J. 403, 446–48 (1998). The previous felony was also a violent assault, which in that instance resulted in serious injury to the victim. Knowing that Old Chief had previously

of his earlier crime, it might take this prior conviction as evidence that he had a propensity to commit assaults, and hence think it more likely that he committed the assault with which he was now charged.¹⁰¹ Alternatively, the jury might take the details of the prior crime as evidence that Johnny Old Chief was simply a bad man with a bad character, deserving of punishment or preventative incarceration regardless of his factual guilt or innocence in the present case.¹⁰² Evidence offered directly in support of either such inference would have been excluded under the Rules as impermissible character evidence.¹⁰³ Using a stipulation instead of naming the earlier felony would have established one of the matters that the prosecution had to prove—namely that the defendant had the status of felon and hence would be guilty of unlawful possession of a firearm, if found to have had a firearm in the present instance—without subjecting him to the unfair prejudice that could result from the presentation of any descriptive details of the earlier crime.¹⁰⁴

The assistant U.S. Attorney refused to join in the stipulation, and the trial court ruled that the prosecution had the right to prove its case in the way it saw fit. At trial, over Old Chief's renewed objection, the prosecutor introduced the judgment of conviction, which included a one-sentence description of the prior crime and the punishment imposed.¹⁰⁵ The Ninth Circuit affirmed the trial court's ruling, finding that "the government is entitled to prove a prior felony offense through introduction of probative evidence," and ruling that the trial court had not abused its discretion by permitting the introduction of the prior conviction.¹⁰⁶

Thus, the narrow issue before the Supreme Court was whether the admission of the judgment of conviction, including the name of the crime, was an abuse of discretion given the defendant's willingness to stipulate to the existence of an unnamed prior felony conviction. But the broader question, never before

committed a violent assault might well have made the jury more persuaded that he was the one who fired the gunshot in this instance, even though the previous conviction could not have been legitimately admitted for this propensity purpose. Risinger, *supra*, at 450–51.

101. *Old Chief*, 519 U.S. at 175, 180–81.

102. *Id.* at 180–81.

103. FED. R. EVID. 404(a).

104. The Advisory Committee's Notes to Rule 403 define unfair prejudice as "an undue tendency to suggest decision on an improper basis, commonly, though not necessarily, an emotional one." FED. R. EVID. 403 advisory committee's notes. In a detailed exploration of Rule 403, Victor Gold claims that "evidence is unfairly prejudicial to the extent it has a tendency to cause the trier of fact to commit inferential error." Victor J. Gold, *Federal Rule of Evidence 403: Observations on the Nature of Unfairly Prejudicial Evidence*, 58 WASH. L. REV. 497, 503 (1983); see also Victor J. Gold, *Limiting Judicial Discretion to Exclude Prejudicial Evidence*, 18 U.C. DAVIS L. REV. 59, 73 (1984).

105. *Old Chief*, 519 U.S. at 177.

106. *United States v. Old Chief*, No. 94-30277, 1995 U.S. App. LEXIS 13541, at *3–4 (9th Cir. May 31, 1995).

addressed by the Supreme Court, was how courts ought to understand the application of Rule 403. Should they evaluate the prejudice and probative value of an item of evidence atomistically, or should they look beyond the particular item and assess both prejudice and probative value contextually? Though Justice Souter did not use the vocabulary of atomism and holism, this is precisely the issue he confronted:

As for the analytical method to be used in Rule 403 balancing, two basic possibilities present themselves. An item of evidence might be viewed as an island, with estimates of its own probative value and unfairly prejudicial risk the sole reference points in deciding whether the danger substantially outweighs the value and whether the evidence ought to be excluded. Or the question of admissibility might be seen as inviting further comparisons to take account of the full evidentiary context of the case as the court understands it when the ruling must be made.¹⁰⁷

The majority concluded that the holistic approach was superior,¹⁰⁸ calling on judges to “evaluate the degrees of probative value and unfair prejudice not only for the item in question but for any actually available substitutes as well.”¹⁰⁹ If some other item of evidence was equally probative or nearly so, but less prejudicial, “sound judicial discretion would discount” the probative value of the first piece of evidence and “exclude it if its discounted probative value were substantially outweighed by unfairly prejudicial risk.”¹¹⁰ Thus the Court thought that it was the marginal probative value of an item of evidence that mattered in a Rule 403 analysis, not the inherent probative value analyzed in the absence of all other evidence. By contrast, the opinion implied that assessing relevance under Rule 401 is appropriately an atomistic inquiry.¹¹¹ If an item is relevant, it remains so no matter what other evidence is available to prove the same point. But unlike relevance, probative value (and, though the opinion was less explicit on this point, prejudice too) is relational and ought to be evaluated looking holistically at the entire (available) evidentiary spectrum.

Justice Souter’s justification for the superiority of a holistic approach to Rule 403 was the need to control adversary excesses and to reign in unduly strategic behavior. He wrote:

107. *Old Chief*, 519 U.S. at 182.

108. *Id.* at 184–85.

109. *Id.* at 182.

110. *Id.* at 183.

111. *See id.* at 179.

[An atomistic approach to the rule] is open to a very telling objection. That reading would leave the party offering evidence with the option to structure a trial in whatever way would produce the maximum unfair prejudice consistent with relevance. He could choose the available alternative carrying the greatest threat of improper influence, despite the availability of less prejudicial but equally probative evidence. . . . This would be a strange rule. It would be very odd for the law of evidence to recognize the danger of unfair prejudice only to confer such a degree of autonomy on the party subject to temptation, and the Rules of Evidence are not so odd.¹¹²

This analysis is worth examining in somewhat more detail. Parties often want to introduce evidence that is prejudicial to the opposing party to the extent the court permits them to do so. But even an atomistic approach to Rule 403 could limit parties' efforts to maximize the quantity of prejudicial evidence offered. After all, if a party attempted to introduce prejudicial evidence of only slight probative value, the trial judge would clearly have the power to exclude it, even applying Rule 403 to that item in isolation. The Court's concern was that when a party might prove a relevant matter in multiple ways, it might strategically choose the most prejudicial form of proof, not because it is any more probative on the relevant point than some alternative way of proving the same thing, but precisely because of its prejudicial dimensions. Indeed, the claim of legitimate probative value may sometimes be little more than pretext. Justice Souter therefore sought to forestall parties from choosing prejudicial evidence—evidence that encourages the factfinder inappropriately to make a decision based on emotion, or invites the factfinder to make a prohibited inference, or plays to cognitive biases in some way—in lieu of perfectly adequate alternatives that are not unfairly prejudicial. If, given the availability of alternative evidence, the marginal or incremental probative value of the new item of evidence approaches zero, why should the jury be allowed to hear it, if it risks unfairly prejudicing them? Surely if we take the concern about prejudice at all seriously, a holistic approach to the Rule strikes a better balance—as Justice Souter recognized.

Under the facts of *Old Chief*, this kind of holism is easy. Johnny Lynn Old Chief's stipulation, or more precisely admission (since the proposed stipulation was not agreed to by the prosecution), that the prior conviction element was satisfied would have been, as the Court put it, "seemingly conclusive evidence" on that point.¹¹³ Given such an admission, the added probative value of introducing the name of the prior crime was nil, because the only relevant aspect of the name of

112. *Id.* at 183–84.

113. *Id.* at 186.

the prior offense was that it established defendant's status as a felon. Alerting the jury to the specifics of the prior crime did risk unfairly prejudicing the defendant, however, especially given the substantial overlap between the prior crime and the present charges. Providing specific information might have encouraged the jury to make an inference about Old Chief's propensity to assault, an inference explicitly prohibited by our evidence law. Therefore, the Court was faced with a positive potential for prejudice and a marginal probative value approaching zero: Under a holistic analysis, exclusion was clearly appropriate.

But about halfway through, the opinion begins almost to second-guess itself. On the one hand, Justice Souter explicitly embraced the notion that probative value and prejudice should be evaluated holistically in light of evidentiary alternatives. But at the same time, Justice Souter took pains to draw the case's holding in exceedingly narrow terms. In a footnote, he wrote, "While our discussion has been general because of the general wording of Rule 403, our holding is limited to cases involving proof of felon status."¹¹⁴ Why so? Nothing in his basic defense of holistic Rule 403 reasoning suggests a justification for this limitation. And yet, as the remarkable second half of the opinion makes clear, something about holism made the Court anxious; indeed, the latter part of the opinion comes close to unraveling the first.

By the end of the opinion, the holism the Court first appeared to support has been tremendously eroded, transformed from a general approach to Rule 403 into a rare judicial intervention into a party's more general right to choose its evidence, almost an anomaly. The final part of the opinion is an eloquent paean to parties' evidentiary autonomy. Justice Souter emphasized the critical need for parties to be permitted to structure and present evidence in the manner they deem fit. He insisted on the importance of allowing the party to tell the jury a complete and convincing narrative, and he positively celebrated the affective and moral dimension of narrative. Parties need to be able to "tell[] a colorful story with descriptive richness" because evidence "has force beyond any linear scheme of reasoning, and as its pieces come together a narrative gains momentum, with power not only to support conclusions but to sustain the willingness of jurors to draw the inferences, whatever they may be, necessary to reach an honest verdict."¹¹⁵ In a remarkable sentence, he writes that a party may legitimately present evidence "as much to tell a story of guiltiness as to support an inference of guilt."¹¹⁶ Criminal convictions, he recognized, need to be built out of personal

114. *Id.* at 183 n.7.

115. *Id.* at 187.

116. *Id.* at 188.

conviction, and this involves not only argument and reason but also the “persuasive power of the concrete and particular.”¹¹⁷ Judges should thus intervene in parties’ evidentiary choices with great caution, and must respect and nourish the legitimate moral force of stories well told.

Old Chief, then, ends up sending a remarkably mixed message to trial courts: Apply Rule 403 holistically, but do so with great respect for a party’s legitimate, albeit limited, power to choose the specific, concrete, vivid, and compelling ways she wants to prove her case. *Old Chief*’s Janus-like approach leaves trial courts, at best, with a heightened appreciation of two somewhat contradictory aspects of their role in assessing Rule 403 objections. Souter recognized, in essence, the twin dynamics of atomism and holism in low-evidentiary threshold circumstances. He saw, on the one hand, the need to curb strategic and possibly pretextual use of unfairly prejudicial evidence and recognized that treating evidence under Rule 403 as an island—that is to say, atomistically—exacerbates this worry. On the other hand, he also recognized the importance of a narrative conception of relevance¹¹⁸ coupled with a structural respect for a party’s decisions about how best to prove its case—and he saw that too much holism may lead judges to micromanage the party’s legitimate need to present a convincing and coherent story of guiltiness. By the end of the opinion, Justice Souter has identified these twin dangers but has not succeeded in providing any particular advice on how to reconcile the tension between them. Therefore, unsurprisingly, outside of the context of status offenses like felon in possession, *Old Chief* does not seem to have prompted significant changes in how judges make assessments under Rule 403¹¹⁹ and leaves numerous questions about Rule 403 determinations lingering. What would it mean to take holism seriously in the context of Rule 403? What would be the consequences of taking Souter’s logic of holism to its natural conclusions? What kinds of evidence would judges find themselves analyzing, how would they go about it, and what would the effects be on the dynamics of the trial?

A. Cumulative Evidence That Has Some Risk of Prejudice

One category of evidence that would be affected by a more holistic approach to Rule 403 would be evidence whose probative value significantly or completely overlaps with evidence already introduced and which also carries with it some

117. *Id.* at 187.

118. On narrative relevance, see LEMPERT ET AL., *supra* note 24, at 224–26.

119. There are occasional exceptions. *See, e.g.,* United States v. Merino-Balderrama, 146 F.3d 758 (9th Cir. 1998); United States v. Nachamie, 101 F. Supp. 2d 134 (S.D.N.Y. 2000).

danger of unfair prejudice. This is, of course, simply a generalization of what happened in *Old Chief*: The prosecution wished to introduce evidence that, while relevant, was cumulative given Johnny Old Chief's admission. In cases like these, if a judge analyzes the evidence holistically, at some point the marginal probative value becomes low enough that it is outweighed by the danger of prejudice, even given the admissibility-favoring tilt of Rule 403.

By generalizing this category beyond *Old Chief*, we can see that it could also apply in situations where the probative value of the additional item of evidence did not approach zero; that is, when the multiple pieces of evidence were not near-perfect substitutes for one another, as they were in *Old Chief*. For example, suppose that a defendant in a grand larceny case has six prior convictions for an array of felonies. If the defendant testifies on her own behalf, the prior convictions become relevant for impeaching the defendant's credibility as a witness. They simultaneously create the risk of unfair prejudice, however, as the factfinder might believe that the prior felonies suggest the defendant has a propensity for criminal activity and hence was more likely to have committed the crime for which she stands trial. The more similar the prior crimes are to the one presently charged, the greater this risk of prejudice.

If the judge assessed the admissibility of the prior convictions atomistically, he would evaluate them one at a time, and his decision to admit or exclude one would have no impact on his analysis of the next. If the six prior convictions were all for identical crimes, an atomistic analysis would therefore presumably mean that all six would be admitted or all six would be excluded, as the balance between prejudice and probative value would be identical for each; to reach different admissibility decisions for each would be irrational on an entirely atomistic approach. By contrast, for six identical prior convictions, a holistic approach might or might not yield different results. A judge could decide that the incremental probative value of, say, the fourth, fifth and sixth convictions was ever decreasing, as the factfinder already had substantial evidence that the defendant was a recidivist felon, while continually emphasizing the defendant's criminal past might intensify the (prohibited) character inference. Thus, a more holistically inclined judge might admit some, but not all, of the convictions under Rule 609(a)(1). On the other hand, the judge might reason that while the incremental probative value of the last few convictions was low, so was the incremental prejudice, as the risk of a propensity inference might also level off after the first convictions were

introduced. Thus, for multiple identical crimes, a holistic approach would change the frame of analysis, but it might or might not change the admissibility result.¹²⁰

If we complicate the example somewhat and suppose that the six prior convictions were for different crimes,¹²¹ a holistic analysis should increase the likelihood that the judge would exclude any convictions for crimes substantially similar to the one presently charged. A judge might well do this even under an atomistic inquiry, finding that, standing alone, the probative value of a particular conviction was outweighed by the danger of prejudice.¹²² But if the only legitimate purpose for admitting evidence of prior crimes under Rule 609(a)(1) is to suggest that this defendant in his role as witness is less credible than a witness who lacks a criminal record, then once a judge has admitted one or several criminal convictions, the incremental probative value of another conviction for the legitimate inference is slight, whereas the prejudice of similar-crime convictions is high, especially given the danger that the jury might make the prohibited propensity inference. Thus, a holistic approach ought to lead judges to exclude more similar crimes evidence under Rule 609(a)(1) than an atomistic inquiry under the Rule.¹²³

Similarly, when a party wishes to impeach a witness by asking on cross examination about specific prior actions that suggest the witness's character for dishonesty under Rule 608(b), a holistic approach should lead a judge to more frequent exclusions on a similar logic.¹²⁴ Like convictions under Rule 609(a)(1), evidence of specific acts that suggest dishonesty may risk unfairly prejudicing the defendant by suggesting to the factfinder that the defendant has a generally bad character and hence is not simply more likely to be lying on the stand (a permitted inference under the Rules) but is also more likely to have committed the

120. Though they are guided by nothing beyond convention, many judges, when faced with a witness with multiple convictions, certainly do elect to admit some and exclude others, using an implicit form of holism.

121. Assume for ease of explanation that none is a dishonesty crime for which admission is mandated under FED. R. EVID. 609(a)(2).

122. Note that under Rule 609(a)(1) defendants are entitled to the benefit of a special balancing test in which the probative value of the evidence must be outweighed by its prejudicial effect; this test is explicitly tilted more in favor of exclusion than is the traditional Rule 403 test. FED. R. EVID. 609(b)(1). It is, therefore, less of a low-threshold rule, though it does not completely reverse the Rule 403 test in that the probative value simply has to outweigh the prejudicial effect (rather than substantially outweigh it). In fact, I would suggest that some judges approach Rule 609(a)(1) as if it were a relatively low-threshold rule, while others treat it as a high-threshold rule.

123. I lack empirical evidence on this point, but anecdotal evidence suggests that many judges do approach the Rule holistically.

124. For both Rules 608 and 609, a similar analysis could apply to a nonparty witness, but the prejudice accruing to the defendant from the witness' prior crimes or prior bad acts is clearly lower. It may not be zero, however, for a jury might infer that if the witness has a propensity to commit bad acts or crimes, so might the defendant because she befriends such criminals, or at least calls them to testify on her behalf.

charged act (a prohibited propensity inference). Though reasonable judges could disagree about incremental probative value and incremental prejudice, an approach that focuses on the relative probative and prejudicial values is likely to curtail the prosecution's questioning sooner. If the specific act that suggests untruthfulness bears any resemblance to the alleged facts in the present charge, this would increase the prejudicial value and make exclusion still more likely under a holistic approach, once some specific-act evidence has been permitted. In both of these examples, holism would be likely to lead to more exclusion of the evidence and slightly more robust and managerial control of the evidentiary inputs by the judge.

Thus, one consequence of taking a holistic approach to Rule 403 would be to increase, at the margin, judicial limits on certain kinds of impeachment evidence, especially when offered in relation to testifying defendants. Note that for repetitive evidence that is not prejudicial, another prong of Rule 403 permits exclusion; both "waste of time" and "[needless presentation of] cumulative evidence" are legitimate grounds for exclusion.¹²⁵ Note, further, that this second ground in particular is inherently and necessarily holistic: Evidence cannot be cumulative unless it is assessed in relation to that which has already been introduced.

Even with these simplistic examples, we can also see that a party who expects a judge to make these determinations holistically might strategically try to game the timing or content of its evidence. For example, suppose the defendant has been convicted of six prior crimes, only one of which bears a strong similarity to the present charges. The prosecution might attempt first to introduce the prior conviction with the most similarity to the present charges because its incremental probative value would then be highest. If the judge nonetheless excludes this conviction as excessively prejudicial, the prosecution can move on to the next one. If the judge allows the first conviction, the prosecution has succeeded in gaining admission for the conviction likely to influence the factfinder the most, even though some of the influence is technically prohibited (and subject to a limiting instruction upon request). Even if some of the other convictions are excluded, the prosecution has been allowed to introduce the most harmful one. Similarly, a prosecutor might introduce the most damaging questions about prior bad acts first in order to maximize the chance they will be allowed. Presumably, a defendant's response to both of these moves would be to attempt to get admissibility resolved *in limine*, but judges are often reluctant to determine precisely what impeachment evidence they will allow prior to hearing the actual trial tes-

125. FED. R. EVID. 403.

timony.¹²⁶ Thus, it is clear that the temporal sequence of a trial may have an effect on how holism can be implemented. Unless a judge insists on hearing all of the potential evidence before ruling on any piece of it, holistic analysis by the judge will inevitably be partial, as it will depend on what has already been introduced, and parties will strategically sequence their evidence accordingly.

B. Evidence of Undisputed Facts and Issues

Taking holism seriously in the context of Rule 403 would also recast in significant ways the judicial treatment of prejudicial evidence offered to prove issues not in dispute. In *Old Chief*, the majority took great pains to emphasize that, despite its holding, “a criminal defendant may not stipulate or admit his way out of the full evidentiary force of the case as the Government chooses to present it.”¹²⁷ This issue arises whenever a defendant might want to admit some element of what needs to be proved in order to forestall the prosecution from adducing proof on that point that might prejudice the jury against her. For example, in a child pornography case, a defendant might want to admit that the materials in question are obscene while denying possession, and thus preclude the jury from viewing the materials themselves.¹²⁸ Similarly, when charged with a violent crime, a defendant might want to admit that the perpetrator, whoever it might have been, had the requisite intent in order to block the prosecution from offering detailed, gory images of the violence done to the victim in order to establish intent.¹²⁹ If the judge assesses the evidence under Rule 403 atomistically, the evi-

126. See, e.g., *Luce v. United States*, 469 U.S. 38 (1984). *Luce* involved a defendant who wanted to know whether his prior convictions would be admissible before deciding whether to testify. The Supreme Court held that if the trial court chose not to rule *in limine*, the only way to preserve the Rule 609 issue for appeal was for the defendant to take the stand. *Id.* at 43. Relevant for our purposes, the Court held that judges could well choose to wait until trial to make Rule 609 rulings, as the reviewing court “must know the precise nature of the defendant’s testimony, which is unknowable when, as here, the defendant does not testify.” *Id.* at 41.

127. *Old Chief v. United States*, 519 U.S. 172, 186–87 (1997).

128. For recent cases where the defendant has unsuccessfully attempted such a maneuver, see, for example, *United States v. Becht*, 267 F.3d 767 (8th Cir. 2001), *United States v. Campos*, 221 F.3d 1143 (10th Cir. 2000), *United States v. Hay*, 231 F.3d 630 (9th Cir. 2000), and *United States v. Caldwell*, No. 97-5618, 1999 U.S. App. LEXIS 7417 (6th Cir. Apr. 13, 1999). *But cf.* *United States v. Merino-Balderrama*, 146 F.3d 758 (9th Cir. 1998).

129. In an insightful piece on *Old Chief*, D. Michael Risinger made a similar argument. Examining both evidence of elements not in dispute and, more generally, evidence of “heartstrings and gore,” Risinger criticized the second half of the majority opinion in *Old Chief* and argues that there is no satisfying or satisfactory justification for permitting either evidence on issues not in dispute, or evidence with no rational probative force. However, because he focused substantially on the second half of the opinion, Risinger did not explore the way that a holistic approach to Rule 403 would address this problem. See generally Risinger, *supra* note 100.

dence may well pass muster. After all, the prosecution has both an obligation to prove every element of the crime and a right to do so, within the constraints of the Rules, in whatever manner it sees fit. In fact, this is generally what occurs: While judges sometimes make holistic gestures and exclude some fraction of the proffered gory photographs as cumulative or excessively prejudicial, they typically admit many such images, sometimes without any clear relevance rationale at all, or on the theory that the images show that the crime was committed with the requisite intent, even if the perpetrator's *mens rea* is undisputed.¹³⁰

The situation would look different if Rule 403 were interpreted holistically. Given a strongly worded, unambiguous admission on the part of the defendant on whatever element the evidence tended to prove, the added probative value of the undisputed evidence would be zero or extremely low. The potential for prejudice, however, would be substantial; especially in the case of the gory crime-scene photographs, jurors' disgust might lead them, at worst, simply to want someone, anyone, to pay for the crime regardless of guilt. More realistically, they might reduce their so-called regret matrix; that is, viewing these images might decrease the quantum of regret they would feel about getting the wrong result, given the heinousness of the crime and the strong desire to punish someone for it.¹³¹ When examined holistically, then, the marginal probative value of such evidence would frequently be lower than its potential for unfair prejudice.¹³²

If we imagine still more holism in our approach to Rule 403, it could dramatically change the judge's role. Suppose two people came across a dead body at the same time, one of them a neighbor and acquaintance, the other the deceased's daughter. Under a holistic approach to Rule 403, could or should a judge prevent the party from offering the daughter's testimony, if the neighbor could present all of the same information with less emotional impact? Is the likely emotional impact of the daughter's testimony, once disaggregated from the substantive information that either witness could provide, a form of unfair prejudice? Or is it precisely part of what Justice Souter meant about the need for powerful and vivid narrative?¹³³ Or, to take the point even farther, could a holistic judge compare items of evidence not merely to one another but also to those evidentiary alternatives that the party might have gone out to seek but did not? Rule 807, the

130. *See id.* at 429–31.

131. On the notion of a regret matrix, see Lempert, *supra* note 50. *See also* LEMPERT ET AL., *supra* note 24, at 234–39.

132. This raises the issue of whether binding stipulations or judicial admissions are constitutionally permissible in criminal cases. If not, a prosecutor might legitimately claim that she should be able to present specific evidence on the issue, in case the jury might decide, in the absence of such concrete, particular evidence, to disavow the stipulation.

133. *See generally* *Old Chief v. United States*, 519 U.S. 172 (1997).

residual hearsay exception, invites judges to undertake such an inquiry; how would the judge's role change if this were a more typical part of her assessment of evidence? Of course, these last two examples of holism in action are probably fanciful, given our sense of the respective roles of the parties and the judge. But it is worth making clear that such a substantial degree of judicial intervention in a party's process of presenting proof violates not our rules but merely our subarticulate conventions.

Still, these extreme examples help illustrate a key point: A greater use of holism for low-threshold evidentiary determinations would increase judicial control over the introduction of evidence and process of proof. If courts approached it more holistically, Rule 403 would become a still more powerful tool through which judges could exercise control over parties' decisions about how to prove their cases. Whether this increased control is thought to be helpful or harmful depends largely on the extent to which we suspect that parties' decisions about evidence are strategically designed to evade the constraints imposed by the Rules. The more we fear that attorneys purposefully introduce highly prejudicial evidence in order to invite prohibited inferences by the jury—whether to suggest bad character, to play to the factfinder's emotion in an unreasonable way, to invite inferences that are not in fact supported by other evidence, or to mislead juries in any other way—the more attractive an increased degree of holism (and judicial control) will be, at least for low-threshold evidentiary determinations. By contrast, the more we think that judicial holism risks keeping genuinely probative evidence from the jury, or that it inappropriately lets the judge substitute her judgment about probative value for the factfinder's, the less attractive holism appears.

More generally, greater holism in the context of Rule 403 might have a transforming effect on what we might loosely call the judicial cast of mind. If judges were to take *Old Chief* to its extreme, it might invite a quite different kind of judging.¹³⁴ Whether a more activist, managerial judiciary would lead to better outcomes—either in the sense of more accurate jury determinations or in the sense of a process that participants, or the polis, subjectively perceive as fairer—must remain an open question. Still, for those who are critical of the potential irrationality of jury decisionmaking but recognize the practical political difficulties of eliminating or even reforming the jury process, increased holism for low-threshold determinations could be quite attractive: It offers a judicial procedural change that has no formal relation to the power of juries, yet, practically

134. Perhaps we could think about the holistic judge as the evidence-oriented equivalent of the managerial judge that has received attention in civil procedure circles. See generally Judith Resnik, *Managerial Judges*, 96 HARV. L. REV. 374 (1982).

speaking, increases the judicial power to control, limit and constrain the inputs that jurors have available to them for making decisions, while also permitting the judge greater control over the adversaries as well.¹³⁵ We thus see that a change in interpretive convention could, in fact, wield substantial changes over the dynamics of the trial process and the ways that a bifurcated trial process proceeds.

V. ASSESSING RELIABILITY: ATOMISM, HOLISM, AND EXPERTS

We turn now to another setting that also raises difficult questions about the appropriate role for atomism and holism: when judges are called on to assess the admissibility of expert evidence. Expert evidence plays an increasingly significant role in modern litigation. Not only are expert witnesses called in the vast majority of trials, both civil and criminal, but in many cases, especially on the civil side, the judges' admissibility rulings about expert evidence can determine whether the case gets to the jury.¹³⁶ In toxic torts cases, for example, expert testimony may be the only possible way to establish a causal connection between a toxic tort and the alleged harm. If the expert testimony on causation is excluded as insufficiently reliable, the plaintiff lacks sufficient admissible proof of causation, and the defendant will be granted summary judgment. Expert evidence admissibility determinations are therefore not only a responsibility that judges face with great frequency, but they are frequently a particularly high-stakes evidence determination, sometimes even to the point of being case dispositive.

In addition to having high stakes, assessments of expert evidence are also high-threshold evidence determinations. In the much-discussed 1993 Supreme

135. Of course, while holism may be attractive because it increases the court's power in low-threshold circumstances, the converse is also true: Holism may risk granting the judges too much power vis-à-vis lawyers or the factfinder. Indeed, for a recent example of the potential dangers of unconstrained holism, one might look at the recent, controversial Supreme Court cases which have altered the approach to pleading under the Federal Rules of Civil Procedure by making it, in my terms, a higher-threshold determination than before, by requiring plaintiffs to establish the 'plausibility' of their claim. *See generally* *Ashcroft v. Iqbal*, 556 U.S. 662 (2009); *Bell Atl. Corp. v. Twombly*, 550 U.S. 544 (2007). After these recent cases, to survive a motion to dismiss under FED. R. CIV. P. 12(b)(6), the party must state a claim that goes beyond mere assertions or conclusions, and the court must accept that claim as facially plausible. But what does plausible mean exactly and how does the court know what is or is not plausible? This inchoate standard invites lower courts to engage in a holistic analysis, but because this inquiry occurs prior to discovery and before the actual introduction of evidence, this holism rests almost entirely on the judge's intuition and nearly unbounded discretion.

136. Indeed, in the Supreme Court's expert evidence trilogy of the 1990s, all three cases involved expert evidence whose exclusion was case-dispositive. *See* *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999); *Gen. Elec. Co. v. Joiner*, 522 U.S. 136 (1997); *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579 (1993).

Court case, *Daubert v. Merrell Dow Pharmaceuticals*,¹³⁷ the Court affirmed the need for trial courts to act as gatekeepers with respect to scientific evidence, to assure that the scientific information presented to a jury is adequately valid and reliable. The Court explained that “[p]roposed [scientific] testimony must be supported by appropriate validation—*i.e.*, ‘good grounds,’ based on what is known,”¹³⁸ and that “[i]n a case involving scientific evidence, *evidentiary reliability* will be based on *scientific validity*.”¹³⁹ The Court provided a variety of possible criteria for determining validity, including whether the evidence has been tested, whether it has a known (and sufficiently low) error rate, whether it has undergone peer review and publication, whether there are standards governing its use and operation, and whether the method or technique used is generally accepted by the relevant scientific community.¹⁴⁰ For our purposes, the details or legitimacy of the various criteria are not important; the key point is that *Daubert* (and the Federal Rules) in essence makes reliability a prerequisite for admissibility.¹⁴¹ If expert evidence is challenged, the proffering party must meet the burden of establishing that the expert evidence is adequately reliable to warrant admission. While the Court in *Daubert* made clear that determining reliability is a Rule 104(a) question—a preliminary question to be determined by the judge by a preponderance of the evidence—that nod to a standard of proof provides virtually no guidance for judges to determine just how reliable is reliable enough, or just how stringent their evaluation ought to be. Should judges need to find by a preponderance that the evidence is extremely reliable, or only that it is plausibly reliable? Conceptually, *Daubert* asks judges to walk an awkward tightrope of protecting juries from unreliable expert evidence without necessarily choosing which side’s experts have it right. If the *Daubert* threshold is too low, it raises the specter of so-called junk science leading scientifically naïve juries astray.¹⁴² If the *Daubert* threshold for admissibility is too high, it leads the court to substitute its judgment for the jury, even when both sides’ experts have scientifically plausible claims. The conceptual middle ground involves recognizing that “[t]he evidentiary requirement of reliability is lower than the merits standard of correctness,”¹⁴³ but

137. 509 U.S. 579.

138. *Id.* at 590.

139. *Id.* at 591 n.9.

140. *See id.* at 593–94.

141. Though *Daubert* discussed only scientific evidence, the need for judges to engage in gatekeeping to assess reliability was extended to all forms of expert evidence in *Kumho Tire Co. v. Carmichael*, 526 U.S. 137.

142. For the classic polemic about the dangers of junk science in the courtroom, see PETER W. HUBER, *GALILEO’S REVENGE: JUNK SCIENCE IN THE COURTROOM* (1991).

143. *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 744 (3d Cir. 1994).

even this clarification does not provide much assistance in defining the reliability standard in concrete terms. Fuzzy though the standard may be, the important point is this: Wherever one draws the line, there is no doubt that a reliability inquiry of this sort produces a far higher threshold for admissibility than the “any tendency” test we saw for relevance.¹⁴⁴ In addition, both caselaw and anecdote reveal that judges applying *Daubert* and Rule 702 often engage in a substantive and searching assessment of the expert evidence’s validity.¹⁴⁵

My purpose, however, is neither to assess the merits of the *Daubert* standard nor to try to make sense of the sometimes-gossamer line between assessing reliability for admissibility purposes and assessing the correctness of the expert’s testimony. Rather, the point is to show that the tension between atomism and holism plays out dramatically in this setting as well, as judges struggle with whether the reliability of an expert’s evidence should be broken into parts and assessed item by item, or engaged with in a more holistic fashion.

A. Atomism, Holism, and Experts in *General Electric Co. v. Joiner*

The Supreme Court wrestled uncomfortably with the issue of atomism, holism, and expert testimony in the second case of the so-called *Daubert* trilogy, *General Electric Co. v. Joiner*, and I use this case as a focal point.¹⁴⁶ This case centered on Robert Joiner, an electrician and former smoker with a family history of cancer, diagnosed with small cell lung cancer at age thirty-seven. Joiner sued the manufacturers whose products, he alleged, caused his exposure to polychlorinated biphenyls (PCBs) and possibly other toxic chemicals, on the theory that his exposure to these chemicals promoted his development of cancer.¹⁴⁷ The district court granted summary judgment to the defendant because it deemed the plaintiff’s expert evidence on causation mere “subjective belief or unsupported

144. FED. R. EVID. 401.

145. *Daubert* was overtly framed as a gloss on Rule 702 and its reference to “scientific . . . knowledge.” *Daubert*, 509 U.S. at 590 (alteration in original) (internal quotation marks omitted). Subsequent to the opinion, however, Rule 702 was amended to incorporate *Daubert*’s reliability approach more explicitly. Rule 702 currently requires the expert’s testimony to be “based on sufficient facts or data” and be “the product of reliable principles and methods” that “the expert has reliably applied . . . to the facts of the case.” FED. R. EVID. 702. The degree of engagement, scrutiny, and detail judges give to reliability assessments under *Daubert* varies tremendously. Judges do need to assess reliability; they do not necessarily need to grant a request for a hearing. *See, e.g.*, *United States v. Solorio-Tafolla*, 324 F.3d 964 (8th Cir. 2003); *United States v. Turner*, 285 F.3d 909 (10th Cir. 2002). At the other extreme, some *Daubert* hearings are lengthy, multiday (or multiweek) preliminary hearings with numerous witnesses.

146. *Gen. Elec. Co. v. Joiner*, 522 U.S. 136 (1997).

147. *Id.* at 139–40.

speculation” that did not withstand scrutiny under *Daubert*.¹⁴⁸ Without admissible expert testimony on causation, the plaintiff had no case. The Eleventh Circuit reversed, finding that the district court had applied too stringent an understanding of what was meant by reliability under *Daubert*:

The admission of scientific evidence that might not yet be generally accepted in the field, however, is contingent on a trial court’s finding that such evidence is indeed scientifically legitimate, and not “junk science” or mere speculation. This gatekeeping role is simply to guard the jury from considering as proof pure speculation presented in the guise of legitimate scientifically-based expert opinion. It is not intended to turn judges into jurors or surrogate scientists. Thus, the gatekeeping responsibility of the trial courts is not to weigh or choose between conflicting scientific opinions, or to analyze and study the science in question in order to reach its own scientific conclusions from the material in the field. Rather, it is to assure that an expert’s opinions are based on relevant scientific methods, processes, and data, and not on mere speculation, and that they apply to the facts in issue. Keeping *Daubert*’s lower threshold in mind, we turn to the facts of this case.¹⁴⁹

The appellate court also thought that when expert evidence was excluded, it warranted “particularly stringent review,” albeit still under an abuse of discretion standard.¹⁵⁰ The Supreme Court, however, disagreed. Though acknowledging that the evidence ruling was indeed outcome determinative, the Court insisted that the standard of abuse of discretion was both proper and cannot operate differently for decisions to exclude than for decisions to admit: “In applying an overly ‘stringent’ standard, [the appellate court] failed to give the trial court the deference that is the hallmark of abuse-of-discretion review.”¹⁵¹

The remainder of the majority opinion examined the plaintiff’s expert evidence—and does so in a strikingly atomized fashion. Chief Justice Rehnquist, the majority’s author, wrote briefly about each of a number of studies that the plaintiffs’ experts relied on to support their conclusions, picking them off one by one, individually, and leaving him by the end of his analysis with no admissible studies that could warrant the experts’ claims.¹⁵² He briefly discusses a pair of animal studies involving PCB exposure.¹⁵³ But these involved infant mice and massive doses of PCBs injected directly into their abdominal cavity; Joiner, by

148. *Joiner v. Gen. Elec. Co.*, 864 F. Supp. 1310, 1326 (N.D. Ga. 1994).

149. *Joiner v. Gen. Elec. Co.*, 78 F.3d 524, 530 (11th Cir. 1996).

150. *Id.* at 535.

151. *Joiner*, 522 U.S. at 143.

152. *Id.* at 144–46.

153. *Id.* at 144.

contrast, was an adult human who had experienced much smaller and less direct exposure.¹⁵⁴ Moreover, the specific cancer developed by the mice in that study was an entirely different sort than Joiner's.¹⁵⁵ Given the degree of dissimilarity along all of these dimensions, the district court's rejection of the expert's reliance on these studies was not, he concludes, an abuse of discretion.¹⁵⁶

The Court then proceeded, atomistically, to examine the epidemiological studies on which the plaintiff's experts relied.¹⁵⁷ One found elevated rates of lung cancer among workers at an Italian capacitor plant who were exposed to PCBs.¹⁵⁸ The study's authors, however, did not infer a causal relationship; hence, how could the plaintiff legitimately do so?¹⁵⁹ The second study, of workers at a PCB production plant, found a slightly elevated risk of lung cancer deaths, but it did not rise to the level of statistical significance.¹⁶⁰ Two more studies were also found insufficiently supportive of the plaintiff's experts' claims. One was dinged because it did not mention PCBs but instead focused on mineral oil exposure. The fourth study failed to pass muster because, although PCB exposure was involved, and although the increase in lung cancer found in this study was statistically significant, the subjects of the study had been exposed to other potential toxins and carcinogens as well, so the role of PCBs could not easily be distilled.¹⁶¹ The flaws and limitations of each study were assessed one by one, and each was found insufficiently reliable to warrant the experts' conclusions that Joiner's cancer was promoted by his PCB exposure.¹⁶²

Justice Stevens, however, took issue with the majority opinion's atomism. He argued that the plaintiff's experts had themselves taken a more holistic approach to the body of evidence before them:

Joiner's experts used a "weight of the evidence" methodology to assess whether Joiner's exposure to transformer fluids promoted his lung cancer. They did not suggest that any one study provided adequate support for their conclusions, but instead relied on all the studies taken together (along with their interviews of Joiner and their review of his medical records). The District Court, however, examined the studies

154. *Id.*

155. *Id.*

156. *Id.* at 144–45.

157. *Id.* at 144–46.

158. *Id.* at 145.

159. *Id.*

160. *Id.*

161. *Id.* at 145–46. It appears from the appellate opinion that the plaintiff's experts referred in their testimony to a variety of other studies as well, but these other studies were not discussed in the majority opinion of the Court. See *Joiner v. Gen. Elec. Co.*, 78 F.3d 524, 533 (11th Cir. 1996).

162. *Joiner*, 522 U.S. at 144–46.

one by one and concluded that none was sufficient to show a link between PCB's and lung cancer.¹⁶³

Though Stevens did not employ the language of atomism and holism, it is hard to imagine a clearer statement of the issue. The questions are twofold. First, is it legitimate for experts to consider the evidence holistically, to weigh the evidence in its totality, and perhaps, therefore, to reach a conclusion not warranted by any single study taken alone? Second, if it is legitimate for experts to use a holistic, weight-of-the-evidence approach, then shouldn't courts assess the reliability of the experts' conclusions using a holistic approach as well? Stevens answered both questions in the affirmative:

It is not intrinsically "unscientific" for experienced professionals to arrive at a conclusion by weighing all available scientific evidence—this is not the sort of "junk science" with which *Daubert* was concerned. After all, as *Joiner* points out, the Environmental Protection Agency (EPA) uses the same methodology to assess risks Petitioners' own experts used the same scientific approach as well. And using this methodology, it would seem that an expert could reasonably have concluded that the study of workers at an Italian capacitor plant, coupled with data from Monsanto's study and other studies, raises an inference that PCB's promote lung cancer.¹⁶⁴

Therefore, Stevens was puzzled by the exclusion of the expert evidence and concludes that, at a minimum, it would not have been an abuse of discretion to permit the plaintiff's experts to testify.¹⁶⁵

What we see in *Joiner*, then, is a dispute over how judges should pursue their inquiries into the reliability of expert evidence, at least in toxic torts cases. Should they consider the evidence as a whole, asking whether the weight of the evidence in toto can support the expert's conclusion even if no single study standing alone can do so? Or should reliability be assessed in a more granular fashion, and the strengths, limitations, and flaws of each item of scientific evidence assessed individually? The majority opinion in *Joiner* stands for the notion that atomism is, if not required under *Daubert*, at least permissible. The majority's approach therefore provides the defense in toxic torts cases (and in some other settings as well) with a powerful strategy and an interpretive stance that makes what was already a high-threshold determination into an even higher one. In *Joiner*, and in an array of other cases in which experts wish to base their conclusions on a variety of different items of evidence taken together, atomism invites the judge to drill

163. *Id.* at 152–53 (Stevens, J., concurring in part and dissenting in part) (footnote omitted).

164. *Id.* at 153–54 (footnotes omitted) (citation omitted).

165. *See id.* at 155.

down to the level of the individual study, and to search for inadequacies, flaws, or analytic gaps between the study and the expert's conclusions. Unless the plaintiff's expert has a metaphoric smoking gun—that is, one or more studies that can, standing alone, support an inference of causation—atomism on the part of the judge in assessing reliability may lead straight to the exclusion of the plaintiff's experts.

By contrast, holism permits the expert to take a weight-of-the-evidence position and therefore requires the judge assessing reliability to do the same. This broader frame opens up space for a powerful additional argument by the plaintiff, who can now argue that it is the evidence, in aggregate, that supports the conclusion, rather than one study in particular. In this context, then, atomism is likely to lead to more evidentiary exclusions. Because in some cases, like *Joiner*, exclusions are case-dispositive, atomism has the consequence of keeping some cases from ever getting to the jury that would have gone to trial had the court taken a holistic approach. We therefore see the inverse dynamic of what we saw earlier, with Rule 403 determinations. With a high-threshold evidentiary determination, atomism leads to more exclusions, and locates more power in the judge, vis-à-vis the proffering party and the jury. This dynamic is precisely the opposite of what we saw with low-threshold determinations, for which atomism likely means more evidence will be deemed admissible.

To be sure, when judges post-*Joiner* choose an atomistic approach to expert evidence assessment, it may well be that the cart comes before the horse, in the sense that perhaps judges are choosing atomism in order to exclude expert evidence rather than excluding the evidence as a result of their atomistic interpretive stance. A fair reading of *Joiner* does not suggest that atomism is required of courts; only that it is permitted.¹⁶⁶ Thus, judges have a great deal of discretion about how to approach this issue, and it is certainly possible that for some judges atomism may be the rhetorical mechanism by which exclusion is justified, rather than the reason for it. Of course, the same strategic point might apply in the Rule 403 context in well: There, judges might elect holism in order to justify some particular exclusion under Rule 403, rather than excluding because of a belief that holism is the proper or appropriate approach to the question at issue. Indeed, so long as judges have substantial discretion about whether, when, and to what extent to engage in atomism or holism, it would be surprising if they did not to some extent wield this interpretive device strategically, either consciously or otherwise. But whether motivated by subarticulate convention, conscious rhetorical strategy, or whatever else, the point is that this interpretive approach has

166. See generally *id.* at 136.

structured consequences in both high-threshold and low-threshold circumstances that warrant more careful attention and analysis.

B. Atomism, Holism, and Experts in Evidence and Science

Furthermore, notwithstanding *Joiner's* embrace of atomism, holism is the more intellectually legitimate perspective for the assessment of expert evidence, both as a matter of evidence law and as a matter of scientific epistemology. At the same time, holism in the expert evidence setting also poses some serious and legitimate practical concerns. This Subpart briefly describes both why holism is the more persuasive interpretive stance with respect to the evaluation of scientific evidence, and, simultaneously, why judges who take their *Daubert* duties seriously may nonetheless understandably and legitimately be wary of it.

First, as a matter of evidence law, atomism in a high-threshold context like the reliability assessments of expert evidence threatens to conflate admissibility and sufficiency.¹⁶⁷ As we saw earlier, a truism of evidence law is that “a brick is not a wall.”¹⁶⁸ No single item of evidence need carry the case by itself. Persuasion can be built like a mosaic, one piece at a time. No individual item need be very compelling by itself, but all of them together may create a convincing whole that meets the burden of proof. In any setting with an elevated threshold for admissibility, to atomize is, by definition, to require that individual items meet that higher threshold standing alone. But why should a single brick have to become a wall in the expert evidence setting? There is no coherent reason why the existence of a reliability requirement should unmake the longstanding distinction between admissibility and sufficiency. There may be a valid argument that the overall assessment of reliability is, in essence, a sufficiency judgment (couched in admissibility terms),¹⁶⁹ but that does not mean that its constituent parts should be transformed into sufficiency judgments as well.

The conceptual problem with atomism in this context becomes rather obvious if we imagine a causation inference that has separate elements to it. Let us take

167. For helpful explorations of the dangers of conflation of admissibility and sufficiency in the expert evidence setting, see Lucinda M. Finley, *Guarding the Gate to the Courthouse: How Trial Judges Are Using Their Evidentiary Screening Role to Remake Tort Causation Rules*, 49 DEPAUL L. REV. 335 (1999), and Eileen A. Scallen & William E. Wiethoff, *The Ethos of Expert Witnesses: Confusing the Admissibility, Sufficiency and Credibility of Expert Testimony*, 49 HASTINGS L.J. 1143 (1998).

168. FED. R. EVID. 401 advisory committee's note (quoting 1 MCCORMICK ON EVIDENCE § 185, at 733 (6th ed. 2006)).

169. For a version of this argument, see Michael D. Green & Joseph Sanders, *Admissibility Versus Sufficiency: Controlling the Quality of Expert Witness Testimony in the United States* (Wake Forest Univ. Legal Studies, Working Paper No. 2016468, 2012), available at <http://ssrn.com/abstract=2016468>.

as an example the factual circumstance from another toxic torts case, *Zuchowicz v. United States*.¹⁷⁰ In this case, a dispensing pharmacy was alleged to have negligently prescribed Patricia Zuchowicz an overdose of the drug Danocrine over an extended period of time, and she claimed that this overdose caused her to develop a serious lung disease, primary pulmonary hypertension (PPH).¹⁷¹ Establishing causation therefore had three analytically separate components: first, to show that Danocrine could cause PPH (sometimes called general causation); second, to establish that exposure to Danocrine caused Patricia Zuchowicz's PPH (sometimes called specific causation); and third, to show that it was the overdose of Danocrine that caused her illness, for if she would have gotten the same ailment even with a nonnegligent prescription of the proper dose, then the dispensing pharmacy's negligence would not have been the cause of her harm.¹⁷² In *Zuchowicz* there was rather little concrete evidence on any of these three aspects of causation (though the trial judge was satisfied about causation despite the paucity of proof). For the sake of argument, let us imagine that the plaintiff had substantial and reliable evidence to support each of these necessary inferences with distinct and separate evidence for each one. Surely the fact that no single item of evidence could establish all three causation inferences at once should not be fatal to her case. No single piece of evidence would be sufficient to establish causation, but taken together, they could be the building blocks to establish precisely that. But why should it be any different if multiple items of evidence are necessary to establish one of the causation inferences? Just as Patricia Zuchowicz should be permitted to establish each of the necessary links in the causation chain with separate evidence, so too should she be permitted to link together multiple items to forge a single link. Bringing together multiple pieces of evidence to weave a persuasive narrative is an expected part of legal storytelling. That is, indeed, the lesson of the second half *Old Chief*,¹⁷³ and there is no reason why storytelling about scientific and expert evidence ought not to be able to be woven together out of multiple threads, just like other kinds of stories within the trial process.

Holism is the better approach as a matter of scientific epistemology as well. Scientists regularly aggregate evidence in their own domains. As Justice Stevens noted in *Joiner*, experts in a variety of fields regularly employ a "weight of the evidence" approach or variations thereof.¹⁷⁴ While scientific methods across fields

170. 140 F.3d 381 (2d. Cir. 1998).

171. *Id.* at 384.

172. *Id.* at 387–90.

173. *Old Chief v. United States*, 519 U.S. 172 (1997).

174. *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 152–54 (1997) (Stevens, J., concurring in part and dissenting in part). For discussions of the "weight of the evidence" approach, see, for example, Douglas L. Weed, *Weight of Evidence: A Review of Concept and Methods*, 25 RISK ANALYSIS 1545

are diverse and varied enough to make generalization dangerous, it is nonetheless fair to say that some form of evidence aggregation and evidence synthesis operates in virtually every scientific domain. As philosopher of science Carl Cranor wrote:

Central to nondeductive (scientific) arguments is a need to integrate all the relevant and available evidence to come to a conclusion about the most likely explanation of what is occurring. In assessing a substance's toxicity, scientists typically utilize human evidence, if it is available, experimental animal studies, if they are available, any chemical structure-biological activity evidence, and any mechanistic evidence in order to evaluate what conclusion follows. A widely shared view in setting out and assessing scientific arguments is, "never throw [relevant] evidence away."¹⁷⁵

Norms about how to synthesize and aggregate may vary tremendously across fields, however. In some areas, there may exist formal, methodologically sophisticated and rigorous meta-analytic techniques, designed to permit the precise and quantified aggregation of studies that are methodologically similar to one another—for example, a meta-analysis of randomized trials about cholesterol reduction or the effect of weight loss on blood pressure, designed to produce some knowledge about what the variety of randomized studies can show if analyzed together.¹⁷⁶ In other areas, evidence aggregation may be more inchoate and intuitive. Consider, for example, the well-known Bradford Hill criteria, often considered relevant for determining whether an epidemiologically-observed correlation between a potential causal agent and a disease can or cannot legitimately be treated as a cause rather than as merely an association.¹⁷⁷ Hill's still influential criteria include factors such as the strength of the association; how consistently it has been observed; how specific the observations are to this particular exposure and the disease; what the temporal relationship is between exposure and disease; gradient, or dose/response, meaning whether increasing

(2005), Douglas L. Weed, *Evidence Synthesis and General Causation: Key Methods and an Assessment of Reliability*, 54 *DRAKE L. REV.* 639 (2006), and Sheldon Krinsky, *The Weight of Scientific Evidence in Policy and Law*, 95 *AM. J. PUB. HEALTH* S129 (2005).

175. Carl F. Cranor, *A Framework for Assessing Scientific Arguments: Gaps, Relevance and Integrated Evidence*, 15 *J.L. & POLY* 7, 50 (2007) (alteration in original) (footnote omitted); see also Haack, *supra* note 32.

176. See, e.g., Simon G. Thompson & Stephen J. Sharp, *Explaining Heterogeneity in Meta-analysis: A Comparison of Methods*, 18 *STAT. MED.* 2693 (1999) (looking at the effect of cholesterol reduction on the probability of a coronary problem); Judith E. Neter et al., *Influence of Weight Reduction on Blood Pressure: A Meta-analysis of Randomized Controlled Trials*, *HYPERTENSION*, Nov. 2003, at 878.

177. Austin Bradford Hill, *The Environment and Disease: Association or Causation?*, 58 *PROC. ROYAL SOC'Y MED.* 295 (1965).

exposure leads to increasing incidence; whether there is a known, plausible mechanism to explain a causal link given other current knowledge; whether a causal interpretation is coherent with other known facts about the disease and with laboratory based analysis; whether any experiments can or have been done that could help establish causation; whether there is any helpful analogy to parallel cases where causation is known.¹⁷⁸ This array of criteria is both substantial and soft, while they may certainly provide useful lenses for inquiry, they are also, as Douglas Weed points out “qualitative values” that may (sometimes) link to “quantitative results.”¹⁷⁹ It is thus far from clear which of them is most important, or how much of each or any is required for establishing causation. These criteria operate in a manner similar to a fuzzy balancing test, in that they provide a valuable framework for the questions but not necessarily a definitive or incontestable answer. They are nonetheless a clear example of data aggregation as a method for making scientific inference. While every field may have different methods, the basic principle that data can be aggregated is widespread.

We see then, that in the expert evidence context, both the conceptual underpinnings of evidence law and the knowledge practices of science favor holism. Was the Court in *Joiner* just confused or unsophisticated? How might we understand the attraction of atomism for judges in relation to expert evidence determinations? The explanation, I think, connects back to the motivation for *Daubert* and a gatekeeping function in the first place. *Daubert* was born, at least in part, out of concerns about so-called junk science, the fear that courts were failing to keep out some expert testimony that was absolutely implausible and without merit.¹⁸⁰ Whether these failings were actually widespread is an incompletely-studied empirical question, but there can be little doubt that expert witnesses have created structural problems for our system of adjudication for an extremely long time. I have written elsewhere about these difficulties; suffice it to say that expert witnesses raise twin problems for the judge and the lay factfinder.¹⁸¹ The first is the problem of partisanship—the danger that experts may, consciously or unconsciously, slant their testimony to assist the party paying their bills. The second is the problem of epistemic competence. We use experts pre-

178. *Id.* at 295–99.

179. Douglas L. Weed, *Truth, Epidemiology, and General Causation*, 73 BROOK. L. REV. 943, 956 (2008).

180. See HUBER, *supra* note 142. Whether this was a fair concern or a widespread practice is certainly debatable. My point is simply that junk science was one of the structural anxieties that led to *Daubert* and the expanded focus on gatekeeping by judges.

181. See generally Jennifer L. Mnookin, *Expert Evidence, Partisanship, and Epistemic Competence*, 73 BROOK. L. REV. 1009 (2008) [hereinafter Mnookin, *Epistemic Competence*]; Jennifer L. Mnookin, *Idealizing Science and Demonizing Experts: An Intellectual History of Expert Evidence*, 52 VILL. L. REV. 763 (2007).

cisely when the jury is thought not to have knowledge itself; but this makes it difficult indeed for the jury (or, for that matter, the judge) to have a legitimate epistemic basis for their assessment and evaluation of the expert's testimony.¹⁸² Partisanship means that the expert cannot be trusted; the lack of epistemic competence means that the judge and jury do not have adequate methods for assessing or testing the expert's claims.

How do these twin difficulties link back to atomism and holism? Put simply, the judge who atomizes makes the evaluative task of assessing the merits of the science a good deal easier. Assessing the strengths, flaws, insights, and limitations of a single study is a far more manageable task than asking what inferences a variety of studies of different types might legitimately support when assessed in conjunction with one another. Except when formal metanalytic techniques are available, aggregation in science requires judgment. It is in part subjective and uncertain, even at the best of times. If, because of the dangers of partisanship, the expert's motives (and judgment) cannot be trusted, informal forms of aggregation, like "weight of the evidence," can begin to feel dangerous and unmoored. They can seem—or not merely seem, but be—distressingly ad hoc. In the name of holism, aggregation and assessing the cumulative weight of the evidence, the expert may just be reaching whatever conclusion the party has asked of him.

Daubert and its progeny represent a shift away from an ipse dixit approach to expertise in court; no longer is evidence admitted substantially upon the expert's credentials and personal authority. As *General Electric Co. v. Joiner* puts it, "[N]othing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence which is connected to existing data only by the ipse dixit of the expert."¹⁸³ The expert's say-so is not supposed to be enough; affirmative evidence of validity is required. To be sure, methods for aggregation in science, even relatively informal, weight-of-the-evidence approaches certainly ought not to be based on the expert's mere say so. But the checks on these kinds of approaches within the scientific community—checks produced by collaboration, consensus processes, transparency, publication, reputation, and the like—are all likely to be weak or nonexistent in the courtroom. Holism thus poses a genuine danger of unmanageability—that is, of not providing the judge with meaningful or epistemically legitimate ways to distinguish legitimate efforts to aggregate the evidence from worrisome forms of overclaiming. It risks leading the court to focus more on the speaker's authority and credentials and less on the

182. Mnookin, *Epistemic Competence*, *supra* note 181, at 1012.

183. *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 137 (1997).

validity and adequacy of the evidentiary support for the expert's conclusions. Holism risks permitting too many unconstrained narratives, causation stories whose validity judges may not feel able to judge effectively.¹⁸⁴

To put the point slightly differently, high-threshold evidence determinations are basically built as mechanisms for increasing judicial control. Taking a holistic approach is, in effect, to lower the threshold at the margins by providing additional ways to meet it. If judges lack—or believe they lack—competence to evaluate aggregated expert evidence appropriately, they may fear that holism eviscerates their gatekeeping role, or, more precisely, leaves them with even less confidence about how to wield it. But none of this diminishes the reality that aggregation is, in fact, a legitimate tool for doing science. When courts disallow it on the argument that it is not science, they may not be misunderstanding their own evaluative capacity, but they are misunderstanding the tools that scientists use.¹⁸⁵

While holism in high-threshold settings provides additional tools for the advocate, it is not clear that it truly reduces a judge's discretion. In low-threshold settings, atomism decreases judicial discretion to some degree and holism increases it, but in high-threshold settings, there may not be any structural effect on the degree of judicial discretion that results from atomism versus holism. Why not? Because in high-threshold settings, the judge inevitably has a great deal of discretion, simply given the fact of a high threshold. So while the interpretive ap-

184. *Zuchowicz* arguably provides a nice example. Based on a temporal connection between the exposure and the harm, the credentials of the experts, and a quite speculative theory of a possible mechanism by which the drug Danocrine could have produced PPH, the court permitted the plaintiff's experts to testify and largely finessed the question of whether the overdose was responsible. *Zuchowicz v. United States*, 140 F.3d 381, 386–87 (2d Cir. 1998). The case illustrates the way that, when engaged in the analysis of aggregated information, courts may fail to notice missing links, weaknesses, or analytical gaps.

185. I have focused on *General Electric Co. v. Joiner*, but numerous lower court cases evince an atomistic approach to causation evidence as well. Some courts, however, do embrace holism. Perhaps the most noteworthy recent example is the First Circuit's 2011 decision in *Milward v. Acuity Specialty Products Group, Inc.*, 639 F.3d 11 (1st Cir. 2011). This opinion overturned a district court's atomistic exclusion of the plaintiff's expert testimony and vigorously argued in favor of permitting a holistic approach to interpretation:

In Dr. Smith's weight of the evidence approach, no body of evidence was itself treated as justifying an inference of causation. Rather, each body of evidence was treated as grounds for the subsidiary conclusion that it would, if combined with other evidence, support a causal inference. The district court erred in reasoning that because no one line of evidence supported a reliable inference of causation, an inference of causation based on the totality of the evidence was unreliable.

Id. at 23. Interestingly, and correctly, the court also made explicit that judgment and subjectivity are not at odds with science. *Id.* at 18 (“The fact that the role of judgment in the weight of the evidence approach is more readily apparent than it is in other methodologies does not mean that the approach is any less scientific.”).

proach taken by the judge may affect the manner in which discretion is wielded, as well as the array of tools available to the advocates to meet the threshold, it is not clear that the overall degree of judicial discretion is systematically increased or decreased to a substantial degree by either approach.¹⁸⁶

CONCLUSION

I have argued that atomism versus holism is an important and underrecognized tension within judicial decisionmaking about evidence. I have also suggested that this tension interacts with two other fundamental tensions in our bifurcated trial process: the tension on the one hand between judge and attorney, or to put it differently, between party control and the judicial reining in of adversarial excess; and, the tension on the other hand between judicial control of the evidentiary inputs and the jury's decision power. For low-threshold evidentiary determinations—like relevance and Rule 403 judgments—holism tends to increase the judge's power vis-à-vis both the attorneys and the jury, by providing the judge with a broader frame for analysis and by allowing the judge a more active, relational role in evaluating the evidence. By contrast, for evidentiary determinations tilted against admissibility, or for which a high threshold must be met as a precondition to admissibility, like the admissibility of expert evidence, these dynamics invert. For high-threshold evidentiary determinations, holism provides the attorney more tools, methods, and options for meeting the higher threshold, and hence holism likely leads to the admission of more evidence than an atomistic approach.

In some settings—like the admissibility of expert evidence—holism trumps atomism as an epistemic and interpretive strategy, both from an evidentiary perspective and a scientific one. More generally, if we could eliminate concerns about cognitive bias or prejudice, contextual, relational assessment is likely a generally better interpretive strategy than assessing individual items of evidence in isolation. But when we think about the institutional dynamics of judicial decisions within a bifurcated adversarial system, the question of which approach to prefer becomes significantly more complicated. For low-threshold evidentiary deter-

186. It is also possible that in the absence of clear guidance, judges may well select their interpretive strategy as a rhetorical justification for their desired outcome. In other words, a judge inclined to admit the expert evidence may elect holism, whereas one inclined to exclude may use atomism to justify the choice. For example, in *Milward*, one might fairly ask whether the court's decision to admit the plaintiff's expert testimony is a consequence of the judge's interpretive holism, or whether, instead, a more inchoate, intuitive desire to admit the evidence produced an opinion written in a holistic vein. The same, of course, could be asked of the Court's atomism in *Joiner*, 522 U.S. 136.

minations, atomism may incentivize unfortunate forms of strategic behavior by attorneys. Holism, however, if taken to the extreme, might lead judges to be too invasive, unduly restricting the parties' reasonable efforts to tell vivid and persuasive stories, the concern Justice Souter fretted over in *Old Chief*. For high-threshold evidentiary determinations, atomism may lead to judicial assessments that feel unduly narrow, or that misunderstand the methods by which knowledge is produced, or that risk conflating admissibility with sufficiency. But when the threshold is high, holism may also be discomfiting, as it may leave judges feeling understandably unmoored about precisely how to apply a high threshold to a complex, and perhaps seemingly disconnected, array of evidence. Without clear guidance or methods that leave them confident of their own ability to distinguish the legitimate from the unwarranted, judges may fear that holism gives parties excessive control, especially when coupled with the problems of expert partisanship.

Assuming that we maintain our systemic commitments to both (partly checked) adversarialism and to the bifurcated power of judge and jury, this tension between atomism and holism is quite unlikely to be resolved—neither across the board within evidence law, nor even, perhaps, within particular domains of evidence. It is more likely that, given the multiple unresolved tensions at work, we will continue to muddle through, sometimes seesawing back and forth, a little more atomistic in one place, a bit more holistic in another.

Nonetheless, understanding the complex dynamics of both atomism and holism within the law of evidence can help us better understand both the options available to us and the institutional consequences of our interpretive choices. Moreover, it can help us understand why a coherent across-the-board interpretive strategy is likely to be neither feasible nor desirable. For if the Rules are a balancing act, they are, by design, trying to balance several different fulcrums at once; therefore, which interpretive strategy we prefer will vary with the circumstances. It will depend not only on whether we wish to focus on the tension between judge and lawyer or that between judge and jury, but also on whether the evidentiary matter at issue is a low-threshold determination, where admissibility is the default, or a high-threshold determination, where it is not.

The table below sums up the dynamics that we have seen thus far, detailing both the potential benefits and costs of each position. At this point we can see clearly why we are unlikely simply to be able to choose atomism or holism—it will depend on precisely how we weigh the risks and the benefits, and these will operate differently in low-threshold versus high-threshold circumstances:

Table 1. The Institutional Dynamics of Atomism and Holism

	Low-Threshold Evidentiary Determination (e.g., Rule 403)	High-Threshold Evidentiary Determination (e.g., Expert Evidence)
Atomism	Consequence: May increase admissibility; more information/evidence goes to the jury.	Consequence: May decrease admissibility of evidence; less information/evidence goes to the jury.
	Risk: Permits strategic behavior by the parties/attorneys; incentivizes efforts to introduce information that meets the low threshold but may have a biasing effect on jury.	Risk: Myopia. Judge may lose sight of the distinction between admissibility and sufficiency and between individual bricks and the wall.
	Benefit: Decreases judicial discretion to engage with a broader array of materials; may reduce the danger of judicial bias.	Benefit: Can protect against the party's excessively strategic effort to combine evidence to meet the high threshold via the conclusion of a partisan expert.
Holism	Consequence: May decrease admissibility; less information/evidence goes to the jury.	Consequence: May increase admissibility; more information/evidence goes to the jury.
	Risk: Judge substitutes his judgment for the factfinder and may regulate party's control over the evidence to an excessive degree or in idiosyncratic ways.	Risk: Permits strategic behavior by the parties/attorneys. May leave judges without clear metrics for evaluation of complex matters.
	Benefit: Curbs and protects against the party's strategic selection of evidence (by increasing judge's discretion).	Benefit: At least in expert evidence context, conceptually superior interpretive strategy.

Of course, even this relatively complex table remains insufficiently nuanced as an approach to the evidence rules writ large. Many evidentiary standards cannot be framed as either low threshold or high threshold; in these settings, there is no clear default vis-à-vis admissibility. Here too, atomism and holism will intersect with issues about the balance of power between judge and jury, and between judge and attorney, but the systematic effects of atomism or holism will be harder to discern because they will likely depend on the individual judge's default position on the specific issue in the specific factual circumstances. Given this complexity, an across-the-board approach would inevitably oversimplify, and muddling through may be all we can reasonably expect. But we can nonetheless hope that a better understanding of the dynamics at work in these judicial assessments may help judges, advocates, and scholars alike both recognize the importance of this interpretive lens and manage these tensions more thoughtfully in the wide variety of circumstance in which they arise.