MAKING SENSE OF MAKING SENSE: LESSONS FROM ARISTOTLE ON HOW TO MAKE SHARPER, MORE LOGICAL LEGAL ARGUMENTS

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INTRODUCTION

"The life of the law has not been logic; it has been experience."[1] Oliver W. Holmes Jr.'s observation, made in 1880, has long since become conventional wisdom in the legal profession.[2] He found that legal reasoning is an intuitive art, not a rigid science.[3] But intuition cannot validate an argument, and it can overlook legal issues that would have been obvious to someone with a

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The author dedicates this Article to his wife, Pretoria Pearsall, for her boundless love and support.

1. OLIVER W. HOLMES JR., THE COMMON LAW 1 (Harvard Univ. Press 2009) (1881); *see also Book Notices*, 14 AM. L. REV. 233, 234 (1880) (theorizing that "judges [intuitively] know how to decide a good deal sooner than they know why").

2. Thomas C. Grey, *Holmes and Legal Pragmatism*, 41 STAN. L. REV. 787, 792 (1989) (referring to Holmes's quote about the life of the law as the "the central . . . truth of American legal thought").

3. *See* Oliver Wendell Holmes, *The Path of the Law*, 10 HARV. L. REV. 457 (1897), *reprinted in* COLLECTED LEGAL PAPERS 167, 180–81 (1920) (critiquing logic as "the notion that a given [legal] system, ours, for instance, can be worked out like mathematics from some general axioms of conduct").

background in logic.[4] This Article proposes a practical framework for applying logic to legal reasoning—one that helps lawyers think clearly, see the reasoning beneath the rhetoric, and explain an argument's flaws with precision.

Consider a common closing argument in criminal trials:

> The jury instructions say that if you have a reasonable doubt—any doubt that would make a reasonable person hesitate in making a decision of importance in their own life—then you must find my client not guilty. Well, members of the jury: you're reasonable people. So, if you go back to the jury room and you find yourself hesitating, the law is clear: you must find my client not guilty.

The argument makes common sense, but not logical sense. In *Paulson v. State*, a Texas court found that a jury instruction built on this defective reasoning was so logically defective as to deprive the defendant of a fair trial.[5] As the court explained, the rule that "pneumonia makes you cough" does not mean anyone who coughs must have pneumonia.[6] Similarly, the rule that reasonable doubt causes hesitation does not mean that anyone who hesitates must have a reasonable doubt. Logical analysis will question and reject what intuitive analysis would have never known to question.

Whatever the life of the law may be, logic still constrains, structures, invalidates, and often decides cases. The work of lawyering is deeply, inescapably logical. So, to review how lawyers can make sharper, more logical arguments, this Article turns to Aristotle, the first philosopher to systematically and comprehensively study reasoning itself. Where Socrates questioned relentlessly, Aristotle provided structure—by categorizing arguments, testing what works and what

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4. *See* Stephen M. Rice, *Indiscernible Logic: Using the Logical Fallacies of the Illicit Major Term and the Illicit Minor Term as Litigation Tools*, 47 WILLAMETTE L. REV. 101, 104 (2010) [hereinafter *Indiscernible Logic*].

5. 28 S.W.3d 570, 573 (Tex. Crim. App. 2000).

6. *Id.* at 572.

fails, and identifying the conditions under which conclusions follow. So too can lawyers break arguments into their essential parts, test them against the rules of deductive and inductive reasoning, and ensure that their own arguments can withstand such scrutiny.

To that end, Part I examines why law and logic have had such an uneasy relationship, then introduces Aristotle's framework for reasoning. Parts II and III overview that framework, focusing on formal and informal logic, respectively.

I. THE TENSION BETWEEN PHILOSOPHIC LOGIC AND LEGAL REASONING

Once, logic served as the bedrock of higher education and everyday reasoning in the United States. Throughout the seventeenth century, logic was "used constantly and consciously as the technology of rational living," and logic textbooks "were designed to be useful and read even in one's leisure."[7] A logic textbook served as Harvard University's most popular textbook from 1687 until about 1767.[8] But today, training in logic has vanished from higher education, and studies have noted a significant decline in critical thinking skills among incoming classes of law students.[9] That decline is likely to worsen, as students increasingly use artificial intelligence tools to replace instead of enhance critical thinking.[10] What was once a core intellectual skill has

7. ARISTOTELIAN & CARTESIAN LOGIC AT HARVARD 6 (Rick Kennedy ed., 1995), https://www.colonialsociety.org/node/2052#p1 [https://perma.cc/6BPZ-82F3].

8. *See id.* at 93.

9. *See, e.g.*, Rebecca C. Flanagan, *The Kids Aren't Alright: Rethinking the Law Student Skills Deficit*, 2015 BYU EDUC. & L.J. 135, 138–47 (2015) (discussing the recent drop in critical-thinking skills among law students and potential causes for this phenomenon); Courtney G. Lee, *Changing Gears to Meet the "New Normal" in Legal Education*, 53 DUQ. L. REV. 39, 67–68 (2015) (discussing the critical-thinking skills gap among new law students and arguing that the gap is likely to continue growing).

10. *See* Ron Aboodi, *The Worrisome Potential of Outsourcing Critical Thinking to Artificial Intelligence*, 75 EDUC. THEORY 626, 630–38 (2025).

become optional, perhaps even obsolete. This retreat from deductive formalism began with a philosophical revolt, led by thinkers like Oliver Wendell Holmes Jr.

A. The Fall of Legal Formalism and Rise of Legal Realism

In 1880, 39-year-old Holmes reviewed a contracts casebook that sought to rebuild the law on more certain ground, as a scientific body of universal rules.[11] The author was Christopher Columbus Langdell, who served as the dean of Harvard Law School and who had pioneered the "case method" of legal education, which Holmes had praised and which continues to be the gold standard for legal education in the United States.[12] Despite the author's prominence, Holmes felt that his casebook went too far by reducing legal reasoning to axiomatic principles, in effect treating law as math.[13]

Thus, his book review of the casebook dismissed Langdell's vision with what has become legal realism's rallying cry: "[t]he life of the law has not been logic: it has been experience."[14] This may be "the most famous sentence [Holmes] ever wrote."[15] The University of

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11. *See* Geoffrey Klinger, *For Christopher Columbus Langdell*, 25 IOWA J. COMM. 97, 98 (1993), https://scholarworks.uni.edu/ijc/vol25/iss3/31 [https://perma.cc/4K67-6YTC].

12. LAWRENCE M. FRIEDMAN, A HISTORY OF AMERICAN LAW 530–31 (1973); Bruce A. Kimball, *The Proliferation of Case Method Teaching in American Law Schools: Mr. Langdell's Emblematic "Abomination," 1890–1915*, 46 HIST. EDUC. Q. 192, 192–93 (2006).

13. Daniel P. O'Gorman, *Langdell and the Foundation of Classical Contract Law*, 70 CLEV. ST. L. REV. 459, 481 (2022) ("Holmes believed Langdell's approach was unscientific because the attempt to reduce a body of law to the consequences of a few fundamental principles was inconsistent with the way the legal system really worked.").

14. *Id.*; *see also* HOLMES, *supra* note 1 (reiterating the phrase about experience as the life of the law at the beginning of his 1881 treatise on the common law).

15. Bruce A. Kimball, *The Langdell Problem: Historicizing the Century of Historiography, 1906–2000s*, 22 L. & HIST. REV. 277, 304 (2004) (quoting ALBERT W. ALSCHULER, LAW WITHOUT VALUES: THE LIFE, WORK, AND LEGACY OF JUSTICE HOLMES 92 (1st ed. 2000)); Thomas C. Grey, *Langdell's Orthodoxy*, 45

Michigan Law School has even carved it into stone, for all law students to take note.[16] In Holmes's view, Langdell's rigid logic ignored the messy realities of how judges really decide cases.[17] In his words: "General propositions do not decide concrete cases."[18]

Unlike the logical principles written on a philosophy professor's chalkboard, legal disputes are full of ambiguous texts, contested facts, credibility issues, passion, and big personalities. Judges are not calculators. They apply judgment, not formulas, and their judgment relies on personal experience, judicial instinct, and common sense. Holmes did not reject logic, nor did he argue that legal reasoning should be nonsensical. Instead, he rejected the idea that legal reasoning could ever escape the subjective, lived experience of judgment.

But Aristotle would likely have viewed this logic-or-experience debate as a false dichotomy. From Aristotle's standpoint, Langdell preferred the *a priori* logic of math,[19] Holmes preferred the *a posteriori* logic of subjective, lived experience[20]—but both still saw logic as the life of the law. What Holmes rejected was not logic per se, but a rigid type of logic, in effect declaring, "The life of the law has not been deductive logic: it has been inductive logic." To better understand why Langdell's equations and Holmes's experiences are both equally

U. PITT. L. REV. 1, 3 (1983) (describing Holmes's quote about the life of the law as "the central slogan of legal modernism").

16. Engraving, "The life of the law has not been logic; it has been experience," Hutchins Hall, Univ. of Mich. Law Sch., Ann Arbor, Mich.

17. *See* Lochner v. New York, 198 U.S. 45, 75, 76 (1905) (Holmes, J., dissenting).

18. *Id.* at 76.

19. *See* ARISTOTLE, PRIOR ANALYTICS 1–4 (Robin Smith trans., Hackett Publ'g Co. 1989) (discussing the nature of what is now known as deductive logic or *a priori* reasoning) [hereinafter PRIOR ANALYTICS].

20. *See* ARISTOTLE, POSTERIOR ANALYTICS 1, 2 (Jonathan Barnes trans., J. L. Ackrill & Lindsay Judson eds., Oxford Univ. Press 2d ed. 1994) (1942) [hereinafter POSTERIOR ANALYTICS] (discussing the nature of what is now known as inductive logic, or *a posteriori* reasoning); *see also* BERTRAND RUSSELL, HUMAN KNOWLEDGE: ITS SCOPE AND LIMITS 449–50 (George Allen & Unwin Ltd.1948).

logical, this Article demystifies the field of logic and applies it to everyday legal reasoning.

B. Logic Demystified: A Historical Review From Aristotle to AI

For a profession that lives by argument, the legal field spends little to no time studying argument itself. But philosophers have spent thousands of years answering the question on most lawyers' minds: what makes an argument "strong" or "weak"?[21] In seeking to reason their way to the deepest truths, philosophers built a foundation of logic—first through monologues and dialogues, then through textbooks and simple rules about how to dissect arguments, test their form and ideas, then explain what works and what fails in the argument. Over time, these foundational systems of thought gave rise to symbolic language, first-order logic, and computers and artificial intelligence machines.

Before the study of logic was a field, and before logic even had a name (as a field of study), the earliest Greek philosophers—known as the pre-Socratics—laid the conceptual groundwork for rational inquiry. In the fifth and sixth centuries BCE, pre-Socratic thinkers such as Thales, Heraclitus, Parmenides, and Anaximander thoroughly questioned the nature of reality, change, and permanence.[22] They did not discuss the nature of reasoning itself, but they laid the groundwork for the study of reasoning, by replacing myth and perception with reason as the standard for truth.[23] Parmenides, for instance, noted that reason can contradict sensory experience, and these kinds of insights helped pave the

21. *See* IRVING M. COPI, CARL COHEN & KENNETH MCMAHON, INTRODUCTION TO LOGIC 3 (Pearson Educ. Ltd. 2014) ("Logic is the study of the methods and principles used to distinguish correct from incorrect reasoning.").

22. *See* Patricia Curd, *Presocratic Philosophy*, THE STAN. ENCYCLOPEDIA OF PHIL. (June 22, 2020), https://plato.stanford.edu/entries/presocratics/ [https://perma.cc/9ML4-XZYS].

23. *See* John Palmer, *Parmenides*, THE STAN. ENCYCLOPEDIA OF PHIL. (Mar. 4, 2025), https://plato.stanford.edu/entries/parmenides/ [https://perma.cc/WS89-BVF9].

way for Socratic thinkers to develop the study of logic itself.[24]

Socrates lived from about 469–399 BCE, at a time when Western philosophers focused largely on the cosmos or nature in lengthy monologues.[25] But Socrates believed "the unexamined life is not worth living," so he preferred examining questions of human nature over the natural world.[26] He taught through dialogue instead of monologue, with a focus not on answering questions but asking the right ones. Instead of giving speeches in the public square or building a grand academy for his lectures, Socrates lived a quiet, informal life, wandering the streets of Athens in torn clothes, barefoot, questioning priests about piety, artists about beauty, and generals about courage.[27] Socrates offered no answers, but he showed that neither did the elites who claimed to have all the answers.[28] For that, he was executed.[29]

Socrates wrote nothing, but his dialogues live on through one of his most devoted students, Plato.[30] Plato continued this tradition of reasoned inquiry, though he took it in a very new direction. He believed there are definitive answers out there, at least to some questions.[31] In the dialogue *Republic*, Plato argued that abstract concepts, like justice and beauty, have a very real and logical form that one can deduce through reason alone. To illustrate this point, he proposed what is now one of

24. *See id.*

25. *See* Debra Nails, *Socrates*, THE STAN. ENCYCLOPEDIA OF PHIL. (May 26, 2022), https://plato.stanford.edu/entries/socrates/ [https://perma.cc/R8LV-GCTV].

26. *See id.*

27. *See id.*

28. *See id.*

29. *See id.*

30. *See* Richard Kraut, *Plato*, THE STAN. ENCYCLOPEDIA OF PHIL. (Feb. 12, 2022), https://plato.stanford.edu/entries/plato/ [https://perma.cc/PP6R-7CNP].

31. *See id.*

the most well-known thought experiments in philosophy: the Allegory of the Cave.[32]

Plato imagined a group of men in a cave, chained to the wall.[33] When they see shadows cast on the wall before them, they of course presume that these shadows are real beings, not mere reflections.[34] If one of those men were to break free from his chains and escape the cave, he would squint against the harsh, foreign rays of the sun and fight to see the blurry outside world.[35] If that man returned to the cave to enlighten his comrades, Plato envisioned that they would react with mockery and even violence.[36]

Plato had his philosophy of forms in mind for that allegory, but it has transformed into a rallying cry for philosophy and the pursuit of truth in general, because it illustrates both how difficult it is to take the path from ignorance to knowledge, and how hard people will fight for comfortable illusions. These were lessons Plato learned through experience, having lived through the execution of Socrates.[37]

Plato's student, Aristotle, left an especially significant footprint on modern Western philosophy.[38] He emphasized observation and experience over theory and abandoned the writing styles of both monologue and dialogue.[39] Instead, he wrote in the style of a textbook: systematic, structured, and depersonalized.[40] Over 2,400

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32. *See* PLATO, THE REPUBLIC VII (Benjamin Jowett trans., 1998), https://classics.mit.edu/Plato/republic.8.vii.html [https://perma.cc/2M8U-KMBX].

33. *See id.*

34. *See id.*

35. *See id.*

36. *See id.*

37. *See* Tim Connolly, *Plato: Phaedo*, INTERNET ENCYCLOPEDIA OF PHIL., https://iep.utm.edu/phaedo/#:~:text=Search-,Plato%3A%20Phaedo,by%20the%20state%20of%20Athens. [https://perma.cc/5P55-LN7P] (last visited Nov. 2, 2025).

38. *See* Christopher Shields, *Aristotle*, THE STAN. ENCYCLOPEDIA OF PHIL. (Aug. 25, 2020), https://plato.stanford.edu/entries/aristotle/ [https://perma.cc/36XM-FG5N].

39. *See id.*

40. *See id.*

years later, this uniquely Aristotelian style of inquiry continues to dominate the language of education around the world.[41] Aristotle brought structure to thought. He organized his ideas through his theories of categories, namely his idea that he could categorize "the basic kinds of beings there may be."[42] He developed fields of study for biology, ethics, politics, metaphysics, rhetoric—and, most importantly for this Article: logic.[43]

While pre-Aristotelian philosophers argued rigorously and debated about the logical strength of different arguments, Aristotle transformed logic from an implicit practice to an explicit theory in *Organon* and *Rhetoric*. *Organon*'s concern with necessary inference lays the foundations for formal logic, which Langdell considered to be the life of the law. *Rhetoric*'s interest in reasonable inference lays the foundations for informal logic, which Holmes considered to be the life of the law. Altogether, Aristotle's works offer philosophy's first formalized system of logic.[44]

In *Rhetoric,* Aristotle discusses the distinctions between *logos*, *pathos*, and *ethos* as the three "means of effecting persuasion."[45] He defines "logos" as speech that "prove[s] a truth or an apparent truth by means of the persuasive arguments suitable to the case in question."[46] This conveys an understanding of reasoning as an attempt to justify a belief.[47] Aristotle distinguishes between arguments that establish certainty and those

41. *See id.*

42. *Id.*

43. *Id.*

44. *Id.*

45. ARISTOTLE, RHETORIC I.2. (W. Rhys Roberts trans.), https://classics.mit.edu/Aristotle/rhetoric.1.i.html [https://perma.cc/CD72-UXBE] (last visited Jan. 15, 2026).

46. *Id.*

47. *See id*. Notably, the word "argument" comes from the Latin *arguere*, meaning to "make known," because the goal of an argument (at least, a good faith argument) is to make known one's reasons for having some belief. *Argue*, ETYMONLINE, https://www.etymonline.com/word/argue [https://perma.cc/8K4G-KLU5] (last visited July 27, 2025).

that establish probability.[48] Deductive reasoning and formal logic can establish arguments with certainty, while inductive reasoning and informal logic can establish arguments with probability.[49] *Organon* addresses what must be true; *Rhetoric* addresses what can be true. Together, these two kinds of logic form a complete theory of rational persuasion, one that is perfectly suited to legal reasoning. Both are indispensable to legal reasoning. Both are the life of the law.[50] The conflict between legal formalism and legal realism was never about rejecting logic; it was about which kind of logic legal reasoning should prefer.

Aristotle pairs these abstract definitions about argument with a practical underlying structure, which he calls "syllogism." The syllogism moves from a general rule known as a "major premise," to a particular fact known as a "minor premise," then applies the rule to the facts to reach a necessary conclusion.[51] Similarly, legal reasoning applies law to facts. The classic example of deductive argument is:

All men are mortal.
Socrates is a man.
Therefore, Socrates is mortal.[52]

If every person is mortal, and Socrates is a person, then by definition Socrates must be mortal as well. There is no room for counterargument.

The Stoics, especially Chrysippus (c. 280–206 BCE), were among the first to continue Aristotle's work.[53] They

48. *See* PRIOR ANALYTICS, *supra* note 19; POSTERIOR ANALYTICS, *supra* note 20; *see also* BERTRAND RUSSELL, HUMAN KNOWLEDGE: ITS SCOPE AND LIMITS 450 (George Allen & Unwin 1948).

49. *See* Stephen M. Rice, *Argument's Design: The Post Hoc Ergo Propter Hoc Fallacy in Legal Argument and Analysis*, 89 UMKC L. REV 279, 286 (2020) [hereinafter *Argument's Design*].

50. *See Indiscernible Logic*, *supra* note 4, at 108–09.

51. *See* PRIOR ANALYTICS, *supra* note 19, at 4.

52. Mark Cooney, Column, *Plain Language: Make Your Case in a Minute (With Some Help From Aristotle)*, 101 MI BAR JNL. 48, 48 (February 2022).

53. *See* Marion Durand, Simon Shogry, & Dirk Baltzly, *Stoicism*, THE STAN. ENCYCLOPEDIA OF PHIL. (Jan. 20, 2023), https://plato.stanford.edu/entries/stoicism/ [https://perma.cc/92TQ-THL7].

developed propositional logic and researched the syllogistic roles of logical connectors (such as "and," "or," and "not"), which this Article will apply to legal reasoning in the next Section.[54]

In the Medieval era, logicians refined Aristotle's syllogism into rules still taught and adapted in modern logic.[55] They classified valid syllogistic forms with the letters A, E, I, and O to represent the four categorical propositions: universal affirmative, universal negative, particular affirmative, and particular negative.[56] They recognized up to 24 variations of valid A, E, I, O combinations.[57] They also articulated rules of the syllogism intended to establish necessary and sufficient conditions for validity, to help eliminate invalid reasoning.[58]

The Medieval formalization of logic into a rule-based field of study helped bridge the gap between Aristotelian logic and modern logic, by organizing language so precisely that modern thinkers could then replace the inherent ambiguity of natural language with its

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54. *See id.*

55. *See* Sangeet Khemlani & P. N. Johnson-Laird, *Theories of the Syllogism: A Meta-Analysis*, 138 PSYCH. BULL. 427, 430 (2012); Susan Russinoff, *The Syllogism's Final Solution*, 5 BULL. SYMBOLIC LOGIC 451, 454 (1999). Specifically, this Article will explore the following six rules of valid syllogism:

1. A syllogism must have three terms: a major term as the predicate of the conclusion, a minor term as the subject of the conclusion, and a middle term connecting the major and minor terms;
2. In order to connect the major and minor terms, the middle term must be "distributed" at least once, meaning it must refer to all members of its category in at least one premise;
3. A term that the conclusion distributes must also be distributed in at least one premise;
4. Two negative premises cannot support any conclusion;
5. If one premise is negative, the conclusion must be negative as well; and
6. Two universal premises cannot lead to a particular conclusion.

56. Russinoff, *supra* note 55.

57. *Id.*

58. *See id.*

unambiguous logical function(s).[59] The field of logic took that major leap forward in the 19th century, with the advent of symbolic logic.

Gottlob Frege (1848–1925) created a system of symbolic language.[60] Frege would replace the natural language of the "all men are mortals" argument with a more logically rigorous formal language:[61]

Natural Language	**Translation**	**Formal Language**
All men are mortal	A = All Men $\rightarrow$ = Are B = Mortal	$A \rightarrow B$
Socrates is a man	"Man" is true for Socrates	A
Therefore, Socrates is mortal	$\therefore$ = Therefore B = Being a mortal is true for Socrates	$\therefore$ B

Bertrand Russell, Alfred North Whitehead, Kurt Gödel, and Ludwig Wittgenstein further refined the use of symbolic language, to the point that Aristotle's proof of Socrates's mortality would now be expressed as follows:[62]

59. *See* Roy Cook, *Frege's Logic*, THE STAN. ENCYCLOPEDIA OF PHIL. (Feb. 7, 2023), https://plato.stanford.edu/entries/frege-logic/ [https://perma.cc/XY8R-MQVS].

60. *See id.*

61. *See id.*

62. *See* William Ewald, *The Emergence of First-Order Logic*, THE STAN. ENCYCLOPEDIA OF PHIL. (Nov. 17, 2018), https://plato.stanford.edu/entries/logic-firstorder-emergence/ [https://perma.cc/X3A3-QMUX].

∀x (Human(x) → Mortal(x))	For all x, if x is a human, then x is mortal
Human(Socrates)	"Human" is true for the individual known as Socrates
∴ Mortal(Socrates)	*Therefore, "mortal" is true for the individual known as Socrates*

This symbolization of logical language quickly led to a new form of logic, distinct from Aristotle's syllogistic logic.[63] Known as first-order logic, or predicate logic, this modern school of logic has since become the foundational logic of mathematics and every system of thought that depends on mathematics, such as computer science and artificial intelligence.[64] Where Aristotelian logic uses syllogisms to reason about categories and universal truths, first-order logic uses quantifiers and predicates to express relationships between individual objects and their properties.[65] Where Aristotelian logic limits itself to reasoning about classes and members (such as "all men are mortal"), first-order logic allows reasoning about specific individuals, functions, and relations, allowing for a much more precise and flexible (albeit much more difficult to learn) system.[66]

Logic, as these philosophers defined it, describes an unrestricted kind of reasoning. Unlike the open-ended and unrestrained field of philosophical reasoning, legal reasoning is practical, adversarial, context-dependent,

63. *See id.*
64. *See id.*
65. *See id.*
66. *See id.*

focused on persuasion under pressure, and tightly bound by sometimes vague and even unreasonable rules and presumptions. The next Section translates the elegance, rigor, and precision of logic for philosophers into logic for lawyers.

C. Logic for Lawyers: Applying Aristotle's Reasoning to Legal Reasoning

Aristotle's brilliance lies not just in his thoughts, but in how he reached them. He organized complex questions about vague and contested ideas into key elements, methodically analyzed each element, then explained his analysis with the clarity and rigor of a scientist mapping a system. This Article adapts a parallel method for evaluating legal arguments, allowing attorneys to simplify, test, and discuss what does and does not make sense about an argument. This three-step model moves from categorization, to form, to substance.

Step One: Categorize the Argument. The first step to evaluating an argument is understanding it.[67] Aristotle described an anatomy to arguments, and subsequent scholars identified key terms, logical connectives, and patterns of reasoning.[68] Understanding an argument requires categorization. This stage separates fact from opinion, premise from conclusion, "and" from "or," reasonable inference from necessary inference, essential claims from non-essential claims, and so on. At this stage, the goal is not to judge but to clarify, by cutting the rhetoric from the reasoning.

Step Two: Evaluate the Argument's Form. This stage tests the form of argument. An argument is

67. *See Indiscernible Logic*, *supra* note 4, at 115 ("Evaluating an argument's structure begins with subdividing the argument into components, and assembling those subdivisions into a uniform structure called a syllogism.").

68. *See* Robin Smith, *Aristotle's Logic*, THE STAN. ENCYCLOPEDIA OF PHIL. (Nov. 22, 2022), https://plato.stanford.edu/entries/aristotle-logic/ [https://perma.cc/3WH2-ULJN]; *Propositional Logic*, INTERNET ENCYCLOPEDIA OF PHIL. (2024), http://iep.utm.edu/propositional-logic-sentential-logic [https://perma.cc/266Y-S2KX] (discussing many scholars who have made contributions to propositional logic over centuries).

considered valid when its form guarantees that if the premises are true, then the conclusion is true.[69] By contrast, poor form guarantees that the argument is nonsense, no matter how appealing, intuitive, or factually correct the conclusion may be.[70] This step applies the principles of formal logic and deductive reasoning to legal argumentation.

Step Three: Evaluate the Argument's Substance. Legal analysis often begins and ends at this final stage, with its focus on the content of argument. The strongest legal arguments abide by the same standards as sworn testimony: they must be the truth, the whole truth, and nothing but the truth. That truth must be clear, accurate, verifiable, and exact. This third step applies the principles of informal logic and inductive reasoning to legal argumentation.

Reasoning by method, not instinct, can clarify complex law and fact, simplify complex thoughts, and maximize the persuasive force of our arguments. In turn, this kind of thinking will make an attorney more efficient and confident in their decisions.[71] For step one in this process, the next Section turns to the anatomy of argument.

II. FORMAL LOGIC AND ITS FALLACIES

As attorneys, we rarely (if ever) consider the form of an argument.[72] We focus on semantics (the rules of truth

69. *Indiscernible Logic*, *supra* note 4, at 109 n.19 ("When the logical form of an argument is valid, and its premises are true, then the argument requires that the conclusion be true.").

70. *See id.*

71. In psychology, "Hick's Law" refers to our tendency to make exponentially quicker, more certain decisions when faced with fewer choices—and vice versa. *See, e.g.*, R. Hyman, *Stimulus Information as a Determinant of Reaction Time*, 45 J. EXPERIMENTAL PSYCH. 188, 189 (1953), https://doi.org/10.1037/h0056940 [https://perma.cc/T2XP-WKN8]; Luca Rosati, *How to Design Interfaces for Choice: Hick-Hyman Law and Classification for Information Architecture*, *in* CLASSIFICATION AND VISUALIZATION: INTERFACES TO KNOWLEDGE 125, 127 (Aida Slavic et al. eds., 2013).

72. *See Argument's Design*, *supra* note 49, at 282–84.

and meaning) over syntax (the rules of form), but this tunnel vision is a disservice to our clients. Our most decisive arguments can be arguments about form. An argument with poor form is invalid, rendering it illogical no matter how fair or intuitive it may feel. By contrast, validity guarantees that if the premises are true, the conclusion must be true. Aristotle found that every argument, even the most rhetorically complex argument, only has three core elements of form, which this Article will visually distinguish with bold, italics, and underline:

Premise + ***Inference*** **=** Conclusion[73]

A **premise** supports the claim made in the conclusion, and an *inference* is the extent to which it does so.[74] These interrelated terms help distinguish arguments from non-arguments, such as:

Speaker A: No, that's absurd.

Speaker B: Why?

Speaker A: Because it's nonsense, that's why.

The exchange above lacks any premise or inference. Speaker A's reasoning is a broken record, reiterating a conclusion without ever providing any reason to believe it.[75] This style of reasoning is rhetorical instead of logical, and it is known as *argumentum ad lapidem*

73. *See* Smith, *supra* note 68.

74. *See id*. For example, the premise "he won the mayoral election" necessarily infers the conclusion that "he is the mayor." By contrast, the premise "he won the mayoral election" only reasonably infers the conclusion that "he offered the best policies." It is a reasonable conclusion, but it is not necessarily true. Perhaps his policies were generic, and he won because he was the best-funded or most charismatic candidate. As for the term "premise," other commonly used terms include "assertion," "claim," or "proposition." Vern R. Walker, *Discovering the Logic of Legal Reasoning*, 35 HOFSTRA L. REV. 1687, 1693, 1697 (2007). These are all interchangeable terms, so for simplicity's sake, this Article exclusively uses the term "premise."

75. *See* Gen. Elec. Co. v. Joiner, 522 U.S. 136, 146 (1997) ("Trained experts commonly extrapolate from existing data. But nothing in either Daubert or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert. A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered.").

(appeal to the stone).[76] Conclusory statements are not argument; they are a refusal to argue. Because without evidence, there is nothing to evaluate; there is only evasion.[77]

For a full-fledged legal argument, consider the three-part form of one of the most recognizable arguments in modern courtroom history:

If the glove doesn't fit, + *then you must* = acquit[78]

Premise + *Inference* = Conclusion

In that excerpt from OJ Simpson's 1995 trial, defense attorney Johnnie Cochran argued that if the bloody glove recovered from the scene of the murder does not fit his client, then his client cannot be the person who wore that glove on the night of the crime.[79] Famously, that glove did not fit.[80] Therefore, at least in the speaker's view, the jury had no choice but to acquit. This is an example of Aristotle's "syllogism."[81]

A. Syllogism as the Foundation of Logical Argument

A syllogism is made up of a major premise that offers a general law, a minor premise that offers a specific fact,

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76. *See Pseudo-Logical Fallacies*, LOGICALLY FALLACIOUS, https://www.logicallyfallacious.com/logicalfallacies/Pseudo-Logical-Fallacies [https://perma.cc/BM37-APK4] (last visited Nov. 8, 2025); *see also* Max Birmingham, *On the Waterfront: Dissecting the Scope of Erisa Section 510*, 38 HOFSTRA LAB. & EMP. L.J. 313, 353 (2021) ("The Sixth Circuit makes an *argumentum ad lapidem* ('appeal to the stone') by dismissing the argument for a broad interpretation of Section 510 [of ERISA] as absurd without demonstrating proof for its absurdity.").

77. *See, e.g.*, *In re* A.H., 414 S.W.3d 802, 807 (Tex. App.—San Antonio 2013, no pet.) ("[C]onclusory testimony, such as the caseworker's, even if uncontradicted, does not amount to more than a scintilla of evidence. And, '[a]lthough [a parent's] behavior may reasonably suggest that a child would be better off with a new family, the best interest standard does not permit termination merely because a child might be better off living elsewhere.'" (quoting *In re* W.C., 98 S.W.3d 753, 766 (Tex. App.—Fort Worth 2003, no pet.))).

78. Kimberly Nguyen, *If I Did it by OJ Simpson: If He Did It, Would It Matter?*, 3 CRIM. L. BRIEF 38, 38 (2007) (reviewing O.J. SIMPSON, IF I DID IT: CONFESSIONS OF THE KILLER (Beaufort Books 2007)).

79. *See id.*

80. *See id.*

81. *See* Smith, *supra* note 68.

and a conclusion that results (with certainty or at least with some likelihood) from applying law to fact.[82] The argument about the glove is a classic syllogistic argument:

Elements of a Syllogism	**Argument**
Major Premise (Rule)	If the glove doesn't fit, then you must acquit
Minor Premise (Fact)	The glove doesn't fit
Conclusion (Result)	Therefore, you must acquit[83]

Legal argument can be far more convoluted than the point about the glove, and that density can make it difficult to spot poor reasoning hiding under a pile of rhetoric. This is why many judges already use the language of formal logic in their rulings. For instance, in

82. *See* Stephen M. Rice, *Conspicuous Logic: Using the Logical Fallacy of Affirming the Consequent as a Litigation Tool*, 14 BARRY L. REV. 1, 4–8 (2010) [hereinafter *Conspicuous Logic*].

83. Notably, the prosecutor in OJ Simpson's case took issue with the major premise, arguing that the leather gloves likely shrunk after the police froze and thawed them several times in order to preserve them in evidence. *See* Douglas O. Linder, *Testimony of Richard Rubin*, FAMOUS TRIALS: ACCTS. AND MATERIALS FOR 100 OF HIST.'S MOST IMPORTANT TRIALS, https://famous-trials.com/simpson/1887-rubintestimony [https://perma.cc/K3QH-6PZA] (last visited Nov. 8, 2025) (trial transcript excerpt of Richard Rubin's testimony, in which he estimated the glove would have shrunk by approximately 15%); Transcript of Record, People v. Simpson, No. BA097211 (Cal. Super. Ct. Sept. 25, 1995), http://simpson.walraven.org/sep26.html [https://perma.cc/AG93-GMK5] (last visited Nov. 8, 2025) (transcript of the prosecutor's closing argument). Most legal arguments leave ample room to debate about the truth and its implications, but that debate will be more precise and organized if the argument itself is more precise and organized in one's mind. Aristotle's three-part form offers a coherent way to understand and visualize the arguments we make and defend against, allowing us to pinpoint areas of disagreement.

a pharmaceutical case, Justice Ketanji Jackson Brown described the text of a statute's exclusivity provision as employing "the familiar and readily diagrammable formula, 'if x and y, then z.'"[84] Attorneys can use that same clear, simple, visual thinking to isolate the flow of reasoning from even the wordiest arguments and statutes:

Natural Language	**Simplified Language**	**Formal Language**
If the glove doesn't fit, you must acquit	If A is True, Then B is True	$A \rightarrow B$
As you all saw, that glove didn't fit	A is True	A
That's exactly why you have to acquit my client	Therefore, B is True	$\therefore B$

Of course, arguments in practice rarely present themselves as syllogisms. That arrangement requires some translation, to pull the bits and pieces of reason out of the rhetoric.[85] To assist with that translation, formal logic categorizes nearly all key terms in an argument into four logical connectives: conditional statements (if-then), biconditional statements (if and only if), compound statements (and-or), and negations (no-not).[86] The following expressions offer some of the most common language that matches each logical connective:

84. Depomed, Inc. v. U.S. Dep't of Health & Hum. Servs., 66 F. Supp. 3d 217, 230 (D.D.C. 2014).

85. *See Indiscernible Logic*, *supra* note 4, at 114.

86. *Propositional Logic*, *supra* note 68.

Role	Natural Language	Simplified Language	Formal Language
Con-ditional	It's always x when y This because that If this, then that This, so that This, provided that… This, assuming that… This, in the event that… This, given that… This, on condition that… This leads to that This results in that This, as long as…	If-Then	→
Bicon-ditional	If and only if On the sole condition Exclusively Limited to With one exception	Only	⇆[87]

87. Notably, the equals sign for "therefore," "hence," "accordingly," "as a result" and comparable terms appears nowhere on this table because it does not function as a logical connective. Instead of connecting terms in an argument, it serves as a typographic cue that signals what flows from or is caused by the premises. PETER SMITH, AN INTRODUCTION TO FORMAL LOGIC 110 (2003) ("Rather oddly, counting ∴ as part of PL [propositional logic] is not standard; but we are going to be very mildly deviant. . . . We want to be able to translate vernacular arguments into a language in which we can still express arguments; and that surely means not only that the individual wffs of PL should be potentially contentful, but also that we should have a way of stringing wffs together which signals that an inference is being made.").

Con-junction	And But[88] Both Neither Not only, but also As well as In addition Furthermore Moreover Together with	And	&[89]
Dis-junction	Or Alternatively Otherwise At the option of Unless Except	Or	v[90]
Negation	No Not / Cannot Never / None Without / Lacks Fails to Excludes / Denies	Not	¬

88. Perhaps counterintuitively, "but" and "and" are logically interchangeable terms, for all the same reasons that the following two statements are interchangeable:

"She is a lawyer but she's not practicing anymore."

"She is a lawyer and she's not practicing anymore."

In that example, both "but" and "and" connect two statements that are true, with the only difference being that "but" tends to add a sense of contrast, surprise, or negativity to the conjunction. "But" does not negate the statement.

89. Traditionally, logicians represent conjunctions with the standard symbol "∧." For simplicity's sake, this Article uses the ampersand ("&") to signify conjunctions.

90. To associate this "∨" symbol with disjunctive language, it can help to envision it as symbolizing a person with outstretched arms, willing to accept either this *or* that (or possibly even both, for inclusive disjuncts). By contrast, the standard conjunction symbol "∧" appears to be the letter "A" standing in for the word "and."

The first step in this Article's proposed method of reasoning is to spot these terms in an argument and simplify them into formal language. This makes the issue visually clear and logically precise, leaving it as a problem half-solved already.[91] The next step is to then evaluate whether the resulting syllogistic form is valid. This Section presents three core forms of valid argument: *modus ponens*, wholly hypothetical syllogism, and *modus tollens*.[92]

1. Valid Syllogism: Modus Ponens

The most basic and widely used valid form is *modus ponens* ("method of affirming").[93] It argues that if A always causes B, and A happens, then by definition B must also happen.[94] The flow of reasoning here is known as "affirming the antecedent," because the conclusion necessarily flows from the minor premise confirming that the "if" portion of the argument creating the condition "A" is true.[95] If the antecedent is true, then the "then" portion of the argument creating the outcome "B" must also be true.[96] In effect, this setup reiterates the rule in major premise: if A, then B.[97] To help visualize those definitions:

If the glove doesn't fit, *then you must* acquit

Antecedent *Inference* Consequent

Modus ponens is not profound, but it is disciplined. *Modus ponens* ensures that once a judge, jury, client,

91. To paraphrase John Dewey, a problem well defined is a problem half-solved. Mara D. Afzali, Note, *Letting Sleeping Dogmas Lie: A Response to Judge Posner's Call to Reform the Res Gestae Exceptions to the Rule Against Hearsay*, 80 ALB. L. REV. 595, 604 (2017) ("[A] problem well put is half-solved" (quoting JOHN DEWEY, *The Pattern of Inquiry*, *in* LOGIC: THE THEORY OF INQUIRY 101, 108 (1938))).

92. *See* DAVID CARL WILSON, A GUIDE TO GOOD REASONING: CULTIVATING INTELLECTUAL VIRTUES, 222–30, (2d ed. 2020), https://open.lib.umn.edu/goodreasoning/chapter/if-then-arguments/ [https://perma.cc/56LL-M7MJ].

93. *See id.*

94. *See id.* at 222.

95. *See id.*

96. *See id.*

97. *Id.*

supervisor, or any other person accepts an "if-then" rule (which is virtually every rule in legal reasoning), and once that "if" triggering condition takes place, the outcome is no longer discretionary. The result may be counterintuitive or disagreeable, and yet it is unavoidably correct as a matter of logic.

2. Valid Syllogism: Wholly Hypothetical Syllogism

A similar line of reasoning connects two hypothetical statements (in other words, "if-then" statements) to reach a new conclusion.[98] This reasoning is very common in legal writing, as both briefs and court opinions typically overview the applicable rules and exceptions to create a "domino effect" of reasoning. For example: "If the evidence is obtained without a warrant, then it violates the Fourth Amendment. If evidence violates the Fourth Amendment, then it is inadmissible in court. Therefore, evidence obtained without a warrant is inadmissible."

Natural	**Simplified**	**Formal**
If the evidence is obtained without a warrant, then it violates the Fourth Amendment.	If A, Then B	$A \rightarrow B$
If evidence violates the Fourth Amendment, then it is inadmissible in court.	If B, Then C	$B \rightarrow C$
Therefore, if evidence is obtained without a warrant, then it is inadmissible.	Therefore, If A, Then C	$\therefore A \rightarrow C$

98. Susanne Bobzien, *Ancient Logic*, THE STAN. ENCYCLOPEDIA OF PHIL. (Apr. 15, 2020), https://plato.stanford.edu/entries/logic-ancient/#WhoHypSyl [https://perma.cc/PRH5-FCW4] (discussing the wholly hypothetical syllogism and crediting Theophrastus with its invention).

This syllogism is known as a "wholly hypothetical syllogism" because its conclusion translates the connection between two hypothetical syllogisms.[99] "If A, then B" and "if B, then C" are strangers until the conclusion shows that they actually create a domino effect: if, hypothetically, A takes place, then C will eventually take place as well.[100]

3. Valid Syllogism: Modus Tollens

The third valid structure is known as *modus tollens* ("method of denying"), and it holds that if a statement is true, then so is its contrapositive.[101] In other words:

If A, Then B	$A \rightarrow B$
B is Not True	$\neg B$
Therefore, A is Not True	$\therefore \neg A$

If A always causes B, and B has not taken place, then A must not have taken place either.[102] This form of reasoning is known as "denying the consequent" because the argument is based on denying the consequent term ("B").[103] For example:

If it's snowing, then it's cold outside	$A \rightarrow B$
It's not cold outside	$\neg B$
Therefore, it can't be snowing	$\therefore \neg A$

This would also hold true in larger, multi-part arguments, such as:

99. *See id.*
100. *See id.*
101. *See* WILSON, *supra* note 92, at 222.
102. *See id.*
103. *See id.*

If it's snowing or if trucks are salting the roads, then it's cold outside	A v B → C
It's not cold outside	¬ C
Therefore, it's not snowing and trucks are not salting the roads outside	∴ ¬ A & ¬ B[104]

As tempting as it is to think that there must be other forms of necessarily true arguments, any deviation from these three forms is a logical dead end that cannot support an if-then legal argument (or any conditional argument).[105] The next Section covers the most common formal fallacies in legal arguments.

B. Formal Fallacies: Propositional Fallacies

A fallacy, at least as far as this Article is concerned, is false reasoning.[106] Some reasoning is flawed or weak, but fallacious reasoning is demonstrably incorrect.[107] "Fallacy" stems from the Latin word *fallacia*, meaning "trick" or "deceive" because fallacies often sound convincing and conceal their invalidity.[108] They tend to make common sense, especially if they satisfy the

104. Notably, the rule "A or B" became "A & B" once negated, because the opposite of "A is true or B is true" would be "neither A nor B are true." This is the logical equivalent of the statement, "Both A and B are not true." This method of preserving the logical consistency of a rule when negating it is known as De Morgan's Law. *See* Stephen M. Rice, *Leveraging Logical Form in Legal Argument: The Inherent Ambiguity in Logical Disjunction and Its Implication in Legal Argument*, 40 OKLA. CITY U. L. REV. 551, 575 (2015) [hereinafter *Leveraging Logical Form*].

105. *See* WILSON, *supra* note 92, at 230–40.

106. *See Conspicuous Logic*, *supra* note 82, at 8–9.

107. *See id.*

108. *Fallacy*, ETYMONLINE, https://www.etymonline.com/word/fallacy [https://perma.cc/TVD6-BKXA] (last visited Feb. 15, 2026).

listener's preconceived notions.[109] If the form of an argument is invalid, it commits a formal fallacy.[110]

Even if true, such premises are incapable of supporting any conclusion.[111] Among the most common formal fallacies are propositional fallacies, which involve mistakes about the relationship between statements ("propositions").[112] The two most common formal propositional fallacies are affirming the consequent or denying the antecedent.[113]

1. Invalid Syllogism: Affirming the Consequent

This Article began with a formal propositional fallacy:

If you have a reasonable doubt, then you will hesitate	$A \rightarrow B$
You hesitate	B
Therefore, you have a reasonable doubt	$\therefore A$

That argument is known as "affirming the consequent," because its conclusion results from the minor premise confirming ("affirming") that the consequent term ("B") is true.[114] This reasoning assumes, without evidence, that reasonable doubt is the *only* cause of hesitation. After all, if there are any other causes of hesitation (such as confusion, fatigue, or even an unreasonable doubt), then hesitation would not automatically or necessarily indicate a reasonable doubt.[115] As such, this reasoning misinterprets the rule

109. *See Conspicuous Logic*, *supra* note 82, at 8–9.

110. *See id.* at 1, 8–9.

111. *See Argument's Design*, *supra* note 49.

112. Stephen M. Rice, *Conventional Logic: Using the Logical Fallacy of Denying the Antecedent as a Litigation Tool*, 79 MISS. L.J. 669, 679 (2010) [hereinafter *Conventional Logic*].

113. *See id.* at 679–80.

114. *See Conspicuous Logic*, *supra* note 82, at 15.

115. *See id.*

("if you have a reasonable doubt, then you will hesitate"), because the rule never suggested that reasonable doubt is the *only* cause of hesitation.

2. Invalid Syllogism: Denying the Antecedent

Another common propositional fallacy comes from denying the antecedent.[116] In *Zinpro Corp. v. Ridenour*, an employee challenged the enforceability of a confidentiality agreement, and the employer argued that the court lacked jurisdiction.[117] The employer argued that the employee failed to establish that litigation was imminent, and according to the court's precedent, a controversy is justiciable when litigation is imminent.[118] In effect, the employer argued as follows:

If litigation is imminent, then the controversy is justiciable	$A \rightarrow B$
Litigation is not imminent	$\neg A$
Therefore, the controversy is not justiciable	$\therefore \neg B$

This reasoning may make common sense, but it will never make logical sense because it is based on the same erroneous assumption as the previous fallacy, namely the assumption that A and only A causes B.[119] If A is one of any number of things that can cause B, then removing A from the equation does not necessarily mean that B cannot happen.[120] In *Zinpro*, the court explained that fallacy, then ruled that the imminence of litigation is

116. WILSON, *supra* note 92, at 222–23.

117. No. 07-96-0008-CV, 1996 Tex. App. LEXIS 3380, at *3 (Tex. App. Aug. 1, 1996); *see Conventional Logic*, *supra* note 112, at 684–85.

118. *Conventional Logic*, *supra* note 112, at 684–86.

119. *See id.*

120. *See id.*

only one of many factors that cause a controversy to be justiciable.[121]

3. Invalid Syllogism: Misapplying Logical Connectives

The remaining formal propositional fallacies are self-evidently incorrect, as they misapply the logical connectives in the argument. For example, it would be a formal propositional fallacy to interpret negation as affirmation and vice versa, to interpret conjunction as disjunction or vice versa.

C. Biconditional Statements

When A and *only* A causes B, the two terms entail each other; they will always be both present or both absent.[122] As Aristotle put it, such terms "come into existence simultaneously," and if either does not exist, then they "cancel one another."[123] After all, if *only* pneumonia causes coughing, then of course coughing is a sure sign of pneumonia. An "only" statement is known as a biconditional statement, and in a biconditional statement each of the four propositional forms is valid.

	Major Premise	**Minor Premise**	**Conclusion**
Affirming the Antecedent (*Modus Ponens*)	$A \leftrightarrows B$	A	$\therefore B$

121. *See id.*

122. *See* Edwin Mares, *Propositional Function*, THE STAN. ENCYCLOPEDIA OF PHIL. (Nov. 22, 2022), https://plato.stanford.edu/entries/propositional-function/ [https://perma.cc/B4QM-EJ5P].

123. ARISTOTLE, CATEGORIES 17 (E. M. Edghill trans., Univ. of Adelaide Libr. 2007), https://homepages.uc.edu/~martinj/History_of_Logic/Aristotle/Aristotle%20-%20Categories%20-%20Edghill%20trans.pdf [https://perma.cc/3UZR-LNRU]. *See generally Categories*, *in* ORGANON OF ARISTOTLE (Bekker ed.) (discussing correlatives as two beings whose names imply each other and cannot exist separately); POSTERIOR ANALYTICS, *supra* note 20, at 210 (discussing biconditionals as terms that are "convertible" and mutually predictive of one another).

Denying the Consequent (*Modus Tollens*)	A ⇆ B	¬ B	∴ ¬ A
Affirming the Consequent	A ⇆ B	B	∴ A
Denying the Antecedent	A ⇆ B	¬ A	∴ ¬ B

For example, consider the convoluted argument: "The court cannot render judgment on the merits, except in one case: it has jurisdiction." To simplify, replace the double negative in "cannot x . . . except in one case: y" with its affirmative contrapositive: "If and only if y, then x." As in: "If and only if the court has jurisdiction, then it can render judgment on the merits." Because this is a biconditional statement, each of the four propositional forms are now valid:[124]

> *Affirming the Antecedent*: "The court has jurisdiction, so it can render judgment."
>
> *Denying the Consequent:* "The court can't render judgment, so it must lack jurisdiction."
>
> *Affirming the Consequent*: "The court can render judgment, so it must have jurisdiction."
>
> *Denying the Antecedent*: "The court lacks jurisdiction, so it cannot render judgment."

Testing rules, and especially biconditional rules, against all four propositional forms helps ensure their accuracy. Otherwise, common sense might not detect the misstatement in common sense rules such as, "You cannot be convicted of murder unless the killing was premeditated." Testing that rule against the table above would result in some absurd conclusions, including the conclusion (from denying the consequent) that if someone cannot be convicted of murder, then it must be

124. *See* POSTERIOR ANALYTICS, *supra* note 20, at 210 (discussing biconditionals as terms that are "convertible" and mutually predictive of one another).

that there was insufficient evidence of premeditation. In reality, any number of things can result in the inability to convict someone of murder, even with ample premeditation evidence.

D. Formal Fallacies: Term-Distribution Fallacies

Where propositional fallacies misuse their propositions by wrongly assuming that A and only A causes B, term-distribution fallacies misuse their terms by wrongly assuming something about *all* members of a term.[125] In logic, to "distribute" a term is to say something about every member of that term.[126] For example, the claim that "all cats are animals" distributes the term "cats" by stating that every cat counts as an animal. But the claim says nothing about what is true of all "animals," so the term "animals" remains undistributed.

There are three terms that a syllogism can distribute: the major term, minor term, and middle term.[127] The major term is the predicate (second part) of the conclusion, the minor term is the subject (first part) of the conclusion, and the middle term connects those two terms, by appearing in the premises but not conclusion.[128] To illustrate:

All **men** are *mortal*
Socrates is a **man**
Therefore, Socrates is *mortal*

In the syllogism above, "men/man" is the middle term that connects the person Socrates to the characteristic of being mortal, while "*mortal*" is the major term describing the characteristic and "Socrates" is the minor term describing the person. There is no issue with that syllogism, because "**all men**" distributes the

125. *See* Stephen M. Rice, *Indispensable Logic: Using the Logical Fallacy of the Undistributed Middle as a Litigation Tool*, 43 AKRON L. REV. 79, 88–94 (2010) [hereinafter *Indispensable Logic*].

126. *See id.*

127. *Indiscernible Logic*, *supra* note 4, at 116.

128. *Id.* at 115–16.

middle term "men" by revealing something about everyone who is male, and the minor premise and conclusion distribute the minor term "Socrates" by revealing something about everyone who was ever Socrates the Greek philosopher. Because the conclusion does not distribute the major term "*mortal*," the premises have no logical need to distribute it.

1. The Fallacy of the Undistributed Middle Term

Failing to distribute a term is an easy mistake to make, and a difficult mistake to notice, especially in complex legal disputes. According to at least one court of appeals, this makes arguments with undistributed terms "a perennial vexation in appellate litigation."[129] That case involved the Fallacy of the Undistributed Middle Term, which Aristotle discussed in *Prior Analytics*: "Whenever . . . three terms are so related to one another that the last is [contained] in the middle as a whole[,] and the middle is either [contained] in or not [contained] in the first as a whole, it is necessary for there to be a complete deduction of the extremes." [130]

To spell that out in natural language, consider: "Everyone that the university expelled last year cheated on their final exam. All of the foreign exchange students were just caught cheating on their final exam. Therefore, precedent requires that the university expel all of the foreign exchange students."

Simplified into formal language, the flow of that argument is as follows:

Natural	**Simplified**	**Formal**
Everyone who was expelled had cheated.	If Expelled, Then Cheated	$A \rightarrow B$
Every foreign exchange student cheated.	If Foreign Exchange, Then Cheated	$C \rightarrow B$

129. Cooper v. Singleton, 94 A.3d 250, 258 (Md. App. 2014).
130. PRIOR ANALYTICS, *supra* note 19, at 3.

Therefore, every foreign exchange student must be expelled.	Therefore, If Foreign Exchange, Then Expelled	∴ C → A

That argument distributes both the major and minor terms by revealing something about all persons who were expelled and all foreign exchange students. But the argument reveals nothing about what is true for all persons who cheat. This differs in one crucial way from valid syllogistic form:

All **men** are *mortal* Socrates is a **man** Therefore, Socrates is *mortal*	All *Expelled Persons* Had **Cheated** All Foreign Exchange Students Had **Cheated** Therefore, All Foreign Exchange Students Must Be *Expelled*

The key difference lies in distribution. In the Socrates example, the middle term (**men/man**) connects the universal rule ("all **men** are *mortal*") to the individual case about Socrates. If all A are B, and Socrates is A, then Socrates is necessarily also B. By contrast, the university example has two independent conditionals with a shared consequent: All A are B, and all C are B. It is unclear what, if anything, must be true of all B, because each premise leaves B undistributed. As a result, the evidence does not support the argument that if all A are B and all C are B, then all C must be A.

A conclusion about what is true of all cheaters may make a great deal of common sense, but the invalid form of the argument means that it will never make logical

sense.[131] Because the premises never distributed the term "cheater," we can do no more than guess at what must be true of all cheaters.[132] Does the university always expel all cheaters, even if they are foreign exchange students, even if they cheat on some exam other than the final exam?

"Yes" may be a reasonable argument. But it is an argument based on a guess, and that guess is based on an unjustified hunch or assumption about how the term "cheaters" must be distributed. Such reasoning is grounded in moral certainty, not logical certainty, because the premises did not define what must be true of all cheaters. To argue with certainty in a case like this is to confuse intuition with inference, and to substitute inference for evidence.

2. The Fallacy of the Illicit Major

The same logical issue arises in arguments that distribute their major or minor terms in their conclusion but not in their premises.[133] Consider the following arguments:

In an armed conflict, lawful combatants may be intentionally targeted at any time.
No civilian is a lawful combatant.
Therefore, no civilian may be directly targeted at any time.

* * *

If you're registered to vote, then you can vote in federal U.S. elections
If you're not a convicted felon, then you can register to vote
So, if you're not a convicted felon, then you can vote in federal U.S. elections

* * *

131. *See Indispensable Logic*, *supra* note 125, at 89–93.
132. *See id.*
133. *See Indiscernible Logic*, *supra* note 4, at 119.

All cats are animals
No dogs are cats
Therefore, no dogs are animals

In these examples, common sense is enough to show that the "animal" example is absurd, but that same common sense was likely asleep in the two logically identical arguments before it. When we replace the rhetoric and our preconceived notions about that rhetoric with formal language, the error becomes more apparent:

All A are B
No C are A
Therefore, no C are B

Each of the arguments in this Section use the basic form of argument above—and in each case, the fundamental problem is that they assume *only* A are B.[134] If only A are B, and no C are A, then of course no C are B. For example, only cats are felines, since "feline" refers to a type of cat. Since no dogs are cats, and only cats can be felines, then it must be true that no dogs are felines. But cats are not the only kind of animal. Far from it; cats are one of countless types of animals, and dogs are simply another type of animal.

Similarly, "if you're not a convicted felon, then you can vote" assumes that there are no other voting restrictions. It also oversimplifies the law in the first place, as some convicted felons can still vote. "No civilian is a lawful combatant, therefore no civilian may be intentionally targeted" assumes that only lawful combatants may be intentionally targeted, when in fact unlawful combatants are also targetable for as long as they directly participate in hostilities.[135]

The failure in each argument results from the conclusion distributing a term (in this case, the major term) that went undistributed in the premises. This

134. *See id*. at 127.

135. *See* Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts (Protocol I), art. 51(3), June 8, 1977, 1125 U.N.T.S. 3 ("Civilians shall enjoy the protection afforded by this Section, unless and for such time as they take a direct part in hostilities.").

term-distribution fallacy is especially tricky, as an astute observer might ask what distinguishes any of these arguments from Aristotle's classic example of valid form: "All men are mortals. Socrates is a man. Therefore, Socrates is a mortal." After all, both types of argument seem to use the same form:

All **men** are *mortal*	All **cats** are *animals*
Socrates is a **man**	No dogs are **cats**
Therefore, Socrates is *mortal*	Therefore, no dogs are *animals*

Both forms of argument seem to be identical, but "Socrates is *mortal*" is an affirmation, while "no dogs are *animals*" is a negation. "Socrates is *mortal*" reveals something about everyone who was ever Socrates the Greek philosopher, but it does not reveal something about everyone who is mortal. By contrast, "no dogs are *animals*" distributes both "dogs" and "animals" by excluding every dog from the class of "animals" and every animal from the class of "dogs."

As a result, the second argument distributes the major term "*animals*" in the conclusion but not in the premises. This failure in reasoning is more than merely technical, like a misplaced comma. Instead, it robs the argument of any probative weight.[136] Any argument using that form is an argument that badly overstates the evidence.[137] If a court order or jury instructions are based on such deeply flawed reasoning, then the fallacy of the illicit major offers compelling grounds for appeal.

136. *See Indiscernible Logic*, *supra* note 4, at 109–10.
137. *See id.*

3. The Fallacy of the Illicit Minor

The fallacy of the illicit minor makes a similar mistake, except for the minor term. Consider the following arguments:

All of these vicious Google reviews written by John Smith make false claims of fact.

All of these vicious Google reviews written by John Smith are about my client.

Therefore, all of the vicious Google reviews about my client make false claims of fact.

* * *

All patients treated by Dr. Jones in 2025 were badly injured.

All patients treated by Dr. Jones in 2025 were undergoing his new surgical procedure.

So, all patients who underwent his brand new procedure were badly injured.

* * *

All cows go "moo."

All cows are animals.

Therefore, all animals go "moo."

Again, common sense might not catch the issue with this form of argument until it supports a conclusion as intuitively false as "all animals go 'moo.'" The arguments above illustrate the fallacy of the illicit minor, and they each argue as follows:

All A are B

All A are C

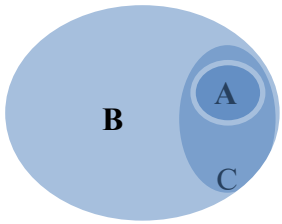
Therefore, all C are B

The error in reasoning here is that the conclusion distributes a term, C, that went undistributed in the premises. Indeed, premises only distribute one term—the middle term, A. The premises say nothing about what is true of all Bs and Cs, leaving us with no reason to believe anything about all Cs or all Bs. The most that the conclusion can accurately argue is that all Cs *could be* Bs. That would be one of many scenarios that could be

true. Perhaps all Bs are Cs instead, or only some Bs are Cs, or perhaps Bs and Cs have nothing in common.

Similarly, in the Google reviews argument, it could be true that "all of the vicious Google reviews about my client make false claims of fact," assuming John Smith was the only source of these defamatory statements. In the Dr. Jones argument, it could be true that "all patients who underwent his brand-new procedure were badly injured," but only if Dr. Jones was the only person performing his brand-new procedure. These are critical assumptions to make; in high-stakes litigation, attorneys must leave no rock unturned and no assumption unexamined. Arguments are only as strong as their weakest assumption.

To make these distribution issues clearer,[138] attorneys can turn to Euler diagrams, which illustrate term relationships visually:[139]



In the Euler diagram above, the terms A, B, and C represent groups, and this diagram illustrates a case in which all A are B, and all A are C as well. However, it would be absurd to conclude that all C must be B, because the rules "all A are B" and "all A are C" can result in several conflicting options, including:

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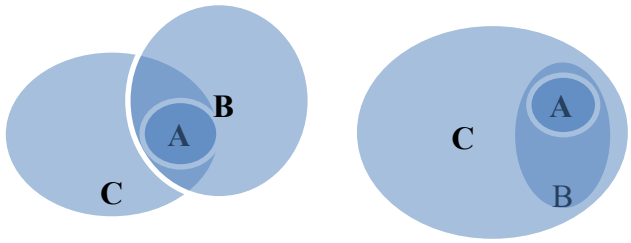
138. *See* Yuri Sato, Koji Mineshima & Ryo Takemura, *The Efficacy of Euler and Venn Diagrams in Deductive Reasoning: Empirical Findings*, *in* DIAGRAMMATIC REPRESENTATION AND INFERENCE 6, 6 (Ashok K. Goel, Mateja Jamnik & N. Hari Narayanan eds., 2010), https://link.springer.com/chapter/10.1007/978-3-642-14600-8_6 [https://perma.cc/K6UH-FGDG].

139. John Venn popularized the diagram style of representing sets and relationships in 1880, but this diagrammatic way of representing sets and relationships is known as "Euler Diagram" instead of "Venn Diagram" because the Venn Diagram shows all possible relations between different sets, while the Euler Diagram shows only the relevant relationships. Thus, while a Euler Diagram would show "cat" as a type of "animal" and say nothing further, a Venn Diagram of animals would list every possible animal. *See id.*



Applied to the defamation case, the diagram to the left shows the possibility that all of the Google reviews written by John Smith (A) make false claims of fact (B) and are about "my client" (C), with only some overlap between all of the Google reviews about "my client" and all of the Google reviews making false claims.

The second scenario shows the possibility that all the articles making false claims of fact are making false claims about "my client." Perhaps it is a reasonable assumption that not every nasty Google review in existence is about "my client," but diagramming rules and their implications can help attorneys spot the often-subtle assumptions that arguments are (reasonably or unreasonably) taking for granted.

4. Remaining Term Distribution Fallacies

The propositional and term-distribution fallacies above address the most complex rules of valid syllogistic logic, namely: a syllogism must have a major term, minor term, and middle term; that middle term must be distributed at least once, in order to connect the major and minor terms; and a term that the conclusion distributes must also be distributed in at least one premise.[140]

The remaining term distribution fallacies require less explanation, and they all stem from the rule that the conclusion must agree with the quality (affirmative/negative) and quantity (particular/universal) of the premises.[141] For example, two negative

140. *See* Khemlani & Johnson-Laird, *supra* note 55, at 429–30.
141. *See id.*

premises or two particular premises cannot support any argument, as they create no shared ground on which to draw a conclusion.[142] The conclusion must be negative if either premise is negative, and it must be particular if either premise is particular, because negative and particular premises limit what a conclusion can support.[143] Lastly, the conclusion must be affirmative if both of its premises are affirmative, and it must be universal if both of its premises are universal.[144]

The following graph diagrams the valid and invalid forms that flow from these rules:

Propositional Forms	**Major Premise**	**Minor Premise**	**Con-clusion**
Affirming the Antecedent (*Modus Ponens*)	$A \rightarrow B$	A	$\therefore B$
Denying the Consequent (*Modus Tollens*)	$A \rightarrow B$	$\neg B$	$\therefore \neg A$
Affirming the Consequent	$A \rightarrow B$	B	$\therefore A$
Denying the Antecedent	$A \rightarrow B$	$\neg A$	$\therefore \neg B$
Term-Distribution Fallacies	Conditional Phrase	Conditional Phrase	Conclusion
Undistributed Middle Term	$A \rightarrow B$	$C \rightarrow B$	$\therefore C \rightarrow A$
Undistributed Major Term	$A \rightarrow B$	$\neg C \rightarrow A$	$\therefore \neg C \rightarrow B$
Undistributed Minor Term	$A \rightarrow B$	$A \rightarrow C$	$\therefore C \rightarrow B$
Distributing Two Negative Premises	Negative	Negative	None
Distributing Two Particular Premises	Particular	Particular	None

142. *See id.*
143. *See id.*
144. *See id.*

Distributing One Negative Premise	Negative	Affirmative	Negative
Distributing One Negative Premise	Affirmative	Negative	Negative
Distributing Two Affirmative Premises	Affirmative	Affirmative	Affirmative
Distributing One Particular Premise	Particular	Universal	Particular
Distributing One Particular Premise	Universal	Particular	Particular

5. Conclusion

Despite all their many differences, each of the formal fallacies above commit the same basic error: mischaracterizing the evidence. In legal reasoning, structure is at least as important as substance. As the case law above demonstrates, legal arguments can collapse under the scrutiny of formal logic even when they make common sense, and even when they put forth the truth, the whole truth, and nothing but the truth.

Breaking arguments into syllogisms, diagrams, and formal language can tighten legal arguments, avoid unforced errors, highlight assumptions, and allow for clearer, more visual communication with juries, judges, clients, fellow attorneys, the public, and even ourselves. Validity alone does not guarantee that an argument will win, especially in hard cases, which often turn on probabilistic questions about how to best frame an issue, what facts and laws are relevant, and how competing policy preferences should be weighed. But a validity analysis can still discipline reasoning, cut out unsupported assumptions, and highlight the structural problems in poor reasoning.

The work of hard cases is carried out through informal logic: the evaluation of substantive claims, policy preferences, and theories with no guaranteed outcome. This experiential reasoning is the most common reasoning in law, to the point that legal realists

like Holmes considered it to be the life of the law. But what Holmes called experience is not the rejection of logic; it is logic of a different kind. The following section explores informal logic and its fallacies.

III. INFORMAL LOGIC AND ITS FALLACIES

"[A]n individual with a watch knows what time it is, but an individual with two is never sure."[145] Known as "Segal's Law,"[146] this quote exemplifies the difference between formal and informal reasoning. Formal reasoning offers a single watch: one that may be right or wrong, valid or invalid, but whose accuracy is knowable for certain through structure and the deductive reasoning we can apply to structure.[147] The logic of forms leaves no room for disagreement—at least, not in good faith.[148]

But certainty is rare in life and in law, aside from death and taxes. Informal logic begins where certainty ends. By analyzing whether a claim is more or less justifiable, with no fixed method for determining any

145. *See* James B. Pettengill & Hugh Rand, *Segal's Law, 16S rRNA Gene Sequencing, and the Perils of Foodborne Pathogen Detection Within the American Gut Project*, PEERJ, June 22, 2017, at 1, https://peerj.com/articles/3480/ [https://perma.cc/GN8Y-ES8C].

146. *See id.*

147. *See Conspicuous Logic*, *supra* note 82, at 3–4. "Deduction" comes from the Latin word *deducere*, "derive," because the deductive claim is contained within and is derived from the premises. *See Deduce*, ETYMONLINE, https://www.etymonline.com/word/deduce [https://perma.cc/7VM6-KTTV] (last visited Nov. 8, 2025). Thus, the conclusion introduces no new information to the argument; it merely restates the premises. By contrast, "induction" comes from Old French *inductif*, which means "bringing on, inducing." *See Inductive*, ETYMONLINE, https://www.etymonline.com/word/inductive [https://perma.cc/HC8D-HBR9] (last visited Nov. 8, 2025). Inductive conclusions bring on or introduce something new to their premises, so the extent to which these arguments make a "good" point depends on the substantive merits of the point itself, regardless of form. Naturally, inductive reasoning pairs well with informal logic, as the study of the substance of arguments.

148. This Article focuses on good faith argument, but for a fascinating look into the world of bad faith arguments and how to address them, see HARRY FRANKFURT, ON BULLSHIT (2005) (discussing the phenomena of intentionally bad reasoning, and arguing that the distinction between liars and "bullshitters," from an argumentation perspective, is that liars are concerned with the truth).

certain answer, informal logic allows for the equivalent of two watches: multiple, sometimes conflicting perspectives. The informal reasoning of informal logic is probabilistic, not certain, which leaves ample room for reasonable people to disagree.[149]

The challenge of informal reasoning, and by extension most legal reasoning, is not how to eliminate disagreement but how to objectively distinguish stronger arguments from weaker ones. This challenge is the normative problem of informal reasoning. Most theories of informal argument quality identify what a "strong argument" looks like but stop short of explaining which features make an argument strong in practice.[150]

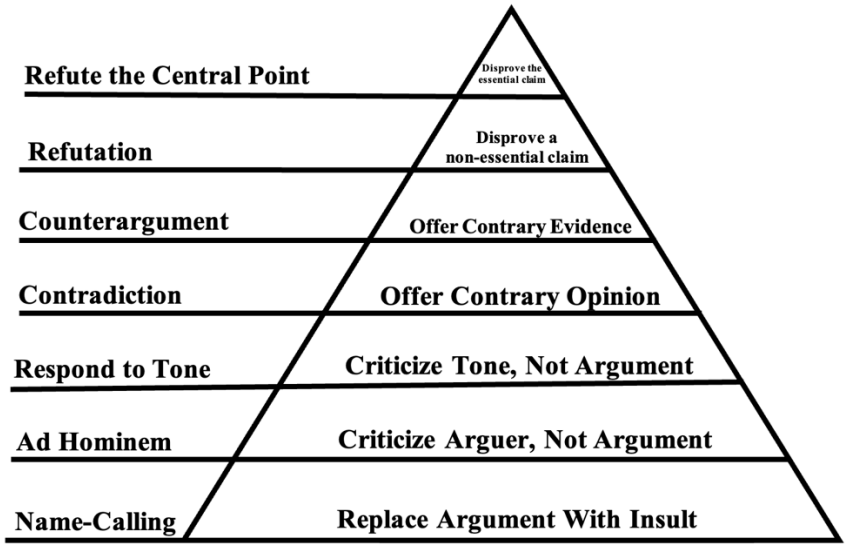
The theory of argumentation that comes closest to resolving the normative problem is Graham Hierarchy of Disagreement. In 2008, computer programmer Paul Graham proposed a model that arranges seven types of argument into a disagreement hierarchy.[151] This model of disagreement creates a pyramid, with the lowest-quality but most common forms of informal logic forming the base and the highest-quality but rarest forms of informal logic forming the top.[152]

149. *See Conspicuous Logic*, *supra* note 82, at 22.

150. Bayesian models, for example, define argument quality in terms of how much an argument raises the probability of a conclusion, but they do not explain which argumentative features produce these shifts in probability. Likewise, Toulmin's model specifies preferable argument structures, but does not explain what kinds of arguments or reasons satisfy those structures. Douglas Walton catalogued 96 patterns of argument in his "Argumentation Schemes" model, such as "Argument From Expert Opinion," "Argument From Cause to Effect," and "Argument From Analogy." But this catalogue functions as an encyclopedia of argument types, with no theory for what makes one argument any more persuasive than another.

151. *See* Paul Graham, *How to Disagree*, PAUL GRAHAM (Mar. 2008), https://paulgraham.com/disagree.html [https://perma.cc/HC8D-HBR9].

152. *Id.*



Graham's model captures the broad spectrum of informal arguments, from meaningless noise to substantive critique. It captures an important insight: even when reasonable disagreement is possible, some disagreements are still objectively stronger than others. However, Graham's model focuses more on rhetoric than logic. As a result, it contains several logical blind spots. For instance, "You're a high-school dropout" may be empty name-calling, or it may refute an essential claim, if an essential claim is, "Trust me, I'm a doctor." For that matter, what is an "essential" claim? When do the parties know if it has been "disproved"? Given its blind spots, Graham's model arguably tracks the levels of disagreeableness better than the levels of disagreement.

Legal reasoning has long since addressed these blind spots. In court, witnesses typically swear to three standards of truth: the truth, the whole truth, and nothing but the truth.[153] These are not merely redundant

153. In fact, several states require witness oaths to recite all three of those standards of truth. *See, e.g.*, FLA. STAT. § 90.605 (2024) (requiring oath to tell "the truth, the whole truth, and nothing but the truth"); WASH. REV. CODE

"legal doublets" like "cease and desist" or "null and void." Instead, each element captures a distinct but mutually reinforcing dimension of evaluating the quality of informal reasoning, as the following subsections will explore.

1. Nothing But The Truth (Coherence)

Critiques of informal argument tend to jump immediately into questions of fact, which can create endless argument and resolve nothing because the truth is uncertain in informal reasoning. Instead of asking whether the argument is defeated by facts or falsehoods, it can be far more efficient to ask whether the argument defeats itself. This is why it helps to begin the analysis of informal arguments by considering if they offer "nothing but the truth."

This is a question of coherence: do not add anything that does not fit with your own claim. The premises of an argument cohere when they support one another (internal coherence) and when they fit the uncontested facts and law (external coherence).[154] Coherent arguments are free from distortion, inconsistency, and contradiction, both internally and externally.[155]

For instance, coherence is the key question in a motion to dismiss or a motion for summary judgment: do the allegations, even if true, establish a legal claim? If not, then the truth of the matter is beside the point. Similarly, if a witness has prior inconsistent statements, then the inconsistency itself raises serious questions about why they are such unreliable narrators. Were they lying then, or are they lying now? Whatever the truth may be, the more incoherent an argument is with itself

§ 5.28.020 (2023) (same); GA. CODE ANN. § 17-8-52 (2023) (same); CAL. CIV. PROC. CODE § 2094 (West 2024) (same).

154. *See* Amalia Amaya, *Legal Justification by Optimal Coherence*, 24 RATIO JURIS 304, 314–16 (2011) (discussing internal and external coherence as "explanatory coherence" and "inference to the best explanation").

155. *See id.*

or with objective reality, the less believable both it and its arguer become.

2. The Whole Truth (Completeness)

Coherence is a useful starting point, but half-truths can be coherent. So, if an argument is coherent, then the next question is whether it is also "the whole truth." Where coherence adds depth to an argument, completeness adds breadth.[156] Arguments cohere when they thoroughly cover the landscape, but arguments are complete when they cover the entire relevant landscape, by addressing the full range of relevant fact and law.[157] Complete arguments do not tell a partial story; they do not leave out or suppress counterevidence, counter-explanations, and other gaps that are compelling enough defeat the argument.

In any informal argument, the core logical claim is that the premises sufficiently support the conclusion—in other words, that that the premises offer a complete enough picture to justify the conclusion.[158] For example, it may be true that the defendant caused the death of the victim, but it may also be true that the defendant did so in reasonable self-defense. For an even fuller picture, it may also be true that the defendant provoked the need to exercise reasonable self-defense, potentially barring that defense. To address that deadly incident, an argument must include all salient uncontested facts, laws, exceptions, and exceptions to exceptions. In short, this analysis reflects the idea that arguments can be

156. *See* Jeffery L. Johnson, *Explanation, Narrative, and Legal Argument*, 42 QUINNIPIAC L. REV. 215, 225–28 (2023) (discussing the need for legal arguments to make sense of all relevant facts).

157. *See id.*

158. RALPH H. JOHNSON, THE RISE OF INFORMAL LOGIC: ESSAYS ON ARGUMENTATION, CRITICAL THINKING, REASONING AND POLITICS 7 (John Hoaglund ed., Windsor Stud. Argumentation digital ed. 2014) (1996), https://tile.loc.gov/storage-services/master/gdc/gdcebookspublic/20/20/39/48/71/2020394871/2020394871.pdf [https://perma.cc/8YUE-5UQX] ("Blair and Johnson indicate that premises must be both relevant and provide sufficient support to the conclusion.").

defeated not only by falsehood and contradiction, but also by omission.

3. The Truth (Correspondence)

The last factor is the most difficult to resolve: whether a premise corresponds with reality. At times, the truth of the matter may be a specific factual question, verifiable by referencing a history book, videotape footage, dictionary, or some other source. Verifiability allows people to confirm that a claim is not mere opinion or mistaken eyewitness belief.[159] But often enough, the facts are contested and the sources conflict with each other instead of verifying anything. At that point, unless the burden of persuasion is high (for instance, unless "beyond a reasonable doubt" is the standard of evidence), the factfinder may need to rely on credibility as a tiebreaker.

But credibility findings should not be a matter of intuition, charisma, or personal preference. At its root, "credibility" does not mean "what I prefer to believe," but what is "worthy of belief."[160] As such, credibility assessments should be grounded in reason, based on objective, observable features that include specificity, corroboration, plausibility, reliability, and the absence of clear bias, motive, or self-interest that could distort perception, memory, or testimony. Credibility cannot replace truth, but it is often our best access to it.

4. Types of Informal Argument

The paragraphs above cover how to evaluate informal arguments, but not how to build these arguments. To complete that picture, this subsection lists the six most common types of informal argument:

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159. Debby Hutchins & David Kelley, *Fact and Opinion*, 43 INFORMAL LOGIC 352, 353 (2023) (distinguishing fact from opinion with the observation that facts exist outside the mind, while opinions exist only within it).

160. *Credibility, Bouvier Law Dictionary* (Stephen Michael Sheppard ed., Wolters Kluwer Law & Bus. 2012) (defining credibility as "worthiness of belief" and tracing its derivation to *credibilis*).

Inductive Generalization: Reasoning that makes broad claims from specific cases, for instance by arguing that someone lacks parenting skills because they failed drug tests and have a criminal history.[161]

Statistical Induction: Reasoning based on data taken from a large group,[162] for instance by pointing to an 86% failure rate in a device as evidence that it likely failed in this case as well.

Enumerative Induction: Reasoning by finding examples that support the claim, for instance by listing a number of suspicious facts as cumulatively proving that the defendant is guilty, even if no fact offers definitive evidence of guilt.

Eliminative Induction: Reasoning by process of elimination, for instance by listing a number of facts as cumulatively proving that the defendant is *not* guilty, even if no fact offers definitive evidence of innocence.[163]

Analogical Induction: Reasoning based on finding parallels between cases.[164] This line of reasoning is unavoidable in legal reasoning, as the principle of stare decisis funnels our arguments into comparing and contrasting precedent.[165] Analogical arguments invite endless argument, as no two examples are completely identical or completely unrelated.[166] The key question is

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161. *See* In the Interest of D.T., Nos. 07-19-00071-CV, 07-19-00072-CV, 2019 LEXIS 6079, at *21–23 (Tex. App.—Amarillo July 16, 2019) (memo op.) (noting the government's argument that "past is often prologue," reviewing the evidence of the parents' drug use, positive drug tests, and noting "the significance of the reasonable inference the parents were responsible for A.T.'s positive test for amphetamines and methamphetamine").

162. *See* Wang-Zhou Dai & Zhi-Hua Zhou, *Combining Logical Abduction and Statistical Induction: Discovering Written Primitives with Human Knowledge*, 31 PROC. OF ASS'N FOR ADVANCEMENT A.I. CONF. ON A.I. 4392, 4395 (2017).

163. *See generally* JOHN STUART MILL, A SYSTEM OF LOGIC III, ch. VIII (1843) (discussing eliminative methods of induction as the "Method of Agreement").

164. *See* Douglas Walton, *Argument from Analogy in Legal Rhetoric*, 21 ARTIFICIAL INTELLIGENCE & LAW 279, 279 (2013).

165. *See generally* William N. Eskridge, Jr. & Philip P. Frickey, *Statutory Interpretation as Practical Reasoning*, 42 STAN. L. REV. 321 (1990) (examining how analogical reasoning shapes statutory interpretation and influences subsequent precedent).

166. In his *Discourse on Metaphysics*, philosopher Wilhelm Gottfried Leibniz put it this way, in what is now known as Leibniz's Law: if any two separate

whether the relevant similarities outweigh the relevant dissimilarities.[167]

Abduction: Reasoning that infers the best explanation of an outcome.[168] This reasoning works backward, from effect to cause, for instance in order to build a theory of the case or reconstruct events based on available evidence. Abductively reframing an argument to its core principles can cut to the heart of the disagreement and even reveal that there is less distance between the parties than they thought.[169] Perhaps the parties are epistemologically close enough to find what

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objects had all the same properties, then they were never separate objects in the first place—they are the same object. *See* Peter Forrest, *The Identity of Indiscernibles*, THE STAN. ENCYCLOPEDIA OF PHIL. (July 13, 2006), https://plato.stanford.edu/archives/fall2008/entries/identity-indiscernible/ [https://perma.cc/8ZWH-YZP5]. As a result, no analogy is perfect, and any analogy can invite arguments about the strength of the analogy. At the same time, it would be difficult to find two objects with truly nothing in common. This is partly why the saying "that's like comparing apples to oranges" is somewhat absurd. Apples are by no means incomparable to oranges: both are round, both are fruits, both are healthy snacks, and both come from trees. The issue is not whether apples and oranges are incomparable; the issue is only whether their points of comparison are relevant to the issue at hand.

167. *See id.*

168. *See* Michael S. Pardo & Ronald J. Allen, *Juridical Proof and the Best Explanation*, 27 LAW & PHIL. 223, 223–34 (2008).

169. *See, e.g.*, Rob Eshman, *I Have the Answer to Jon Stewart's Toughest Question About Israel*, MSN (July 30, 2025), https://www.msn.com/en-us/politics/government/i-have-the-answer-to-jon-stewart-s-toughest-question-about-israel/ar-AA1JBdXA [https://perma.cc/35K2-T6LJ] (suggesting that the best way to have constructive dialogue about difficult political issues (instead of "static arguments") "is simply to ask one question: 'What do you want?'" This question turns the conversation to the arguers' core values, then utilizes those values to discuss the future and its solutions, not argue about the past and its problems—although, even for those intractable arguments, it may be more productive to focus on principles over facts. How many heated arguments about the Israeli-Palestinian conflict come down to a property law disagreement about whether superior claim to property belongs to first possessors or adverse possessors, or a tort law disagreement about whether responsibility for harm belongs to those who directly cause damages or those who proximately cause damages?); Scott Brewer, *Exemplary Reasoning: Semantics, Pragmatics, and the Rational Force of Legal Argument by Analogy*, 109 HARV. L. REV. 923, 946, 1024–25 (1996) (analyzing how foundational values, such as fairness and plausibility, underpin the arguments in legal disputes); H.L.A. HART, THE CONCEPT OF LAW 88–107 (2d ed. 1994) (discussing the foundational principles of law).

some scholars refer to as a "zone of possible agreement."[170]

5. Conclusion

Even when done well, informal reasoning operates in the space between certainty and speculation. When formal proof is unavailable, attorneys still have six forms of informal argument and three standards—the truth, the whole truth, and nothing but the truth—for how to evaluate the relative strength of those arguments. A strong informal argument is coherent internally and externally, sufficient to prove its point, and precise about what its point is. The next Section explores the opposite type of informal argument, by covering arguments that are ambiguous, incomplete, and irrelevant. If an argument does not tell the truth, the whole truth, and nothing but the truth, it likely runs into one or more of the fallacies of ambiguity, presumption, and relevance.

C. Informal Fallacies of Ambiguity

Reasonable people can disagree about how strong or weak an informal argument may be, but an informal fallacy does not describe a weak argument; it describes a failed argument.[171] Where a weak argument should lose, a failed argument *must* lose. Aristotle distinguished between linguistic and non-linguistic fallacies and identified 13 patterns of fallacies.[172] Since then, scholars have catalogued hundreds if not thousands more

170. Katie Shonk, *How to Find the ZOPA in Business Negotiations*, PROGRAM ON NEGOTIATION AT HARVARD LAW SCHOOL: DAILY BLOG (Feb. 2020), https://www.pon.harvard.edu/daily/business-negotiations/how-to-find-the-zopa-in-business-negotiations/ [https://perma.cc/H2S9-WRYG] (last visited July 26, 2025).

171. Eylem YENİSOY Şahin, *Logical Fallacies*, *in* CURRENT TOPICS IN SOC. SCI. 116, 116–18 (2016).

172. Aristotle, *Sophistical Refutations*, chs. 4–5, *in* THE WORKS OF ARISTOTLE (W.A. Pickard-Cambridge trans., Oxford Univ. Press 1928), https://logos library.org/aristotle/sophistical/index.html [https://perma.cc/W2KM-BVAD] (last visited Apr. 14, 2020).

fallacies.[173] But when applied to legal reasoning, nearly all fallacies fit into one of three categories: ambiguity, presumption, and relevance.

Fallacies of ambiguity are claims with no clear meaning.[174] Language is inherently ambiguous, and that is especially true of English, which is often described as three languages pretending to be one.[175] The adversarial context of legal argument tends to encourage both sides to adopt strained readings of contracts, statutes, and other texts. Intentionally hiding behind vagueness is also a common tactic for speakers arguing in bad faith.[176]

But in logic and in law, imprecision is more than pedantic; it robs the argument of integrity. If arguments are an attempt to provide reasons for a belief, then they accomplish nothing when their reasons are vague or incomprehensible. For simplicity's sake, this Article breaks down all fallacies of ambiguity into three types: semantic, grammatical, and epistemic.

1. Semantic Ambiguity

In a semantic ambiguity, a word or phrase has multiple meanings, and the argument either picks the wrong one or shifts from one meaning to another.[177] As a Texas court of appeals explained in the case *In re Guardianship of Vavra*, a ward who has the "capacity" to

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173. *See* Bradley Dowden, *Fallacies*, THE INTERNET ENCYCLOPEDIA OF PHIL., https://iep.utm.edu/fallacy/ [https://perma.cc/K3Q5-92UB] (last visited July 2025) (listing over 230 fallacies).

174. *See id.*

175. *See* Marisa Thomas, *Overview of English: Anglo-Saxon, Latin, and Greek Layers*, 3 TEACHING READING IN BRIEF, no. 1, 2023, at 1.

176. Contra Harvey Siegel, *Arguing with Arguments: Argument Quality, Argumentative Norms, and the Strengths of the Epistemic Theory*, 43 INFORMAL LOGIC 465, 485–87 (2023) (defining a good faith arguer as a person who is open-minded, intellectually humble, willing to listen and learn, willing to take unfamiliar positions seriously, and defining a good faith argument as one that objectively focuses on proper form, the strength of the evidence, fairly evaluates the probability of inference, and considers the totality of the evidence).

177. Mark Cooney, *Once Upon a Car: A Tale of Three Ambiguities*, 20 GREEN BAG 2D 143, 143–46 (2017).

care for herself does not necessarily have the higher level of "capacity" to manage her estate.[178]

When reviewing the informal logic of an argument, pay close attention to any words that could have broader or narrower meanings, as it is all too easy for legal arguments to select the wrong meaning, or to apply the broader meaning in one place and then equivocate, without justification, to the narrower meaning in another place. As a result, this line of reasoning is known as the fallacy of equivocation.[179]

2. Grammatical Ambiguity

Grammatical ambiguity results from poor sentence construction or clumsy phrasing.[180] The ambiguity here lies not in the words, but in their arrangement.[181] For instance, if a witness states, "He shot the burglar with the rifle," an attorney might move onto the next question without clarifying who had the rifle: the burglar or the shooter? If the court writes in its findings of fact that "the defendant denied stealing the documents from the office," is it apparent if the defendant denied stealing the documents at all, or if he denied that the documents he stole were stolen from the office?

This structural confusion is called the fallacy of amphiboly.[182] In *Whatley v. State*, the concurrence begins by stating, "I write to point out an amphiboly that can arise when judges say an offense was 'complete.'" [183] The concurrence goes on to explain the ambiguous grammatical construction in the phrase, "the offense was complete," which could mean either that the offense was

178. 365 S.W.3d 476, 482 (Tex. App.—Eastland 2012) ("The inference drawn by appellees would appear to be a logical fallacy of equivocation, i.e., the term 'capacity' has a different meaning in different contexts. . . . Evelyn may have the capacity to take care of herself on a daily basis, but that does not mean that she has the capacity to manage her estate as a reasonably prudent person.").

179. *See* Dowden, *supra* note 173.

180. *See id.*

181. *Id.*

182. *Id.*

183. 946 S.W.2d 73, 77 (Tex. Crim. App. 1997) (Womack, J., concurring).

legally complete (having satisfied each element) or that it was *factually* complete (having finished the conduct."[184] The phrasing is ambiguous, even though each individual word is not.

Amphiboly is a common problem in verbal and written legal reasoning, one that is rarely caught without careful reading, and one that often requires the parties and courts to dig deeply into dictionaries or legislative history in order to decide what the words mean or what the author meant.

3. Epistemic Ambiguity

Unlike the previous fallacies of ambiguity, what this Article calls "epistemic ambiguity" is often deliberate.[185] This ambiguity creates uncertainty about what the speaker believes.[186] Epistemic ambiguity can result from language that intentionally hides behind semantic or grammatical ambiguities, which the previous paragraphs have covered.[187] But it can also result from unambiguous language that either has no meaning or constantly shifts its unambiguous standards.

Fallacy of Vacuity: Using language devoid of substantive content is known as the fallacy of vacuity.[188]

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184. *Id.*

185. *See* Nikil Mukerji & Adriano Mannino, *Deeper into Argumentative Bullshit,* 42 INFORMAL LOGIC 439, 444, 459 (2022) (discussing bad faith arguments that are intentionally evasive, rambling, and unclarifiable, and exploring what motivates such arguments and how to address them).

186. *See id.* at 442.

187. In what is commonly known as a "dog whistle," intentionally ambiguous language, such as vague, double-meaning, or implied language can obscure the speaker's real intent and strategically invite multiple interpretations, allowing the intended audience to receive the message while the speaker can still hide behind the incorrect but politically acceptable meaning if necessary. Nabiha Aziz, Note, *Dog Whistles and Discriminatory Intent: Proving Intent Through Campaign Speech in Voting Rights Litigation*, 69 DUKE L.J. 669, 669, 672–73 (2019) (discussing how courts have resisted using dog-whistle rhetoric as evidence of discriminatory intent in voting rights cases, and argues for its inclusion to strengthen Fourteenth Amendment claims).

188. *See generally* Joel S. Johnson, *Vagueness and Federal-State Relations*, 90 U. CHI. L. REV. 1565 (2023) (discussing the void-for-vagueness doctrine, which substantially overlaps with the vacuity fallacy and translates it into legal

The vacuity lies not in the surface language, but in the internal logical architecture of the assertion.[189] Take, for example, the proposed rule that one should only be entitled to due process "when it is fair to do so," or the definition of an athlete as "a person who moves their body." These statements are unambiguous, and even true, but they are too undefined to make any point. Such statements offer nothing more than the illusion of argument, because they do not provide any reason for belief.

Justice Samuel Alito dissented on grounds of vacuity, in *Haaland v. Brackeen*.[190] The majority opinion in that case reviewed past cases to help determine the extent of Congress's power over Indian affairs, then established that the precedent establishes a distinction between "plenary" powers and "absolute" powers.[191] Justice Alito responded that the distinction's "pedigree cannot make up for its vacuity" because dictionaries routinely use both terms interchangeably.[192]

Inconsistency Fallacy: A similar form of ambiguity arises when a speaker offers multiple contradictory positions. This is formally known as the inconsistency fallacy.[193] It is more commonly known as "Kettle Logic," named after a story Sigmund Freud relayed of a man

reasoning, to better analyze when laws are too vague to provide meaningful guidance or constraints).

189. *See id.* at 1575 (noting that constitutionally vague language offers no particular standard, "effectively [leaving] that task to post hoc judgments by police, prosecutors, and juries").

190. 599 U.S. 255, 372–74 (2023) (Alito, J., dissenting).

191. *Id.* at 274–76 (majority opinion).

192. *Id.* at 374 (Alito, J., dissenting). He continued: "If we accept these definitions, what the Court says is that absolute ≠ absolute and plenary ≠ plenary, violating one of the most basic laws of logic. Surely we can do better than that." *Id.* Justice Alito is referring here to the "law of identity," the law of logic which states that a = a because in any logically functional system, everything must be identical to itself. *State v. Ross*, No. 125,604, 2024 Kan. App. Unpub. LEXIS 221, at *79 (Kan. App. 2024).

193. Joe Lau & Jonathan Chan, *Inconsistency*, CRITICAL THINKING WEB, https://philosophy.hku.hk/think/fallacy/ic.php [https://perma.cc/25U5-547F] (last visited July 27, 2025).

accused of damaging his friend's tea kettle.[194] The man defensively responded by arguing that he had returned the kettle in perfect condition, it was actually already damaged when he borrowed it, and as a matter of fact, he never borrowed it in the first place.[195]

This epistemic ambiguity is, intriguingly enough, an accepted part of legal reasoning.[196] It can even be our ethical duty to plead in the alternative,[197] resulting in arguments such as:

There was no contract.

There was a contract, but my client didn't breach it.

He did breach it, but the breach was justified.

It wasn't justified, but the plaintiff wasn't harmed.

Legal reasoning permits and even encourages the use of this fallacy because the legal system prioritizes the right of a party (especially a defendant in a criminal proceeding) to present *all* plausible defenses supportable in fact and law, so long as the arguer does not know for a fact that any of the alternative theories are false.[198]

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194. *See* JACQUES DERRIDA, RESISTANCES OF PSYCHOANALYSIS 6 (Peggy Kamuf, Pascale-Anne Brault & Michael Naas trans., Stanford Univ. Press 1998); Andy Wible, *Kettle Logic*, *in* BAD ARGUMENTS 174, 174 (Robert Arp, Steven Barbone & Michael Bruce eds., 2018).

195. Sigmund Freud, *The Interpretation of Dreams*, *in* 4 THE STANDARD EDITION OF THE COMPLETE PSYCH. WORKS OF SIGMUND FREUD 119–20 (James Strachey trans., Hogarth Press 1953); *see also* Rushton v. Tennessee Valley Auth. & Standard Indus., Inc. (*In re* C.W. Mining Co), 508 B.R. 746, 754 (Bankr. D. Utah 2014) (accusing a party of using kettle logic by arguing "that TVA was subject to the Garnishment Writs and could not deliver the Garnished Accounts to the Debtor. He also argues that . . . because TVA is a custodian under § 543, it must deliver the Garnished Accounts to the Debtor." In effect, the litigant argued that the opposing party must but also must not deliver the accounts.").

196. Henry Prakken & Giovanni Sartor, *Law and Logic: A Review from an Argumentation Perspective*, 227 A.I. 214, 240–41 (2015) (discussing why alternative pleadings can be logically inconsistent but still procedurally rational in the context of legal reasoning).

197. For instance, it could be malpractice to not plead in the alternative if that would waive certain arguments that a reasonably diligent attorney would not have waived. *See* MODEL RULES OF PRO. CONDUCT r. 1.3 cmt. (A.B.A. 2025) (stating that an attorney should "take whatever lawful and ethical measures are required to vindicate a client's cause or endeavor.").

198. *See generally* Casonhua v. Washington Mutual Bank, Nos. B218606, B218608, 2010 Cal. App. Unpub. LEXIS 8486, at *20–21 (Cal. Ct. App. Oct. 26, 2010) (explaining that plaintiffs are entitled to plead in the alternative if they

Arguing in the alternative may be logically incoherent, but it safeguards litigants from prematurely conceding liability or gambling on one set of facts before they have had a chance to establish the facts.[199] For this fallacy, the interests of justice arguably take precedence over the interests of logical consistency.

Ad Hoc Fallacy: Lastly, the ad hoc fallacy is another prominent kind of epistemic ambiguity.[200] Where kettle logic obscures its overall argument by making so many contradictory arguments, this fallacy obscures its overall argument by constantly redefining it.[201] Virtually every attorney has suffered through "goalpost shifting" exchanges like this:

> Defendant: "No one ever reported harassment in my company. Our record is spotless."
>
> Counsel: "My client filed a harassment report. So did three other employees."
>
> Defendant: "Come on. Those weren't detailed; we had nothing actionable."
>
> Counsel: "My client's report was 19 pages long. Is that not detailed enough?"
>
> Defendant: "19 pages of nothing. Those details weren't credible at all."

With every response, the defendant changes the criteria for judgment. First, he required merely reports. Then he required detailed reports, then *credible* detailed reports. Next, he might require *timely* credible detailed reports. There is no knowing what will ever satisfy this defendant, because his ad hoc argument adds new demands each time the previous ones are satisfied. When the FDA attempted to do this in *Fontem US, LLC v. U.S.*

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do not know which of the alternatives is true or can be establish, then a plaintiff is entitled to plead in the alternatives instead of gambling on any one formulation of facts).

199. *See id.* at 20–24; *see also* Roy W. McDonald, *Alternative Pleading: I*, 48 MICH. L. REV. 311, 313 (1950) ("Situations frequently occur where a party simply cannot be sure, in advance of trial, which of several equally seductive theories of his claim or defense will be supported by the evidence.").

200. *See* Dowden, *supra* note 173.

201. *See id.*

Food & Drug Administration, the D.C. Circuit Court offered a sharp rebuke, finding that "[s]hifting the regulatory goalposts without explanation is arbitrary and capricious. By indicating in its deficiency letter that Fontem could resolve issues with its applications by providing specific information, the FDA represented such information would be sufficient to secure approval. By later requiring different information, the agency 'pull[ed] a surprise switcheroo.'"[202]

In legal reasoning, these fallacies are subtle but damaging. By recognizing the following fallacies early—especially when buried in emotionally charged or high-stakes language—lawyers can craft clearer arguments and dismantle misleading ones, the following fallacies of ambiguity play a noteworthy role in legal argument:

Semantic Ambiguity	An ambiguity resulting from word choice. Also known as the Fallacy of Equivocation.
Grammatical Ambiguity	An ambiguity in sentence structure. Also known as the Fallacy of Amphiboly.
Epistemic Ambiguity	Ambiguity about what the arguer believes, due to unclear or shifting standards. Related fallacies include the Fallacy of Vacuity, Fallacy of Inconsistency, and Ad Hoc Fallacy.

D. Informal Fallacies of Presumption

Assumptions can make an argument weak, but presumptions can make an argument wrong.[203] Presumptions differ from assumptions in one critical way: they are asserted as fact, often without evidence—

202. 82 F.4th 1207, 1222 (D.C. Cir. 2023).

203. *See* Michael S. Pardo, *The Nature and Purpose of Evidence Theory*, 66 VAND. L. REV. 547, 574–78 (2013) (discussing the distinction between assumptions and legal presumptions, as well as their evidentiary and argumentative roles).

and sometimes in defiance of it.[204] Unlike assumptions, which are tacit, presumptions carry the argumentative weight of being stated explicitly and with the kind of confidence that often short-circuits scrutiny.[205]

In legal reasoning, innocence is not an assumption but a presumption, because innocence is not an unspoken fact that may or may not be true.[206] To the contrary, the law explicitly insists that it *is* true, as a matter of fact, even in spite of substantial contrary evidence—and it remains true until proven otherwise, in a court of law, beyond every reasonable doubt.[207] Similarly, the law presumes (arguably against substantial amounts of evidence) that lawmakers do not intend to enact absurd laws.[208] In light of that presumption, judges have gone so far as to rewrite unambiguous but seemingly absurd statutes to mean the opposite of what they say—in effect, replacing the literal meaning of the law with its presumptively plain meaning.[209]

But not all presumptions are fallacious. For instance, the presumption of innocence is a reasonable procedural safeguard, and one that merely codifies the principle of logic that *onus probandi incumbit ei qui dicit, non ei qui negat* (the onus of proof belongs to those who accuse, not those who deny).[210] If the onus of proof

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204. *See* James P. McBaine, *Burden of Proof: Presumptions*, 2 UCLA L. REV. 13, 21, 27–28 (1954) (describing the relationship between assumptions and legal presumptions).

205. *See id.*

206. *See generally id.* at 20–21 (describing the relationship between assumptions and legal presumptions).

207. Taylor v. Kentucky, 436 U.S. 478, 485–86 (1978) (discussing the presumption of innocence as a foundational component of a fair trial under the Due Process Clause and reaffirming that a suspect's innocence must be treated as a legal fact until rebutted).

208. *See* Amalgamated Transit Union Local 1309 v. Laidlaw Transit Servs., Inc., 435 F.3d 1140, 1145–46 (9th Cir. 2006) (revising the word "less" to say "more" for a statute that created a seven-day waiting period to file an appeal, at which point litigants have no time limit to appeal, when its plain meaning must have been to create a seven-day deadline instead).

209. *See id.*

210. This is known as the burden shifting fallacy. *See, e.g.* PHI Health, LLC v. WFAS, Inc., No. 7:20-cv-00196, 2021 U.S. Dist. LEXIS 138466, at * 7 (S.D. Tex. July 26, 2021) ("PHI also argues that 'WFAS does not contend that PHI did not

belongs to those who accuse, then it follows that everyone must be innocent until proven guilty. Four kinds of presumption cross the line and become fallacious, however: fallacies of circular reasoning, fallacies of causation, fallacies of overgeneralization, and reductive fallacies.

1. Fallacies of Circular Reasoning

Circular reasoning is reasoning that presumes the truth of what it seeks to prove.[211] In effect, the argument circles around its conclusion instead of drawing a straight line to it by offering any reason to believe.[212] The U.S. district court in *Thorsen v. Community Unit School District 300* highlighted this class of fallacies.[213] In *Thorsen*, a school district argued that it had disciplined the plaintiff teacher for poor performance, not for discriminatory reasons.[214] But the school's evidence of poor performance was the very fact that it had disciplined him.[215]

There are three common types of circular reasoning: begging the question, tautology, and loaded questions.

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perform its obligations under the Contract to provide Transports as requested by WFAS,' but this argument is an impermissible fallacious attempt to shift the burden of proof. As the movant seeking summary judgment, *PHI* must fastidiously proffer evidence and demonstrate its entitlement on each element of the claim. The Court finds that PHI has not done so. Accordingly, the Court DENIES PHI's motion for summary judgment with respect to PHI's breach of contract claim against WFAS."). "Russell's Teapot" offers a plain-English example that may resonate more intuitively with jurors. The philosopher Bertrand Russell pointed out that if he claims there is a teapot orbiting our sun, then he has the burden to explain how he came to this belief, and it would be nonsense to insist that the lack of disproof is what led him to believe in this celestial teapot. Brian Garvey, *Absence of Evidence, Evidence of Absence, and the Atheist's Teapot*, 10 ARS DISPUTANDI 9, 9 (2010), https://doi.org/10.1080/15665399.2010.10820011 [https://perma.cc/98ZT-QY7T]; Peter van Inwagen, *Russell's China Teapot*, *in* THE RIGHT TO BELIEVE: PERSPECTIVES IN RELIGIOUS EPISTEMOLOGY 11, 15 (Dariusz Łukasiewicz & Roger Pouivet eds., 2012).

211. *See* Dowden, *supra* note 173.

212. *See id.*

213. No. 20-cv-50132, 2021 U.S. Dist. LEXIS 85530, at *8–9 (N.D. III. May 5, 2021).

214. *Id.*

215. *Id.*

Begging the Question: "*I think he's guilty; he wouldn't have been arrested if he weren't.*" This "begs" the question by dodging the issue of why the speaker believes the person is guilty.[216] Guilty of what? Why was he arrested? Whether the arrest was valid is the very thing the trial is meant to determine, so relying on it as evidence circles around the issue instead of addressing it. Similarly, question-begging epithets like "only a fool would believe that" beg the question of why only a fool would believe it. Their emotionally charged language hopes that proof through the strength of conviction can stand in for proof through the strength of explanation.

Tautology: Justice Sandra Day O'Connor once asked the U.S. solicitor general to define "combatant," in a case where the government alleged that the defendant was an enemy combatant.[217] The solicitor general responded with the circular definition that a combatant is "one [who is] taking part in combat."[218] Using a term to define itself defines nothing. This act of tautology, or needless repetition, circles around the issue of definition instead of resolving it.

Loaded Question: This fallacy is common enough, and dangerous enough, that the Federal Rules of Evidence prohibit it.[219] A loaded question presumes guilt

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216. *See* Pioneer Ridge Nursing Facility Operations v. Emery, 41 Kan. App. 2d 414, 421–22 (2019) ("The fallacy of begging the question occurs when a claim is dependent on another claim that is implicitly assumed but has not been established in the argument. To illustrate, Ermey argues that Neva was insolvent when he signed the promissory note because she had qualified for Medicaid assistance. The premise offered to justify the conclusion (Neva's insolvency) implies it (Neva's Medicaid status), but no independent evidence showing what, if any, financial resources Neva had when the promissory note was signed. The mere fact that Neva had qualified for Medicaid assistance did not show that she would have been unable to make the agreed payments under the promissory note.").

217. Gurney F. Pearsall III, *Keyboard Warriors: How the Law of Armed Conflict Must Define the Difference Between Cyberwarfare and Cybercrime*, 42 WIS. INT'L L.J. 515, 527 n.75. (2025).

218. *Id.*

219. *See* Fed. R. Evid. 611(a) ("The court should exercise reasonable control over the mode and order of examining witnesses and presenting evidence so as to: (1) make those procedures effective for determining the truth; (2) avoid wasting time; and (3) protect witnesses from harassment or undue

in its premise, forcing the respondent to affirm that conclusion with answer that he or she gives. "When did you stop falsifying records?," "Do you regret assaulting that man—yes or no?" and comparable questions all presume the truth of a disputed fact, and any "yes or no" answer to such a "gotcha" question would be unfairly prejudicial.[220]

2. Fallacies of Causation

Fallacies of causation presume a causal relationship that does not logically follow from the evidence presented.[221] These fallacies distort reasoning by drawing unfounded connections between events, data, or concepts, often giving the illusion of coherence or explanatory power where none exists.[222]

False Cause: The original Latin name for this fallacy is *post hoc ergo propter hoc*, "after this, therefore because of this," as it connects two events that took place close in time, without establishing any link for causation besides correlation. In short, it presumes that evidence of correlation is evidence of causation.[223] While causality always creates correlation and temporal order, that same is not necessarily true in reverse.

False Analogy: This fallacy improperly extends the logic of one context to another by treating two unlike things as if they were meaningfully similar.[224] It rests on superficial or irrelevant similarities while ignoring

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embarrassment." Under this rule, judges may sustain objections to compound questions and loaded questions, on the grounds that such unclear questions waste time by requiring clarification, pose a substantial risk of misleading the jury, and are impossible to answer clearly).

220. *See* Benson v. City of Lincoln, No. 4:18-cv-3127, 2023 U.S. Dist. LEXIS 184248, at *35–36 (D. Neb. Oct. 13, 2023) (defining "loaded questions" as "compound questions to which any answer is prejudicial").

221. *See* Dowden, *supra* note 173.

222. *See id.*

223. *See* Melahn v. Newman, No. 20-CV-78-J, 2022 U.S. Dist. LEXIS 73152, *4–5 (D. Wyo. Mar. 23, 2022) ("Just because one event followed another in time, the first event need not have caused the second. There is no factual or scientific basis for such a conclusion. It is speculation to suggest otherwise.'").

224. *See* Dowden, *supra* note 173.

critical differences that undermine the strength of the analogy.[225]

Texas Sharpshooter Fallacy: This fallacy involves selectively emphasizing data points that appear to support a predetermined conclusion while ignoring data that would contradict it.[226] In effect, the arguer chops up and stretches unsupportive data until it appears to be supportive.[227] The term comes from the metaphor of a marksman who draws a target around bullet holes after the shots have been fired—manufacturing the appearance of precision where none exists.[228]

Overall, fallacies of causation incorrectly assume a cause-effect relationship between two objects. Fallacies of overgeneralization offer another type of assumption, one that expands the scope of poor reasoning by using it to cover an entire group.

3. Fallacies of Overgeneralization

Fallacies of overgeneralization prematurely leap from specific facts to general conclusions.[229] Overgeneralization stretches limited or misapplied information into a universal rule.[230] Inductive generalization takes the same path and can lead to reasonable arguments, but the key distinction is that fallacious generalization ignores counterevidence and collapses under scrutiny.[231]

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225. *See* Gamble v. United States, 587 U.S. 678, 707–10 (2019) (discussing the false analogy between the dual-sovereignty doctrine and the concept of double jeopardy).

226. *See* Dowden, *supra* note 173.

227. *See id.*

228. Kolakowski v. Sec'y of Health & Hum. Servs., No. 99-0625V, 2010 WL 5672753, at *138 n.175 (Fed. Cl. Nov. 23, 2010) ("This category of fallacy receives its name from the concept of a gunslinger who fires a gun randomly at the side of a barn, and then draws a bullseye around the biggest cluster of bullet holes. It denotes a post hoc attempt to attribute association or causation between two or more unassociated events that happen by chance in conjunction with one another. It is a subspecies of the '*non causa pro causa*' family of fallacies.").

229. *See* Dowden, *supra* note 173.

230. *See id.*

231. *See id.*

Hasty Generalization: A hasty generalization is one that draws from too few examples.[232] This fallacy mistakes anecdote for pattern.[233] Some of the most celebrated and notorious Supreme Court opinions come from committing or avoiding this fallacy. *Korematsu v. United States* upheld the internment of Japanese-Americans based on group suspicion and urgent military necessity, applying the perceived threat of a few to an entire group, despite the government offering no evidence of any national security threat from any person.[234] The Court took the opposite approach in *Brown v. Board of Education*, where it reviewed extensive social science evidence about the harm of segregated schooling, then found that the theory of "separate but equal" was inherently unequal in practice.[235] Where *Korematsu* relied on fear and speculation, *Brown* examined an extensive factual record, including studies, historical context, and real-world effects.

Sweeping Generalization: By contrast, a sweeping generalization misapplies a general principle to a specific case, while ignoring key context or exceptions.[236] We often stumble across this when we cite to cases for support, without delving deeply enough to recognize the material factual distinctions or the evolving doctrinal standards that break the precedential value of the comparative analysis.[237]

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232. *Id.*

233. *See id.*

234. *See* 323 U.S. 214, 223–24 (1944). *But see* Trump v. Hawaii, 585 U.S. 667, 710 (2018) (disavowing the *Korematsu* precedent).

235. 347 U.S. 483, 493–95 (1954).

236. *See* Dowden, *supra* note 173.

237. Armour v. Ohio, 775 F. Supp. 1044, 1072 (N.D. Ohio 1991) (Batchelder, J., dissenting) (arguing that the majority opinion drew "a sweeping generalization from a single piece of anecdotal evidence [in] its statement that after the elimination of restrictive covenants against [African-Americans], '[African-American] families were unable to purchase housing in white neighborhoods'"—except no evidence indicated that they were able to purchase housing in white neighborhoods prior to the elimination of the restrictive covenants either.).

Composition: The fallacy of composition presumes that what is true of individual elements must be true of the collective whole.[238] It may be true that one person in a crowd will see the concert better by standing up, but if everyone stands up, the group as a whole will not be seeing the concert any better. Similarly, one negligent act from an employee is not necessarily evidence that they or other employees are generally negligent, though that is certainly a matter worth investigating further.

In *Texas v. Becerra*, one party argued that data reflecting COVID-19 vulnerabilities at some medical facilities should apply to the 14 other categories of medical facilities.[239] The court described that argument as committing the fallacy of composition, since this extrapolation of evidence assumed, without evidence, that these other types of medical facilities did not have extra protections or different standards of protection.[240]

Division: As the opposite of the fallacy of composition, the fallacy of division improperly infers that what is true of the whole must apply equally to each of its parts.[241] Justice Thomas's dissent in *Silvester v. Becerra* criticized the Ninth Circuit for assuming that conclusions drawn from studies of first-time gun buyers applied equally to all gun buyers.[242] This was an inference he identified as the fallacy of division.[243] Similarly, the federal district court in *Rosen v. Unilever* dismissed a complaint after concluding that the plaintiff's core argument committed the fallacy of

238. *See* Dowden, *supra* note 173.

239. *See* 575 F. Supp. 3d 701, 721 (N.D. Tex. 2021).

240. *See id.* at 721–22.

241. *See* Dowden, *supra* note 173.

242. *See* 583 U.S. 1139, 1142–43 (2018) (Thomas, J., dissenting).

243. *Id.* at 1145 n.5 ("In fact, the Ninth Circuit's 'common sense' conclusion was a logical fallacy. Studies suggesting that waiting periods decrease firearm casualties for *all* purchasers do not suggest that waiting periods decrease firearm casualties for *subsequent* purchasers; the observed decrease could be attributable solely to first-time purchasers. By assuming that a conclusion about the whole applies to each of its parts, the Ninth Circuit committed the 'fallacy of division.'").

division.[244] The plaintiff's legal theory hinged on the argument that because the product as a whole was described as nutritious, each ingredient must have also shared that same property.[245] Because this inferential leap from whole to part could not sustain a logically viable claim, the court concluded that it also could not sustain a legally viable claim.[246]

4. Reductive Fallacies

Lastly, some arguments collapse not from too much complexity, but from oversimplification. Reductive fallacies create a false sense of clarity by ignoring nuance. Simplicity in argumentation is important, but where simplification reduces arguments to their essential points, oversimplification reduces arguments well beyond their essential points. Reductive fallacies oversimplify arguments by dismissing them with conclusory language, reducing them to false binaries, or relying on disproven assumptions.

Bare Assertion: This fallacy presents a conclusion and nothing more.[247] By offering no premise, and therefore no reason to believe, this line of reasoning offers nothing more than a pretend argument. Instead, it is a declaration of belief. It is anyone's guess what rationale (if any) motivates that belief.

Appeal to the Stone: This fallacy dismisses an argument as absurd or unworthy of response without offering any reasoning or rebuttal.[248] Like the bare

244. Rosen v. Unilever U.S., Inc., No. C 09-2563 JW, 2010 U.S. Dist. LEXIS 43797, at *15–17 (N.D. Cal. May 3, 2010) ("The 'fallacy of division' is the reverse of the fallacy of composition. It is committed when one argues that what is true of a whole must also be true of its parts. To reason that since a blend of oils is represented as being nutritious, if partially hydrogenated oil is part of the blend, it must also be nutritious commits the fallacy of division. Inherent in Plaintiff's allegations is the fallacious reasoning that in order to be a part of what is represented to be a 'blend of nutritious oils,' partially hydrogenated oil must have the same characteristics of the other oils in the blend.").

245. *See id.* at *12–13.

246. *See id.* at *13–17.

247. *See* Gen. Elec. Co. v. Joiner, 522 U.S. 136, 146–47 (1997).

248. *See id.* at 147.

assertion, it presents a bare conclusion, but in the context of negating another person's argument instead of affirmatively presenting one's own argument.

False Dilemma: This fallacy presents only two options—assuming, incorrectly, that there are no other options available.[249] In *Brasier v. Union Pacific Railroad Company*, the court noted a false dilemma in Union Pacific's argument that either its decision was reasonable, or it had to be immune from criticism.[250] The court rejected this dilemma, explaining that the ADA standard is not perfection, but a reasonable, individualized assessment based on the best current medical evidence.[251]

Affirming the Disjunct: The word "or" represents one of the vaguest commonly used words in legal reasoning, as it can represent one of two very different disjuncts: the exclusive disjunct (this or that is true, but not both) and the inclusive disjunct (this or that is true, or both).[252] To affirm the disjunct is to assume, without evidence, that an "or" is exclusive when it may be inclusive.[253] In reality, alternative options are not necessarily exclusive simply by virtue of being alternatives. In *Harmon v. Wal-Mart Stores, Inc.*, for instance, the court pointed out that when the plaintiff denied that his claim was worth more than $75,000, he was not confirming anything; instead, he was continuing to dispute the value of the claim.[254]

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249. *See* Dowden, *supra* note 173.

250. No. CV-21-00065-TUC-JGZ (MSA), 2023 U.S. Dist. LEXIS 58334, at *20–21 (D. Ariz. Mar. 31, 2023) ("Union Pacific's argument creates a false-dilemma fallacy: either Union Pacific must show its decision was reasonable or Union Pacific must show its decision was infallible and immune from all criticism. Neither absolute is true under the ADA regulations. Although Union Pacific need not show its assessment of Brasier was infallible, it cannot prevail by merely showing it acted reasonably. Rather, Union Pacific must show its assessment was reasonable as well as individualized and based on the best and most current medical evidence."(citations omitted)).

251. *See id.*

252. *See Leveraging Logical Form*, *supra* note 104, at 567–68.

253. *See id.*

254. *See* No. 3:08-cv-309-MEF (WO), 2009 U.S. Dist. LEXIS 21040, at *9, *11–12 (M.D. Ala. Mar. 16, 2009) (finding that where the plaintiff replied "deny" to the interrogatory question about whether he admits or denies that the value of his claim is over $75,000, such a denial "serves not to establish that an amount

False Premise: A false premise is reasoning grounded in an inaccurate or disproven claims.[255] In *Maryland Shall Issue, Inc. v. Governor Wes Moore*, the dissent pointed out that the majority opinion sought to dismiss the relevance of the Supreme Court's discussion in *New York State Rifle Association v. Bruen* by claiming that *Bruen* dealt only with "public carry," whereas Maryland's law concerns possession more broadly.[256] The dissent argued this reasoning rests on a false premise: that there is a meaningful legal distinction between the Second Amendment right to "keep" arms and the right to "bear" arms.[257] Because neither the constitutional text nor Supreme Court precedent separates these rights, the majority's attempt to justify disregarding *Bruen*'s guidance was built on a faulty foundation—making the entire argument logically unsound.[258]

When the foundation of an argument is false, the argument cannot stand, even if it may seem compelling in its rhetoric, structure, emotional resonance:

Fallacy	Explanation	Subcategories
Fallacies of Circular Reasoning	Reasoning that presumes the truth of what seeks to prove	Begging the Question Tautology Loaded Question

in excess of $75,000 is in dispute, but rather that Plaintiff is not willing to concede the issue and that an amount in excess of $75,000 is in dispute is itself in dispute").

255. *See* Dowden, *supra* note 173.

256. Md. Shall Issue, Inc. v. Moore, 86 F.4th 1038, 1055–56 (4th Cir. 2023) (Keenan, J., dissenting) (citing N.Y. State Rifle & Pistol Ass'n v. Bruen, 597 U.S. 1 (2022)) ("Next, the majority attempts to frame the Supreme Court's shall-issue discussion as irrelevant because the New York law at issue in *Bruen* was a restriction on 'public carry,' while Maryland's law 'limit[s] handgun possession altogether.' But this distinction turns on a false premise, namely, that there is a difference between the Second Amendment right to keep arms and the Second Amendment right to bear arms. Neither the text of the Second Amendment nor the Supreme Court's precedent supports such a reading. Thus, the majority cannot discard the language in the Court's shall-issue discussion on the basis that the Court was addressing only shall-issue public carry laws."); *see* N.Y. State Rifle Ass'n v. Bruen, 597 U.S. 1, 70–71 (2022).

257. *Md. Shall Issue, Inc.*, 86 F.4th at 1055–56 (Keenan, J., dissenting)

258. *See id.*

Fallacies of Causation	Reasoning that presumes a false causal relationship	False Cause False Analogy Sharpshooter Fallacy
Fallacies of Over-generalization	Reasoning that prematurely leap from specific facts to general conclusions	Hasty Generalization Sweeping Generalization Composition Division
Reductive Fallacies	Reasoning that oversimplifies the issues or arguments	Bare Assertion Appeal to the Stone False Dilemma Affirming the Disjunct False Premise

E. Informal Fallacies of Relevance

The logical force of an argument comes not only from its statements, but whether its statements matter.[259] If an argument is not probative, meaning if it does not make a core claim any more or less likely to be true, then it does not matter. Irrelevant arguments do not bring the overall issue any closer to resolution. Instead, they change the question. They hope to persuade through performance, not reason. This Section covers six common fallacies that distract instead of prove: verbosity, ad hominem, strawman, logic-chopping, red herrings, and appeals to emotion.

259. *See* Cory S. Clements, Comment, *Perception and Persuasion in Legal Argumentation: Using Informal Fallacies and Cognitive Biases to Win the War of Words*, 2013 BYU L. REV. 319, 348–49 ("The fallacy of irrelevant thesis, similar to the red herring, is an argument that distracts from the main issue at hand. It involves marshaling evidence to support an irrelevant conclusion that is different from the real issue . . . .").

Proof by Verbosity: This fallacy relies on the sheer quantity of words rather than their quality.[260] The arguer hopes that a sufficiently long or complicated argument sounds right, in part because challenging every part of it would take overwhelming effort. This is the illogic at work in the "firehose of falsehoods," a well-known propaganda technique that involves rapidly, repetitively, and continuously disseminating a large volume of lies and half-truths across multiple channels.[261]

Ad Hominem: Aristotle identified the age-old ad hominem as an argument that misses the point by attacking the arguer instead of the argument.[262] Credibility is always relevant, but personal attacks are not. There are logical ways to discuss credibility issues and bias. In *State v. Ward*, the court noted that Ward's filings were filled with ad hominem attacks—that is, instead of presenting legal arguments or evidence relevant to his plea agreement, Ward focused on the allegedly poor character of his attorney in a personal and abusive way.[263] Because Ward's points did nothing more

260. *See* Dowden, *supra* note 173.

261. Christopher Paul & Miriam Matthews, *The Russian "Firehose of Falsehood" Propaganda Model: Why It Might Work and Options to Counter It*, RAND (July 11, 2016), https://www.rand.org/pubs/perspectives/PE198.html [https://perma.cc/S6GR-NXK9] (coining the term "firehose of falsehoods"); *see also* Phillip T. Dunwoody et al., *The Fascist Authoritarian Model of Illiberal Democracy*, 4 FRONT. POL. SCI., Aug. 9, 2022, at 1, 2, https://doi.org/10.3389/fpos.2022.907681 [https://perma.cc/2ZNJ-E95W] ("When leaders employ a firehose of falsehoods, citizens retreat into cynicism and the belief that the truth is fundamentally unknowable. If the truth is unknowable, reasoned debate is pointless because there are no agreed-upon facts. . . . When reasoned democratic discourse is not possible because there are no agreed upon facts, all that is left is the political exercise of raw power.)".

262. *See* State v. Fuller, 547 P.3d 149, 154 n.5 (Okla. Crim. App. 2024) (describing the *ad hominem* fallacy and noting that "[e]very great thinker since Aristotle has recognized such fallacious arguments as unsound logic.").

263. 62 Kan. App. 2d 721, 722 (Kan. Ct. App. 2022) ("On appeal, Ward argues that the trial court erred in summarily denying the motion because his motion sufficiently alleged facts to warrant an evidentiary hearing. Ward also alleges that his motion counsel failed to function as Ward's advocate and argued against Ward's motion. A review of the record, however, shows that the trial court properly summarily denied Ward's motion without an evidentiary hearing because his pleadings made only conclusory ad hominem, abusive allegations

than attack a person, without addressing the merits of the issue itself, the court saw no reason to grant a hearing, and instead it informed Ward of the ad hominem fallacy.[264]

Strawman Fallacy: A strawman fallacy misses the point by attacking a weaker, version of the point, one that is typically so badly caricaturized that no one would have argued in favor of it in the first place.[265] In *Frierson v. Stephens, Inc.*, the court noted that Stephens avoided the central issue about whether the power of attorney (POA) authorized Jennifer to transfer assets into her own name, and instead chose to reframe the issue—arguing instead that Jennifer's actions amounted to an improper donation inter vivos (a lifetime gift).[266] The court found this mischaracterization distracted from the real legal question: Did the POA give Jennifer the authority to make the transfer?[267] By substituting a

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and addressed issues irrelevant to Ward's plea agreement. Ward was also not denied the right to effective assistance of counsel because his motion counsel's representation did not fall below an objective standard of reasonableness[,] and his assistance did not prejudice Ward. As a result, the majority affirms.")

264. *See id.*

265. *See generally* Marcin Lewiński, *Towards a Critique-Friendly Approach to the Straw Man Fallacy Evaluation*, 25 ARGUMENTATION 469 (2011), https://link.springer.com/article/10.1007/s10503-011-9227-6 [https://perma.cc/3EZ5-8BLY] (discussing how to analyze when the rephrasing of an argument becomes fallacious strawman reasoning).

266. 369 So. 3d 934, 940 (La. App. 2 Cir. 8/9/23) ("Furthermore, we find that the provision in the POA that the agent must 'keep [her] assets and property separate from those of the Principal' is irrelevant and creates no ambiguity in these circumstances, especially since it has not been established that the accounts in Mr. Frierson's name were his separate property. Accordingly, we conclude that Stephens' argument that the transfer request by Jennifer was an attempted donation *inter vivos* is a Strawman interposed to obfuscate the question of whether the POA gave Jennifer authority to move the assets to accounts in her own name."); Annabel v. Campbell, No. 20-cv-11114, 2022 U.S. Dist. LEXIS 177527, at *14 (E.D. Mich. Sept. 29, 2022) ("The Court agrees with Defendants that Plaintiff's objection is unclear. . . . His objection appears to relate to his retaliation claim, but he does not specify how the R&R erred other than to say it 'commits a red herring and Strawman fallacy.' Objections must be clear enough to enable the district court to discern those issues that are dispositive and contentious. . . . Accordingly, Plaintiff's fourth objection is overruled as invalid.") (offers an example of why conclusory language is useless, even if couched in logical terms).

267. *Id.*

weaker, misrepresented argument for the real issue, Stephens set up and attacked a strawman—ultimately failing to engage with the central question of the case.[268] The strongest argument would take the opposite approach, by pointing out the flaws in an even *stronger* version of the opposing side's argument. This is known as "steelmanning" an argument.[269] Arguably, the strongest counterargument is one that assumes the argument to be true and *still* finds serious flaws in it.[270]

Logic Chopping: Logic Chopping, known more simply as "hairsplitting," refers to focusing obsessively on technicalities, trivial distinctions, or pedantic criticism while ignoring the spirit or purpose of a rule.[271] The arguments may come with serious intellectual rigor, but that rigor misses the point, just as rearranging the deck chairs on the Titanic would have missed the underlying issue that the ship is sinking. In *Rosenfeld v. New Jersey*, the Supreme Court warns against excessive literalism—where a party avoids addressing the *spirit or purpose* of a legal rule by dissecting language to create confusion or artificial ambiguity.[272] The narrow focus on

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268. *See id.*

269. *See, e.g.*, DANIEL C. DENNETT, INTUITION PUMPS AND OTHER TOOLS FOR THINKING 33–34 (2013) (popularizing the "Rapoport's Rules" philosophy of argument in which the arguer steelmans the opposing argument to the extent that the opposing party thinks, 'I wish I'd thought of putting it that way;' listing any points of agreement; mentioning anything that you have learned from the opposing party; and only then offering any rebuttal"); *see also* Cass R. Sunstein, *The Ethics of Argument (with special reference to the Rapoport Rules)* 1 (May 3, 2025) (unpublished working paper), https://ssrn.com/abstract=5240247 [https://perma.cc/549S-DSC3].

270. By skipping the typically endless and miserable debate about the truth of the matter(s) asserted, the steelmanned counterargument strikes at the heart of the dispute: whether and to what extent this evidence supports that conclusion. As an additional benefit, according to Miller's Law, steelmanning an argument by assuming it to be true is the only way to truly understand that argument anyway. *See* JACK SCHAFER, PSYCHOLOGICAL NARRATIVE ANALYSIS: A PROFESSIONAL METHOD TO DETECT DECEPTION IN WRITTEN AND ORAL COMMUNICATIONS 17–18 (2d ed. 2019).

271. *See* HENRY BYERLY, A PRIMER OF LOGIC 17 (1973).

272. *See* 408 U.S. 901, 913 (1972) ("Unless we are to distort the doctrine of overbreadth into a verbal game of logic-chopping and sentence-parsing reminiscent of common-law pleading, it cannot fairly be said here that either the New Orleans ordinance, or the New Jersey statute as construed by the highest

phrasing can lose sight of substantive constitutional rights.[273]

Red Herring Fallacy: Named after the practice of dragging smelly fish (like herrings) across a trail to mislead hunting dogs, the red herring argument introduces an irrelevant and often inflammatory point, in an effort to divert attention away from the issue in dispute.[274] Its rhetorical power lies in appearing responsive while actually shifting the topic.[275] For example, in a tort action about unsafe premises, an argument about the plaintiff's unrelated criminal record is prejudicial and likely inadmissible, precisely because it is logically and therefore legally irrelevant.[276]

Appeals to Emotion: This fallacy seeks to substitute feeling for reason. Whether appealing to pity, fear, outrage, disdain, hatred, patriotism, envy, or any other

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court of that State, could reasonably be thought 'unduly to infringe the protected freedom. . . .'" (citation omitted)).

273. *See id.*

274. *See* Dowden, *supra* note 173.

275. *See id.*

276. *See, e.g.,* Cabezas v. FBI, No. 6:23-cv-1782-PGB-LHP, 2024 U.S. Dist. LEXIS 43734, at *7 (M.D. Fla. Jan. 11, 2024) ("Similarly, Ms. Cabezas' claim of ownership is a red herring. Regardless of her purported ownership of the iPhone, her remedy was to pursue an ancillary proceeding, which she failed to do."); Beverly v. Burt, No. 16-13783, 2019 U.S. Dist. LEXIS 233714, at *9 (E.D. Mich. Apr. 5, 2019) (ruling that it does not denigrate the defense attorney or attack their character to refer to their arguments as distractions, red herrings, or "smoke and mirrors"); Danone, U.S., LLC v. Chobani, LLC, 362 F. Supp. 3d 109, 120 (S.D.N.Y. 2019) ("Dr. Pittaoulis' remaining criticisms—that Dr. Steckel failed to replicate market conditions, survey the relevant consumer, or test the actual advertisements at issue—traffic in the classic logical fallacies of straw man and red herring. They castigate Dr. Steckel for failing to do something that was neither intended nor necessary to accomplish what Dr. Steckel set out do: design a descriptive survey 'assess[ing] how U.S. consumers are likely to interpret a health-related claim of the type used by Chobani on the packaging of its Gimmies milkshake.' Her criticisms might have been well-founded if this were the sort of confusion as to source study that is performed in most Lanham Act cases, but it is not." (citation omitted)); Garrett v. Sulser, No. 6:17cv310, 2019 U.S. Dist. LEXIS 70197, at * 4, (E.D. Tex. April 25, 2019) ("As an initial matter, Defendants claim that the Magistrate Report relies on a 'non-existent pleading' is without merit. Defendants maintain that Plaintiff's second amended complaint is the operative pleading and the Report did not treat it as such. This is a trivial objection. In all of Plaintiff's complaints—both original and amended—Plaintiff's claims are unchanged." (citations omitted)).

feeling, the argument hopes to persuade not by reason, but by emotional manipulation. This strategy is by no means ineffective, even in court—jury decisions can turn more on how jurors perceive the party (or their attorney) than on what the law requires. But this strategy comes with grave risks, at least in criminal cases.

In *Rouse v. People of the Virgin Islands*, the court identified several appeals to emotion in the prosecution's trial statements during trial.[277] The statements suggested that the defendant sought to "game" the system and appealed to the victim's ruined life—irrelevant arguments that stirred the jury's sympathy and outrage.[278] If a prosecutor secures a verdict through emotional reaction rather than legal proof, he commits the legal error of depriving the defendant's due process right a fair trial by committing the logical error of replacing reason with emotion.[279]

In each of these fallacies, the arguer misses the point. These arguments do not seek to reason; they flood the debate with trivialities, half-truths, and lies; they smear the arguer instead of the argument; they refute merely a parody of the argument; they nitpick at irrelevant details; they distract and divert attention away from the argument; or they try to inflame the arguer instead of addressing any points. Whether by distraction, distortion, or emotional appeal, relevance fallacies can be eloquent and tempting to believe but logically and therefore legally unsound.

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277. Rouse v. People of the Virgin Islands, 78 V.I. 717, 759 (2024) ("Statements one, four, and five imply that being represented by counsel was somehow problematic and made the expert testimony less credible. Finally, statements one, two, four, five, and six all are designed to appeal to emotion. For example, the only reason for emphasizing retaining counsel is to imply that a guilty person is somehow "getting one over" on the justice system. This same implication is present in the statements regarding Rouse being referred to Dr. Lu by his attorney. The sixth statement is the most obvious appeal to emotions and nothing more, as the only reason to point out that the victim's lives are ruined is to appeal to the emotions of the jurors. The question remains whether the cumulative effect of the several statements so prejudiced the trial as to deny Rouse due process.")

278. *See id.*

279. *See id.*

Proof by Verbosity	Reasoning that pretends to prove a point by overwhelming the listener with irrelevant data. *See* the "Chewbacca Defense," which attempts to prove through confusion.
Ad Hominem	Reasoning that attacks the arguer instead of the argument. *See* Tu Quoque Fallacy ("whataboutism"), which attacks the arguer's real or perceived inconsistencies instead of addressing the point.[280] *See also* Genetic Fallacy, which dismisses data due to its source instead of its merits.
Strawman	Reasoning that invents a new, much weaker argument to refute.
Logic Chopping	Reasoning that refutes a trivial detail in an argument instead of addressing its point. Also known as "hairsplitting" or "rearranging the deckchairs on the Titanic."
Red Herring	Reasoning that diverts the argument away from the point, typically through irrelevant but inflammatory claims.
Appeal to Emotion	Reasoning that proves a point by appealing to emotion instead of logic.

280. *See* Tracy Bowell, *Whataboutism: The Good, the Bad, and the Ugly*, 45 INFORMAL LOGIC 91, 91–93 (2023) (describing whataboutism as an invalid argument if offered to prove the inconsistency of the arguer, and a valid argument if offered to prove an inconsistency in the argument. While the first line of questioning inherently begs the question, since an arguer can be a bad person with a good point, the second line of questioning channels the Socratic Method, by questioning the major premise and its assumptions, biases, selectivity, double standards, and so forth).

5. Fallacies of Relevance

Aristotle's teacher famously noted, "[A]rguments, like men, are often pretenders."[281] This captures the essence of informal fallacies, as pretend arguments that appear sound on the surface but fall apart under scrutiny.[282] Rhetorical polish and confidence can mask serious logical defects in an argument, which makes it all the more crucial for attorneys to look past the rhetoric and focus on the underlying flow of reasoning.[283]

Good legal reasoning demands more than logical validity—it requires attentiveness to how arguments may deceive, distract, or distort. By applying the principles of informal logic and informal fallacy to the question of whether an argument tells the truth, the whole truth, and nothing but the truth, attorneys arm themselves with the tools to unmask such pretenders and to ensure their own advocacy is precise, clear, accurate, and comprehensive.

6. Conclusion

We can all think, often without much effort—but it takes training and deliberate practice to think critically. As attorneys, we must think critically to make sense of complex laws and competing facts, and to explain our understanding of those laws and facts through arguments that are clear, coherent, and convincing. Doing this well requires more than instinct or common sense. It requires knowing how to review and analyze the anatomy of an argument. Like a scalpel, formal logic allows attorneys to dissect an argument and evaluate the validity of its form. Like a surgeon's retractor, informal logic allows attorneys to pull back the rhetoric in an argument and evaluate its underlying soundness.

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281. United States v. Melancon, 972 F.2d 566, 571 n.3 (5th Cir. 1992) (citing IRVING M. COPI & CARL COHEN, INTRODUCTION TO LOGIC 91 (8th ed. 1990) (quoting Plato)); Plato, *Lysis*, *in* THE SOCRATIC DIALOGUES 83, 110 (Benjamin Jowett trans., 2009) (c. 380 B.C.E.).

282. *See Conspicuous Logic*, *supra* note 82, at 3–4.

283. *See id.* at 22–23.

Critics like Holmes can fairly point out that there is more to legal reasoning than logic. Even Aristotle would agree. Aristotle was the first to argue that persuasion comes not only from *logos* (logic), but also from *ethos* (the speaker's credibility) and *pathos* (the listener's feelings, values, and beliefs). But *logos* plays a uniquely objective role in that triangle. In a world of "hot takes," uncertainty, and low-effort reasoning, arguments that explicitly discuss what makes sense about their reasoning carry more weight and credibility than ever before.

To help attorneys make those high-quality arguments, the following checklist borrows the most practical tools from the study of logic and creates a framework for legal reasoning that would apply to any argument, at any procedural stage, in any area of law:

Key Questions	**Key Actions**
Categorization What, if anything, is the argument?	Identify the key logical connectors: if-then, not, and-or, only. Diagram the argument as a syllogism and/or Euler diagram. Translate the natural language into formal language.
Form Does the form support the claim?	Compare the argument's form to the valid/invalid forms. If it is invalid, explain why in plain English and with case law.
Substance Does the evidence support the claim?	Does the evidence tell the truth, the whole truth, and nothing but? If so, evaluate the strength/weakness of the informal logic. If not, explain why not in plain English and with case law. If possible, abductively counterargue to the core principles at stake.

Our legal reasoning tends to reflect our legal education, by focusing entirely on rules of law, rules of

evidence, and rules of procedure. But there are rules of reasoning as well. Methodically working through those formal and informal rules helps ensure that we offer the highest-quality arguments and counterarguments. The study of logic should be as central to legal argumentation as the Socratic Method is to legal education. Because to question everything like Socrates or understand the law like Holmes, one must first learn to think like Aristotle.