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False Persuasion, Superficial Heuristics, and the Power of Logical Form to Test the Integrity of Legal Argument

Stephen M. Rice*

“[A]rguments, like men, are often pretenders.”

Plato¹

I. An Introduction to the Practical Problem of Illogic in Legal Argument

Lawyers hold themselves out to be masters of persuasion but often fail to study two topics that are important to the art of legal advocacy: logic² and psychology.³ These topics are not part of the mainstream law school curriculum. They are not required topics on any state’s bar examination. While there are justifications for the absence of these topics in the law school curriculum, this absence seems strange considering that lawyers study as specifically and intentionally as any other group in our society to offer and scrutinize arguments designed

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1. PLATO, *Lysis*, in THE SOCRATIC DIALOGUES 83, 110 *Benjamin Jowett trans., 2009) (c. 380 B.C.E.).

2. Richard A. Posner, *The Jurisprudence of Skepticism*, 86 MICH. L. REV. 827, 835 (1988) (“Formal logic is not taught in law schools and not found in judicial opinions, in briefs, or in law review articles.”).

3. Jean R. Sternlight & Jennifer Robbennolt, *Good Lawyers Should Be Good Psychologists: Insights for Interviewing and Counseling Clients*, 23 OHIO ST. J. ON DISP. RESOL. 437, 437-439 (2008) (Observing that despite the need for understanding the role of psychology in the practice of law “law schools have tended to teach very little, directly, about how to be good with people, and current critiques of legal education do not focus much on the importance of psychological insights to attorneys.”)

to persuade hearers to accept an advocate's preferred conclusion. Logic and psychology would seem natural—even essential—topics of study for one seeking to craft logical arguments and effectively deploy such arguments to the psychological predispositions of a judge or jury. Of course, the art and science of persuasion are not unique to the legal profession. Many who choose other vocations—journalists, physicians, drill sergeants, or financial planners—might find themselves having to communicate, diagnose, motivate, advise, or educate. All of these tasks involve some level of argument. Preachers, politicians, and salespeople are required more specifically to make arguments in their vocations, since they evangelize, debate, or market, so they also may benefit from more formal training in the theory and technique of persuasion. However, most would concede that lawyers are more regularly and specifically engaged in delivering arguments than any of these other professions.

No vocation in society offers an experience quite like that of a lawyer, who, on the first day of a trial, neatly arranges his stack of exhibits in his banker's boxes, reviews his opening statement, and watches twelve men and women—who know nothing about him, his client, his case, his motivation, his intentions, his plan, his worldview, his likes or dislikes—take their seats in the jury box. They are unfamiliar with his client, and may wonder why his client keeps looking at the woman sitting in the back of the courtroom, or what his client is writing on her yellow pad of paper. They are unfamiliar with the details of the case, beyond the limited facts revealed during *voir dire*. Similarly, they are equally unfamiliar with opposing counsel or her client. Instead, they sit in the jury box, distracted by thoughts of what is going on at home or at work. They are distracted by thoughts of whether they will get a lunch break, or whether they will get to ask questions of the witnesses or the lawyers. They wonder if they should raise a hand if they need to use the restroom. They look around wondering if the cameras behind the judge's bench are on. They wonder what is going to happen next. They wonder who will speak first and what he or she will say. They wonder if they will agree with the plaintiff or the defendant, or neither.

It is all very strange for everyone involved. However, resolving the strangeness and “making sense of it all” is an important part of litigation.⁴ In the end, whether the lawyer makes an effective argument regarding the disputed facts and law will depend—in the most abstract terms—on the two things that will likely answer the unspoken questions and confusion of the people in the courtroom: the convincing logic of the argument the lawyer presents and the jurors’ psychological response to the logical integrity of that argument. If the lawyer’s success or failure is a function of these two components, logic and psychology, it seems even stranger that lawyers receive no specific training in formal logic or psychology.⁵

4. See Terry Lunsford & Beth Bonora, *How Jurors Respond to Complex Commercial Cases*, 98 GLASSER LEGAL WORKS 345, 348 (1998) (“[J]urors typically argue with each other over what the lawyers and experts said, what they meant, and **what the implications are**. Simulations and interviews make it clear that jurors spend most of their time arguing about the evidence—not the attorney’s good looks or the witness’s expensive tie. They do notice the witness’s tie, as they notice everything in the court, and try to make sense of it. Some studies suggest that ‘extra-legal factors’ are more influential when evidence in the case is closely balanced. But jurors spend most of their time and energy discussing the witnesses’ testimony, the lawyers’ arguments, the documents, and what it all means.”) (emphasis added); Leonard Matheo & Lisa DeCaro, *The Eleven Most Frequently-Asked Questions About Courtroom Presentation and Performance*, 10 PRAC. LITIGATOR 17, 25 (1999) (“The theme of your case provides the jury with a viewpoint from which to examine all the evidence presented throughout the trial. It gives them something to keep repeating to themselves, to filter all the facts through, and to quote in the deliberation room.”); Jeffery P. Robinson, *Opening Statements Become Opening Stories*, 30 CHAMPION 18, 18 (2006) (“When they are good, our opening statements become a psychological filter—the evidence introduced at trial passes through it, filtering out information that doesn’t match the tune they have just heard in your opening statement, and emphasizing the information that resonates with your story.”); Alan Tuerkheimer, *A Study in Juror Psychology: Making Up Minds Early and Not Keeping Them Open*, 54 FOR THE DEF. 12, 12 (2012) (“At the core, when confronted with new, complex, and adversarial information, jurors need ways to make sense of it all since they have limited, short-term memories, as we all do.”).

5. See, e.g., Peggy Cooper Davis, *Slay the Three-Headed Demon!*, 43 HARV. C.R.-C.L. L. REV. 619, 623 (2008) (“Clinical and simulation work should guide students to think critically about the interplay of logic, psychology, and culture in a world in which interpretation is motivated by clients’, lawyers’, and judges’ individual or institutional interests and desires.”).

As strange as all of this might be, there is another facet to the dynamic of courtroom argument that involves the relationship between logic and psychology. If lawyers are not specifically trained in these two disciplines, they certainly are not trained in the relationship between the two. Accordingly, when a lawyer presents his carefully crafted argument in the courtroom—even when his witnesses testify with credibility and his message is communicated with eloquence and clarity—there is still a substantial risk that the jury will reject the argument. They will not reject it because they were skeptical of the witnesses' credibility. They will not reject the argument because they found the lawyer confusing or ineloquent. They will not reject the argument because they were distracted by the lawyer's client scribbling on her legal pad, the cameras in the courtroom, the break schedule, or the lunch menu. Instead, the jury may reject the argument because they were psychologically predisposed to ignore something lawyers frequently take for granted, the force of the argument's logical appeal.

Psychology teaches that logical argument, even when carefully understood and crafted by the arguer, can be misunderstood or ignored by readers or listeners.⁶ Moreover,

6. For example:

[S]yllogistic reasoning is prone to the "atmosphere effect," where the overall atmosphere constructed by the premises in syllogisms influences participants' responses. That is, participants produce a generic response when given generic premises, a universal response when given universal premises, and an existential response with existential premises. The data do not support this alternative. Participants produce more generic responses when given a universal first premise and a generic second premise than when given a generic first premise and a universal second premise, while the atmosphere effect would predict roughly equivalent proportions of such responses. Moreover, participants produce reliably fewer existential premises when given an existential first and second premise than when given any other type of second premise. The atmosphere effect has been unable to account for other phenomena in syllogistic reasoning, and is similarly unable

because of their psychological dispositions, readers and listeners sometimes accept arguments as persuasive even when those arguments are, incontrovertibly, logically invalid.⁷ Readers and listeners are sometimes predisposed to accept arguments they read and hear simply because they take certain logical forms, even when those forms are incontrovertibly illogical and cannot support their purported conclusion.⁸ If psychological science has suggested that people are psychologically predisposed to accept arguments that have logically invalid forms, then it seems that lawyers should be particularly attentive to logical form. They should at least learn what logical form is. They should, at a minimum, arm

to explain the results here.

Sangeet Khemlani et al., *Syllogistic Reasoning with Generic Premises: The Generic Overgeneralization Effect*, in PROCEEDINGS OF THE 20TH ANNUAL CONFERENCE OF THE COGNITIVE SCIENCE SOCIETY 4 (2008) (citations omitted); see also DEBORAH J. BENNETT, LOGIC MADE EASY; HOW TO KNOW WHEN LANGUAGE DECEIVES YOU 88 (2004). Psychologists have argued “if two premises are of the same logical form . . . then ‘atmosphere’ makes it likely that a conclusion of that form will be thought to follow.” N.E. Wetherick & K.J. Gilhooly, ‘Atmosphere’, *Matching, and Logic in Syllogistic Reasoning*, 14 CURRENT PSYCHOL. 169, 170 (1995). However, if the premises are of different logical forms, two supplementary principles are required: (1) the Principle of Quality, which states that “whenever one or more of the premises is negative the preferred conclusion will be negative” and (2) the Principle of Quantity, which states that “whenever one or more of the premises is particular, the preferred conclusion will be particular.” JONATHAN ST.B. T. EVANS ET AL., HUMAN REASONING: THE PSYCHOLOGY OF DEDUCTION 235 (1993). An individual who has some grasp of logic often comes to think of the Atmosphere Effect as a shortcut to giving a correct response because it is often successful. *Id.* But it is not a sure-fire way to successfully conclude a syllogism. *Id.* In many studies, there is evidence of an attempt at logical processing. *Id.* at 236. Because the effects of atmosphere were more marked as invalid than valid syllogisms, there is a finding based on the assumption that the subjects are at least making an attempt at reasoning. *Id.* “The atmosphere of the premises has been shown to be a contributing factor to difficulties in syllogistic deduction” BENNETT, *supra*, note 6, at 88. While a complete survey of this area of psychology is beyond the scope of this Article, knowing that our psychology sometimes works against our ability to think logically should lead those committed to the discipline of legal reasoning to be that much more vigilant in understanding the logical form of the arguments we employ and refute.

7. See *supra* note 6.

8. See *supra* note 6.

themselves with the capacity to recognize logically invalid arguments, lest they too find themselves (or their audience) accepting a false argument due to psychological predisposition, rather than reasoned examination.

Psychology reveals that the logic problem with argument is that recipients of arguments make logical mistakes, ignore logic altogether,⁹ or actually prefer certain illogical argument patterns.¹⁰ They make these mistakes, in part, because they employ “superficial heuristics.” Superficial heuristics are strategies people use based on the cues of an argument (often trivial in nature) that hint at the conclusions.¹¹ People rely on these cues, manifested in the superficial, but incomplete details of an argument, like the phrasing of certain terms in the argument or the predictable elements of the argument.¹² It is

9. See Jonathan J. Koehler, *Train Our Jurors*, in HEURISTICS AND THE LAW 303-04 (G. Gigerenzer & C. Engel eds., 2006) (“Research in psychology with mock jurors, as well as anecdotal observation of actual jurors, suggests that jury verdicts may also reflect systematic biases that arise from the mental shortcuts—some of which may qualify as heuristics—that jurors use when trying to apply the relevant rules of law and logic to a target case.”) (footnote omitted).

10. See Daniel Heussen et al., *Raising Argument Strength Using Negative Evidence: A Constraint on Models of Induction*, 39 MEMORY & COGNITION 1497, 1498 (2011).

11. Bradley J. Morris & Christian D. Schunn, *Rethinking Logical Reasoning Skills from A Strategy Perspective*, in METHODS OF THOUGHT: INDIVIDUAL DIFFERENCES IN REASONING STRATEGIES 31, 38 (Maxwell J. Roberts & Elizabeth J. Newton eds., 2005) (“Superficial heuristics are selective processing strategies in which solutions are derived from surface details, such as terms or common elements, rather than on content (as in knowledge-based heuristics). Two well-known examples lead to *matching biases* and *atmosphere effects*. Superficial heuristics lead to selective processing, but differ from all previous strategies in that the focus is on the presence of surface elements; no specific content is accessed. They operate as follows: (1) surface structure is encoded; (2) key elements are identified; [and] (3) rules applied to them. For example, in the Wason selection task, subjects prefer to choose cards named in the rules rather than cards that are not named. Given ‘If there is an odd number on one side, then there is a vowel on the other side’ the subject may focus on ‘odd number’ and ‘vowel’ as key elements. Then, when searching possible solutions, the subject will attend to those states that contain the key elements. Hence, a card with an odd number and a card with a vowel are selected because these match the elements in the rule. A similar processing model applies to the heuristics that lead to atmosphere effects.”) (citations omitted).

12. For example, one particular kind of heuristic is discussed in Jeffery

J. Rachlinski, *Heuristics, Biases, and Philosophy*, 43 TULSA L. REV. 865, 868-69 (2008):

Tversky and Kahneman presented people with a description of Linda:

Linda is 31 years old, single, outspoken and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in anti-nuclear demonstrations.

[Which is more probable?]

...

[1.] Linda is a bank teller.

[2.] Linda is a bank teller and is active in the feminist movement.

Deductive logic dictates that it must be more likely that Linda is a bank teller than that Linda is both a bank teller and active in the feminist movement because the latter is a subset of the former. And yet, most people presented with this question conclude that it more likely she is both a bank teller and active in the feminist movement.

Just as departures from perfect memory allow researchers to make inferences about how the mnemonic system works, this departure from rational choice allows for an inference as to how people make judgments of this type. Tversky and Kahneman argued that this problem represents an example of how judgment departs from the ideal of rational choice. People rely on the feeling that Linda seems like she would be active in the feminist movement in making the judgment. The judgment, however, is not one that calls for a reliance on intuition; it is best made by the application of deductive logic. But Tversky and Kahneman show that people seem to rely on their feelings rather than logic. And in this case, their feelings lead them astray. They rely on what Tversky and Kahneman called the “representativeness heuristic,” which is founding probabilistic judgments on the apparent similarity between an instance and the general category, rather than on deductive logic.

(footnotes omitted) (citing Amos Tversky & Daniel Kahneman, *Judgments of*

important to note that people rely on these heuristic cues rather than completely analyzing the entire form or content of the argument. Some heuristics can be important, helpful tools for legal decision making, since a comprehensive deductive process is frequently impracticable.¹³ However, they can also be problematic, causing legal decision-makers to abandon legal principles and careful logic in reaching legal decisions.¹⁴ Accordingly, an important component of the legal process should be ensuring control over superficial heuristics.¹⁵

and by Representation, in JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES 84, 92, 97 (1982); Amos Tversky & Daniel Kahneman, *Judgment and Uncertainty: Heuristics and Biases*, 185 SCI. 1124, 1124-25 (1974)); see also Timothy L. Hubbard, *Logic and Reasoning*, in 3 SALEM HEALTH: PSYCHOL. & MENTAL HEALTH 1121, 1124 (Nancy A. Piotrowski ed., 2010).

13. See, e.g., Callia Piperides et al., *Group Report: What is the Role of Heuristics in Litigation?*, in HEURISTICS AND THE LAW, *supra* note 9, at 343, 371 (“[C]ognitive psychological theory and research indicates that as humans, individual legal decision makers have limited cognitive abilities, such as limited memory, attention, and processing capacity. These limitations are magnified in legal environments where legal decision makers often have to interpret complex laws, understand a lot of conflicting evidence, and work under time pressure. Consequently, it is reasonable to assume that under these conditions, they will rely on simple heuristics to make decisions rather than perform complicated calculations.”).

14. See, e.g., Hal R. Arkes & Victoria A. Shaffer, *Should We Use Decision Aids or Gut Feelings?*, in HEURISTICS AND THE LAW, *supra* note 9, at 411, 412-13; see also Koehler, *supra* note 9, at 303-04 (“Research in psychology with mock jurors, as well as anecdotal observations of actual jurors, suggests that jury verdicts may also reflect systematic biases that arise from the mental shortcuts—some of which may qualify as heuristics—that jurors use when trying to apply the relevant rules of law and logic to a target case.”) (footnote omitted). Dr. Koehler even goes so far as to suggest that jurors be trained to “employ elementary rules of logic and inference to make sense of the evidence and arguments that come before them.” Koehler, *supra* note 9, at 313.

¹⁵ See Reid Hastie & Bernd Wittenbrink, *Heuristics for Applying Laws to Facts*, in HEURISTICS AND THE LAW, *supra* note 9, at 259, 275-76 (“American legal decisions occur within a context in which procedures are in place, specifically designed to make the decision process deliberative and controlled. For example, jurors are repeatedly admonished not to rely on intuitive judgment habits or to use cues such as the defendant’s race. They are prevented from hearing relevant (perhaps ‘best cue’) evidence such as information about a defendant’s record of past crimes. They are given careful instructions on presumptions and standards of proof. They are even given instructions on some inferences they should and should not draw. And, finally, they are instructed to consider alternative views on the verdict and group decision rules (e.g., super-majority and unanimity requirements) force them to pay special heed to unpopular views. All of these conditions are

One method of controlling superficial heuristics is emphasizing the important role of logical form in legal argument.¹⁶ If legal reasoning is to be a discipline, distinct from ordinary processes of decision-making and valued by society, then legal reasoning must be grounded in the integrity of logical form. If legal reasoning is to be grounded in logic, then lawyers must understand sound logical form and how it is applied in legal argument. One tool of philosophical logic is the logical fallacy. This Article will generally describe philosophical logic, logical form, and logical fallacy. Further, it will explain one specific logical fallacy—the Fallacy of Negative Premises—as well as how courts have used the Fallacy of Negative Premises to evaluate legal arguments. Last, it will explain how lawyers, judges, and law students can use the Fallacy of Negative Premises to make and evaluate legal argument.

II. Philosophical Logic, Logical Fallacies, and Why Understanding Logical Form is Essential to the Discipline of Legal Reasoning

A. *The Role of Logical Form in Reasoning*

Discussion of the philosophy of logic, logical form, syllogisms, or logical fallacies only rarely appears in legal arguments, briefs, or opinions. Logic has, in many circles, fallen on hard times.¹⁷ The role of formal logic in contemporary

aimed to reduce legal decision makers' reliance on solely heuristic judgment habits. But, of course, none of these measures are guaranteed to prevent fast and frugal decisions.”).

16. See, e.g., Koehler, *supra* note 9, at 310 (“[J]urors should not be free to reason according to their own unique brands of logic to obtain a desired result [P]rospective jurors who broadly fail to understand and accept the rules of logic and probability theory when applied to everyday matters have questionable reasoning skills. Because evidence presented at trial is increasingly complex and statistical in character (Feinberg 1989), the system should impose minimal standards to ensure that our legal fact finders are up to the task.”).

17. For one perspective on the diminished role of logic in legal reasoning, see T. Alexander Aleinikoff, *Constitutional Law in the Age of Balancing*, 96 YALE L.J. 943, 955-57 (1987) (describing historical perspectives on the role of logic in jurisprudence from Oliver Wendell Holmes’s admonition to “think

society stands in sharp contrast to its role in history. One example is early Puritan New England, where formal logic was of significant importance. The Puritans were a devoutly religious group that stressed the importance of a rational religion, viewing logic as important to addressing the religious issues of their time, and a topic to be studied, “even in one’s leisure.”¹⁸ The role of logic in Puritan culture had an impact on early American higher education. For example, the curriculum at Harvard College during the late seventeenth century reveals the importance of logic in higher education and the influence of the Puritan emphasis on philosophies of logic.¹⁹ The influence of the study of formal logic extended beyond Harvard College, and certain philosophies of logic were adopted by many preachers and educational leaders in colonial New England.²⁰

The importance of logic in these New England communities in the late seventeenth century provides a stark contrast to the role formal logic plays in modern times. Logic

things[,] not words . . .” to the “rule skepticism” of the Legal Realist school and the view that legal decisions were based “on judges’ ‘hunches,’ personal political views, or psychological dispositions” to Cardozo’s declaration that “[n]othing is stable. Nothing absolute. All is fluid and changeable. There is an endless becoming.” (footnotes omitted) (quotation marks omitted).

18. RICK KENNEDY, *ARISTOTELIAN & CARTESIAN LOGIC AT HARVARD* 6 (1995) (“[L]ogic in the seventeenth century was meant to be used constantly and consciously as the technology of rational living. Logic was not simply a discipline set aside in the corner of one’s education Textbooks and manuals of logic in the seventeenth century were not arcane; they were designed to be useful and read even in one’s leisure.”).

19. During the late seventeenth century, perhaps the most influential tutor at Harvard was the Puritan pastor and scholar William Brattle. See RICK KENNEDY, *A HISTORY OF REASONABLENESS: TESTIMONY AND AUTHORITY IN THE ART OF THINKING* 217 (2004) (noting that in the late seventeenth century Harvard did not have professors, but instead used tutors who were “assigned a small group of students to whom [each tutor] taught all subjects for four years”). The influence of Brattle’s philosophy of logic was far-reaching and served to enforce the ideals of traditional Puritanism even after his death in 1723. See KENNEDY, *supra* note 18, at 96. Brattle’s logic was religiously oriented and served the role of merging the instruction of logic with the instruction of divinity. See *id.* at 108. Brattle’s logic textbook became the most popular textbook at Harvard from 1687 until at least 1743, and possibly as late as 1767. *Id.* at 96.

20. See DOUGLAS MCKNIGHT, *SCHOOLING, THE PURITAN IMPERATIVE, AND THE MOLDING OF AN AMERICAN NATIONAL IDENTITY: EDUCATION’S “ERRAND INTO THE WILDERNESS”* 54 (2003).

books do not make the *New York Times* best-seller list; formal logic is not a core subject of undergraduate education, and formal logic, as such, is rarely taught in law schools.²¹ Further, in the same way developments in the role of formal logic affected education in colonial America and beyond, the diminished role of formal logic in modern jurisprudence has had no small impact on contemporary American jurisprudence:

Following Holmes and Dewey (and indeed also like Holmes, though, to be sure, much less like Dewey) many generations of jurists (especially the academic phalanx) have given no serious attention to the role of logic in legal argument, while at the same time, by word or by deed, dismissing it as a serious subject for teaching and analysis in law school. I suggest that this more or less universal dismissal has had the pernicious “trickle up” effect of dulling the precision and clarity and perspicacity of legal arguments offered by judges and lawyers, from those penned and printed by state court judges and lawyers to those issued by the United States Supreme Court Generations of post-Holmesian legal academics and their students (many of whom have gone on to become lawyers and judges) have acquired the view, almost as an intellectual knee-jerk reflex, that deductive logic has very little useful role to play in legal argument. After all, no post-Holmesian post-realist denies that a very great part of the law involves argument. But if “the life of the law” is not logic but at the same time does inescapably involve a great deal of argument, then mustn’t we conclude that “logic” has very little to do with, or anyway little of significance to do with legal argument?²²

21. See Posner, *supra* note 2, at 835.

22. Scott Brewer, *On the Possibility of Necessity in Legal Argument: A*

Nevertheless, logic continues to persevere, finding favor with judges interested in putting the power of logical form to work.²³ One would be surprised to hear a judge admit to being convinced by an argument that is patently illogical. Few lawyers will advance such arguments, and few jurors will consciously accept them. Accordingly, having an understanding of formal logic can aid law students, lawyers, and judges in understanding the law, learning the law, solving legal problems, and making persuasive legal argument.²⁴

B. Defining Logical Form and Understanding Its Role in Advocacy

Formal logic has been described in various ways.²⁵ One fair

Dilemma for Holmes and Dewey, 34 J. MARSHALL L. REV. 9, 11, 25 (2000); see also *id.* at 47 (concluding “logic, including but not limited to deductive inference, is deeply and importantly relevant to legal argument and to the legal practices that are to a great extent comprised of or at least reliant on legal argument”).

23. See, e.g., *infra* notes 76-79 (collecting opinions utilizing formal logic as part of the legal reasoning process).

24. See, e.g., Brewer, *supra* note 22, at 11 (“[W]hile I do not believe that logic is the most important discipline a jurist (teacher, student, judge, scholar) should have, I do believe that it is a discipline whose competent mastery is vital for any jurist. In that way, Holmes’ and Dewey’s influence in this area should be regarded as pernicious.”); see also Ruggero J. Aldisert et al., *Logic for Law Students: How to Think Like a Lawyer*, 69 U. PITT. L. REV. 1, 2 (2007) (“First, all prospective lawyers should make themselves intimately familiar with the fundamentals of deductive reasoning. Deductive reasoning, as Aristotle taught long ago, is based on the act of proving a conclusion by means of two other propositions. Perhaps 90 percent of legal issues can be resolved by deduction, so the importance of understanding this type of reasoning cannot be overstated.”).

25. One description for formal logic is the “architecture of argument.” See generally James C. Raymond, *The Architecture of Argument*, 7 JUD. REV.: J. JUD. COMM’N NEW S. WALES 39 (2004). See also MADHUCHANDA SEN, AN INTRODUCTION TO CRITICAL THINKING 25 (2010) (“Logic can be described as the systematic study of inferences. The British empiricist philosopher John Locke once said, ‘Logic is the anatomy of thought’. Formal logic is the study of the form of inferences or arguments, which enables us to judge whether an argument has a form that has been recognized as a form of proper inference, wherein the conclusion is derived from the premises following certain accepted rules or methods of inference.”). Philosophers have defined logic in

description is the philosophical study of proper inference.²⁶ In argument generally, and in legal argument specifically, one party claims that his preferred conclusion is the proper inference to make from the law and the facts. Argument is an effort to justify a conclusion based on inference.²⁷ In deductive argument, particularly, the arguer uses advocated, accepted, assumed, or undeniable premises as the starting point for the argument.²⁸ From these premises, or from the relationship

various ways, have debated what logic is, and described what makes logic "formal" or "informal." For example, it has been said "[l]ogic, in its most extensive sense in which it has been thought advisable to employ the name, may be considered as the Science, and also as the Art, of Reasoning." RICHARD WHATELY, *ELEMENTS OF LOGIC* 1 (1858). *See also* J. LACY O'BYRNE CROKE, *LOGIC* 3 (1906) ("Pure or Formal Logic is the science of the necessary laws of thought. It has *thought* rather than *language* for its adequate object-matter; for though it must express itself in language, and is very much concerned with it, language comes in only as the minister of thought. It is a *science*;—a science rather than an *art*." (footnote omitted); W. R. BOYCE GIBSON, *THE PROBLEM OF LOGIC* 157 (1908) (" . . . Formal Logic is a propaedeutic which is abstractly concerned with consistency of reasoning without any reference to the truth or the falsehood of the accepted premises, or to the knowledge or the ignorance of the reasoner."). "[F]ormal logic[] is devoted to thought in general and those universal forms and principles of thought which hold good everywhere, both in judging of reality and in weighing possibility, irrespective of any difference in the objects." HERMANN LOTZE, *1 LOGIC IN THREE BOOKS OF THOUGHT, OF INVESTIGATION AND OF KNOWLEDGE* 10-11 (Bernard Bosanquet trans., Clarendon Press 1888).

26. *See* PATRICK J. HURLEY, *A CONCISE INTRODUCTION TO LOGIC* 31 (9th ed. 2006) ("A deductive argument is an argument in which the arguer claims that it is impossible for the conclusion to be false given that the premises are true.") (emphasis omitted); *see also* WILLIAM J. KILGORE, *AN INTRODUCTORY LOGIC* 509 (2d ed. 1979) ("Deductive logic . . . is the analysis of arguments whose form requires that in all cases in which the conclusion is false at least one premise also is false.") (emphasis omitted). In the context of legal proof it has been said that "[i]nference is the essence of proof; proof is good or bad according to the quality and number of inferences drawn from facts to conclusions." J.S. COVINGTON, JR., *THE STRUCTURE OF LEGAL ARGUMENT AND PROOF: CASES, MATERIALS, AND ANALYSES* 2 (2d ed. 2006).

27. DOUGLAS WALTON, *ONE-SIDED ARGUMENTS: A DIALECTICAL ANALYSIS OF BIAS* 28 (1999) ("[A]n argument is defined as a sequence of reasoning, a network of propositions in which some propositions, functioning as conclusions, are inferred from others, functioning as premises by means of inferences.") (emphasis omitted). *See also* WILLIAM T. PARRY & EDWARD A. HACKER, *ARISTOTELIAN LOGIC* 5 (1991) ("An argument is a sequence of propositions that offers one or more propositions in the sequence as grounds or evidence for another proposition in the sequence.") (emphasis omitted).

28. Lawyers frequently argue regarding the truth of premises that fall

between two premises, the arguer seeks to reach a conclusion. The conclusion is not accepted solely because the premises are true; rather, the conclusion is accepted only because the premises are true *and* because the relationship between and among the premises and conclusion require that the conclusion be true.²⁹ The conclusion is *compelled* by the premises only when the logical form of the argument requires that the conclusion be inferred from the premises.³⁰ Such an inference is proper only when the form of the argument comports with six simple rules of formal logic.³¹

Logicians describe this relationship between the premises and conclusion in terms of formal logic. Formal logic requires that, for a moment, one set aside the truth or falsity of the premises and focus instead on the logical form of the argument, to first discern whether if the premises are true, the conclusion must be true.³² This narrow focus on the logical form of an argument presents an important opportunity for a respondent, who may be restrained by stipulated, advocated, or presumed

into the “advocated” category. However, legal argument is not always made in the context of disputed facts. For example, when parties stipulate to facts, when facts are admitted in pleadings or discovery, or where presumptions require that certain facts be accepted as true, the lawyers turn their advocacy skills away from arguing the facts that make up the argument’s premises and toward arguing the proper relationship and logical inference between and among the relevant premises.

29. See JEROME E. BICKENBACH & JACQUELINE M. DAVIES, GOOD REASONS FOR BETTER ARGUMENTS: AN INTRODUCTION TO THE SKILLS AND VALUES OF CRITICAL THINKING 237 (1997) (“When an argument is valid, if its premises are true then its conclusion must (necessarily) be true.”); TRUDY GOVIER, A PRACTICAL STUDY OF ARGUMENT 108 (2010) (“In formal logic, a **sound argument** is one in which all the premises are *true* and they provide logically conclusive support for the conclusion because they deductively entail it.”); HURLEY, *supra* note 26, at 43 (noting that “validity is something that is determined by the *relationship* between premises and conclusion” and further that “[t]he question is not whether the premises and conclusion are true and false, but whether the premises *support* the conclusion.”); see also sources cited *supra* note 26.

30. See *supra* note 29.

31. See IRVING M. COPI & CARL COHEN, INTRODUCTION TO LOGIC 224 (13th ed. 2009).

32. This presents an opportunity for the respondent, restrained by advocated, accepted, assumed, or undeniable premises, to still salvage a viable argument, not based in the law or the facts, but instead, based on the logical form of the argument the respondent is faced with.

fact or other undeniable premises to still make a convincing argument. This argument would be one that rests not on the facts, or the law, but on the logical form of the argument faced by the respondent. In large part, this process is a function of two simple steps. First, it requires that arguments, which are normally articulated in nonstandard, casual, or even colloquial form,³³ be arranged in a standardized, simplified form that allows us to distinguish the terms that are the subject of each premise, their relationship to one another, and their relationship to the conclusion. This standardized³⁴ form is called a syllogism³⁵: an argumentative structure made up of two distinct (but related) premises and a conclusion.³⁶ There are three principal kinds of syllogisms: the categorical syllogism, the disjunctive syllogism, and the hypothetical syllogism.³⁷ The disjunctive syllogism “contain[s] a compound, disjunctive (or alternative) premise asserting the truth of at least one of two alternatives, and a premise that asserts the falsity of one of those alternatives.”³⁸ The hypothetical syllogism contains “one or more compound, hypothetical (or conditional) propositions, affirming that if one of its components (the antecedent) is true then the other of its components (the consequent) is true.”³⁹ Since legal analysis

33. See COPI & COHEN, *supra* note 31, at 267 (“In ordinary discourse the arguments we encounter rarely appear as neatly packaged, standard-form categorical syllogisms. So the syllogistic arguments that arise in everyday speech cannot always be readily tested. They can be tested, however, if we *put* them into standard form—and we can generally do that by reformulating their constituent propositions. The term **syllogistic argument** refers to any argument that either *is* a standard-form categorical syllogism or that *can be reformulated as* a standard-form categorical syllogism without any loss or change of meaning.”).

34. “Now, to put an argument in syllogistic form is to strip it bare for logical inspection. We can then see where its weak points must lie, if it has any, and consider whether there is reason to believe that it is actually (*i.e.* materially) weak at those points.” F.C.S. SCHILLER, FORMAL LOGIC: A SCIENTIFIC AND SOCIAL PROBLEM 222 (1912).

35. See *id.*

36. See ALEXANDER BAIN, LOGIC: DEDUCTIVE AND INDUCTIVE 134 (American Book Company 1841).

37. See COPI & COHEN, *supra* note 31, at 301.

38. *Id.*

39. *Id.*

frequently involves placing legal labels on status or conduct, requiring categorization, many legal arguments fit neatly into a categorical syllogism. Accordingly, throughout this Article, “syllogism” will refer to a categorical syllogism.⁴⁰

Second, it requires that we test the form of this standard arrangement of premises and conclusion against a series of simple rules. These rules have been referred to as the rules of logic. The six⁴¹ rules of logic that apply to a categorical syllogism have been typically stated as follows: (a) avoid four terms (i.e., a categorical syllogism must contain three terms,⁴² and the terms must have the same meaning each time they are used in the argument);⁴³ (b) distribute⁴⁴ the middle term⁴⁵ in at

40. However, other syllogistic forms have useful roles in legal argument.

41. While these six rules are generally accepted in contemporary philosophy, not all logicians have agreed on the number of rules, or their precise formulation. Aristotle developed a set of six rules to check the validity of syllogisms. See Peter King & Stewart Shapiro, *The History of Logic*, in THE OXFORD COMPANION TO PHILOSOPHY 496 (Ted Honderich ed., 1995). Richard Whately, a nineteenth century logician and theologian, also listed these six rules for the validity of syllogisms in his work *Elements of Logic*. See, e.g., C.L. HAMBLIN, FALLACIES 196 (1970). Whately’s six rules were deduced from an original twelve rules written in Latin by Henry Aldrich, a seventeenth century logician, who had expanded on Aristotle’s six original rules. See *id.* Logician C.L. Hamblin, suggested eliminating the first two rules since they merely define what a syllogism is, independent of the validity of a syllogism. *Id.* at 199. He also suggested combining rules five and six because they do not operate independently from each other. *Id.* These two rules can be joined to state “[t]here is an affirmative conclusion, a negative conclusion or no conclusion at all according as both premises are affirmative, or only one, or neither.” *Id.* Therefore, Hamblin uses only rules three, four, and the combined five and six to provide a satisfactory theory of the validity for syllogisms. *Id.*; see also HURLEY, *supra* note 26, at 256 (articulating five rules but noting “logicians of today generally settle on five or six [rules of syllogism]”) (footnote omitted). Hurley explains the distinction between five and six rules by stating, “[s]ome texts include a rule stating that the three terms of a categorical syllogism must be used in the same sense throughout the argument.” HURLEY, *supra* note 26, at 256 n.*. Hurley and others incorporate this rule into the definition of “categorical syllogism.” *Id.*

42. In syllogistic logic, a “term” is a class of things that is the subject of a proposition. See B.P. BAIRAN, AN INTRODUCTION TO SYLLOGISTIC LOGIC 283 (2005).

43. See COPI & COHEN, *supra* note 31, at 244 (“A valid standard-form categorical syllogism must contain exactly three terms, each of which is used in the same sense throughout the argument.”).

44. In logic, when a term is used in a way that “refers to *all* of the

least one premise (a discussion of the logical term “distribute” follows); (c) any term distributed in the conclusion must be distributed in the premises; (d) avoid two negative premises; (e) if either premise is negative, the conclusion must be negative; and (f) from two universal premises no particular conclusion may be drawn.⁴⁶

Understanding all of the rules of formal logic is a significant undertaking. It is ordinarily impractical for a busy lawyer to digest the long history of philosophical logic. Similarly, expecting lawyers to take time away from their practices to master the nuances of formal deductive logic, or even the intricacies of each of these rules of logic, might be unrealistic. Fortunately, extensive efforts are not necessary to realize practical value from these rules of logic. An understanding of even one of these six rules can be an important tool for a law student, lawyer, or judge. An argument that violates just one of these rules fails in its logical integrity and cannot support its conclusion.⁴⁷ When the argument violates a rule of logic, it is labeled as committing a

members of the class” referenced by that term, that term is said to be distributed. COPI & COHEN, *supra* note 31, at 245; *see also* NICHOLAS BUNNIN & JIYUAN YU, THE BLACKWELL DICTIONARY OF WESTERN PHILOSOPHY 188 (2004) (“A term is distributed if it refers to all members of the class to which it is referring and is explicitly or implicitly prefixed by a universal quantifier.”) (emphasis omitted); CHRISTOPHER W. TINDALE, FALLACIES AND ARGUMENT APPRAISAL 45 (2007) (“A term is said to be ‘distributed’ in a proposition when it is meant to refer to all members of the class of things that proposition denotes.”); WHATELY, *supra* note 25, at 28 (noting that “a term is said to be ‘distributed,’ when it is taken universally, so as to stand for everything it is capable of being applied to . . .”); JAMES A. WINANS & WILLIAM E. UTTERBACK, ARGUMENTATION 69 (1930) (“A term is said to be distributed if it refers to a class of things in its entirety.”). Conversely, if a term only refers to a portion of the members of the class, it is “undistributed.” WHATELY, *supra* note 25, at 28 (noting that “a term is said to be . . . ‘undistributed,’ when it stands for a portion only of the things signified by it . . .”).

45. The term that appears in both premises, but not the conclusion, is called the “**middle term**.” *See* COPI & COHEN, *supra* note 31, at 225.

46. *See, e.g.*, COPI & COHEN, *supra* note 31, at 244-49. However, compare Charles L. Hamblin’s discussion regarding historical variations on the rules of validity of syllogisms and his proposal that three concise rules, rather than six, could adequately encompass the requirements. *See* HAMBLIN, *supra* note 41, at 196-202.

47. COPI & COHEN, *supra* note 31, at 244.

fallacy.⁴⁸ Philosophy has developed a catalog of defective argument structures that can be easily identified by their argumentative patterns. These patterns, which manifest the violation of a rule of logic, are hallmarks of fallacious arguments. Accordingly, fallacy-based legal reasoning offers lawyers a shortcut to mastering philosophic logic: By learning to identify the patterns of argument, they obtain an important tool for testing the logical integrity of legal reasoning.

C. *The Logical Fallacy and Its Relationship to Logical Form*

If a violation of a rule of logic is a hallmark of a logical fallacy, then what is a logically fallacious legal argument, and why is labeling such arguments “fallacious” significant? A fallacy has been variously defined.⁴⁹ However, most logicians

48. See *id.* Formal logical fallacies are the result of errors in the required form of the argument. This is a contrast to informal fallacies, which are errors in the use of language. *Id.* at 119 (“Informal fallacies . . . arise from confusions concerning the *content* of the language used.”).

49. See Hans Vilhelm Hansen, *The Straw Thing of Fallacy Theory: The Standard Definition of ‘Fallacy’*, 16 ARGUMENTATION 133 (2002), for a thorough discussion of the historical meaning of “fallacy” throughout the history of the philosophy of logic. Hansen considers a variety of definitions of fallacy: “A fallacious argument, as almost every account from Aristotle onwards tells you, is one that *seems to be valid but is not so*[,]” *id.* at 133 (quoting HAMBLIN, *supra* note 41, at 12); “*errors in reasoning*[,]” *id.* at 137 (quoting MORRIS R. COHEN & ERNEST NAGEL, AN INTRODUCTION TO LOGIC AND SCIENTIFIC METHOD 376 (1934)); “any kind of mistaken belief, however arrived at” generally or “an argument that *seems* to be sound without being so in fact,” *id.* at 138 (quoting MAX BLACK, CRITICAL THINKING 229-30 (1952));

[s]ophistical reasoning appears to be genuine reasoning but actually is fallacious. Sophistics, therefore, is that part of logic concerned with the defective syllogism. A sophistic argument is a syllogism that seems to infer a conclusion from probable premises but, because of one fallacy or another does not really do so. The defect in the argument occurs either on the part of matter alone or on the part of both matter and form[.]

id. at 138 (quoting JOHN A. OESTERLE, LOGIC: THE ART OF DEFINING AND REASONING 253 (2d ed. 1963)); “[s]trictly speaking, the term ‘fallacy’ designates an unacceptable mode of reasoning. However, the term is usually

agree that an argument is formally fallacious when it violates a rule of logic.⁵⁰ If it violates a rule of logic, the argument's logical form cannot be relied upon to ensure the truth of the conclusion⁵¹—and if that is the case, there is no reason to accept the argument's purported inference (i.e., that the conclusion is necessarily inferred from the premise).

Understanding the relationship between the rules of logic and the important claim of deductive logic tells us something about why this label of “fallacy” is so important. Deductive argument is an important⁵² and common form of legal

extended to include types of improper definition[.]” *id.* at 139 (quoting EDITH WATSON SCHIPPER & EDWARD SCHUH, A FIRST COURSE IN MODERN LOGIC 24 (1959)) (internal quotation marks omitted); “any mistaken idea or false belief, like the ‘fallacy’ of believing that all men are honest. But logicians use the term in the narrower sense of an error in reasoning or in argument. A fallacy, as we shall use the term, is a type of incorrect argument[.]” *id.* at 139 (quoting IRVING M. COPI, INTRODUCTION TO LOGIC 52 (2d ed. 1961));

a synonym for any kind of position that is false or deceptive, and sometimes it is applied in a more narrow sense to a faulty process of reasoning or to tricky or specious persuasion [or] . . . a discussion [that] claims to conform to the rules of sound arguments but, in fact, fails to do so[.]

id. at 141 (quoting WARD FEARNESIDE & WILLIAM HOLTHER, FALLACY: THE COUNTERFEIT OF ARGUMENT 3 (1959)); or “[a] *fallacious* argument in logic is an incorrect argument. It is also customary to restrict the word ‘fallacious’ to incorrect arguments which in certain contexts *seem* to some to be correct.” *Id.* at 141 (quoting JAMES D. CARNEY & RICHARD K. SCHEER, FUNDAMENTALS OF LOGIC 11 (2d ed. 1974)).

50. See, e.g., COPI & COHEN, *supra* note 31, at 244.

51. See, e.g., *id.* at 244-49.

52. Of course, there are other forms of legal argument. Deductive reasoning can be contrasted with inductive reasoning. Inductive reasoning involves an argument that claims its conclusion is supported by its premises, but not necessarily required by them. When reasoning inductively, the arguer reasons from specific examples to support a claim that the specific represents a more general principle. See COPI & COHEN, *supra* note 31, at 26-28 (noting that “[i]nductive arguments make weaker claims than those made by deductive arguments”). Another common form of reasoning in legal argument is reasoning by analogy, a form of inductive reasoning. Analogy has been contrasted with deductive argument by one commentator this way:

While analogies are thus useful in legal *reasoning*, they play a more limited role in legal *argument*. The obvious

reasoning.⁵³ It is an argument that reasons that if the premises of the argument are true, the conclusion must be true.⁵⁴ If an argument is deductively valid, then it is airtight as long as the premises are true.⁵⁵ Accordingly, in cases in which a litigant can operate from premises that are assumed, stipulated, admitted, or presumed in the litigant's favor (as they are, for example, where the facts as pled are required to be considered in the light most favorable to one litigant⁵⁶), deductive

inadequacy of the use of analogy in constructing a legal argument is an analogy's inability to answer the question, "so what"? . . . It takes a syllogism to provide the answer to the "so what" challenge. That is, the logical force of an analogy comes from the syllogism to which it contributes, not from the persuasiveness of the analogy itself. Or, put another way, an analogy is a way of defending a premise of a syllogism; by itself, it is not an argument but merely a small piece of an argument.

JAMES A. GARDNER, *LEGAL ARGUMENT: THE STRUCTURE AND LANGUAGE OF EFFECTIVE ADVOCACY* 11 (1st ed. 1993).

53. See, e.g., Scott Brewer, *Traversing Holmes's Path Toward a Jurisprudence of Logical Form*, in *THE PATH OF THE LAW AND ITS INFLUENCE: THE LEGACY OF OLIVER WENDELL HOLMES, JR.* 94, 120 (Steven J. Burton ed., 2000) ("Judges constantly rely on deductive inference in the course of making and evaluating legal arguments. They often rely on it even in the course of deploying other argument types, such as analogy and induction. They also rely on it when applying authoritative rules about which there is no active doubt about the meaning of a term or phrase that appears in the rule, nor doubt about which, if any, authoritative rule applies.").

54. See *supra* note 26.

55. ALAN HAUSMAN ET AL., *LOGIC AND PHILOSOPHY: A MODERN INTRODUCTION* 5 (11th ed. 2010) ("The fundamental logical property of a **deductively valid argument** is this: If all its premises are true, then its conclusion must be true. In other words, *an argument is valid if it is impossible for all its premises to be true and yet its conclusion be false*. The truth of the premises of a valid argument guarantees the truth of its conclusion.").

56. One example is a motion to dismiss a complaint for failure to state a claim upon which relief can be granted. See, e.g., *Butler v. Ford Motor Co.*, 724 F. Supp. 2d 575, 578 (D.S.C. 2010) ("Accordingly, a [Federal Rule of Civil Procedure] . . . 12(b) (6) motion should only be granted if, after accepting all well-pleaded allegations in the plaintiff's complaint as true and drawing all reasonable factual inferences from those facts in the plaintiff's favor, it appears certain that the plaintiff cannot prove any set of facts in support of his claim entitling him to relief.") (citation omitted); see also *F.T.C. v. Innovative Mktg., Inc.*, 654 F. Supp. 2d 378, 384-85 (D. Md. 2009) ("When

argument can be an important argumentative strategy. The nature of deductive argument leverages the assumed, admitted, or presumed facts or established legal rules to the litigant's maximum benefit; that is, where there is no basis for controverting legal premises (as is the case, for example, with facts that must be accepted in the light most favorable to one party), the success of the argument can be made to depend on the logical validity of the argument.

One of the benefits of fallacy-based legal analysis is that it provides a framework for describing not only how the deductive argument works, but how the deductive argument fails.⁵⁷ Since deductive arguments are vehicles for establishing a necessary conclusion, they present a powerful tool for advocacy. However, most lawyers are not trained in logic, so they are forced to attack deductive arguments with the only tool in which they are trained: raising doubts or disproving the truth of the premises of the deductive arguments they face. While attacking an argument's premise is an important tool, relying exclusively on this method ignores an equally important element of deductive arguments: the argument's logical form. Since the validity of a deductive argument's form is determined by its strict adherence to the rules of logic, lawyers unfamiliar with the rules frequently miss an opportunity to completely defuse an argument's reliability and persuasiveness.

reviewing such challenges, courts construe the pleading requirements prescribed by [Federal Rule of Civil Procedure] . . . 8 liberally and accept 'all well-pleaded allegations in the plaintiff's complaint as true and draw[] all reasonable factual inferences from those facts in the plaintiff's favor.' Traditionally, reviewing judges have operated under the oft-stated mantra that 'a complaint should not be dismissed for failure to state a claim unless it appears beyond doubt that the plaintiff can prove no set of facts in support of his claim which would entitle him to relief.'" (citations omitted). Another example is a pleaded fact in the context of a default judgment. *See, e.g.,* *Massa v. Jiffy Prods. Co.*, 240 F.2d 702, 705 (9th Cir. 1957) ("This being a default judgment, the allegations of the cross-complaint are taken as true.").

57. *See* RUGGERO J. ALDISERT, *LOGIC FOR LAWYERS: A GUIDE TO CLEAR LEGAL THINKING* 2 (3d ed. 1997) ("Too often judges—like lawyers, law professors and law review writers—use the cop-out phrase, 'flawed reasoning.' This trite phrase means nothing. It does not indicate whether the criticism relates to the choice of a controlling legal precept, its interpretation, its application of the facts or is a statement that a formal or material fallacy is present.").

Another benefit of fallacy-based legal analysis is that logical fallacies are an efficient methodology for explaining what is wrong with a legal argument. While the fallacies themselves are the work of centuries of philosophical analysis, they are well-established, enduring principles, the explanations and justification of which have been neatly encapsulated in a few simple rules. Additionally, as will be discussed in more detail below, these rules have been recognized by courts and used to analyze and reject fallacious legal arguments.⁵⁸

Accordingly, the logical fallacy is not only an effective tool, but also an efficient one.

D. One Important Logical Fallacy: The Fallacy of Negative Premise

If a legal argument violates even one rule, then the argument is logically invalid, and cannot be relied upon to ensure the truth of its conclusion.⁵⁹ Accordingly, knowing just one of the six rules of logic can help a lawyer recognize one category of faulty reasoning, without having to master the entirety of the philosophy of formal logic. This task is further streamlined by the fact that where an argument violates a particular rule of logic, it receives a proper name. This Article focuses on the Fallacy of Negative Premises, which is the name given to an argument that violates the fifth rule of formal logic: "If either premise is negative, the conclusion must be negative."⁶⁰

As discussed above, formal logic analyzes arguments in a basic, uniform, familiar argumentative structure: the syllogism. The syllogism is so natural to us that we rarely stop to think about why we seem to naturally gravitate to its form,⁶¹

58. See discussion *infra* Part III.

59. See, e.g., COPI & COHEN, *supra* note 31, at 244-49.

60. *Id.* at 247. See also MICHAEL F. GOODMAN, FIRST LOGIC 76 (1993) (noting that "if one premise in a categorical syllogism is Negative, then the conclusion must also be Negative, for the syllogism to be valid"); HURLEY, *supra* note 26, at 258 ("A negative premise requires a negative conclusion, and a negative conclusion requires a negative premise.").

61. See COPI & COHEN, *supra* note 31, at 224; see also ANTONIN SCALIA &

or why it is so persuasive in legal argument.⁶² The syllogism is a simple form of argument that consists of two premises and a conclusion. Each premise is made up of two terms; the conclusion is also made up of two terms. For example, if someone told me that the judge who was about to hear his case had never taken the bar exam, I might respond by saying: “All lawyers must have taken and passed the bar exam. Judges are lawyers. Therefore, all judges have passed the bar exam.” It takes little work to organize this argument in the form of a syllogism:

All lawyers are people who have passed the bar examination.

All judges are lawyers.

Therefore, all judges are people who have passed the bar examination.

BRYAN A. GARNER, MAKING YOUR CASE: THE ART OF PERSUADING JUDGES 41 (2008) (“[P]ersuasion is possible only because all human beings are born with a capacity for logical thought. It is something we all have in common If you have never studied logic, you may be surprised to learn—like the man who was astounded to discover that he had been speaking prose all his life—that you have been using syllogistic reasoning all along.”).

62. Justice Antonin Scalia and Bryan A. Garner suggest that lawyers “think syllogistically” and observe that “[t]he most rigorous form of logic, and hence the most persuasive, is [the basic form of formal logical analysis called] the syllogism.” SCALIA & GARNER, *supra* note 61, at 41; *see also* COVINGTON, *supra* note 26, at 199 (“The enticing thing about the syllogism is that it yields a necessary conclusion, which means that if the listener accepts the premises, then the listener must accept the conclusion or contradict himself. The early European intellectual prized the power of the syllogism to the point that much of medieval university training was about intricate points in disputation based on the syllogism.”); GARDNER, *supra* note 52, at 8 (“The power of syllogistic argument leads to the only significant rule about crafting legal arguments: *every good legal argument is cast in the form of a syllogism*.”). Courts have long recognized the syllogism as a legitimate and persuasive form of legal argument. *See, e.g.*, 44 Liquormart, Inc. v. Rhode Island, 517 U.S. 484, 511 (1996); Ford v. Georgia, 498 U.S. 411, 421 (1991); Fort Stewart Sch. v. Fed. Labor Relations Auth., 495 U.S. 641, 650 (1990); Ry. Express Agency v. Virginia, 358 U.S. 434, 443 (1959); Phelps Dodge Corp. v. NLRB, 313 U.S. 177, 191 (1941); Lynch v. Alworth-Stephens Co., 267 U.S. 364, 370 (1925); William J. Moxley v. Hertz, 216 U.S. 344, 356 (1910); Pease v. Dwight, 47 U.S. 190, 200 (1848); Pace Elecs., Inc. v. Canon Computer Sys., 213 F.3d 118, 123 (3d. Cir. 2000).

The argument has two premises and one conclusion. The first premise, called the “major premise,”⁶³ contains two terms: “all lawyers” and “people who have passed the bar examination.”⁶⁴ The term “all lawyers” is called the middle term.⁶⁵ The term “people who have passed the bar examination” is called the major term.⁶⁶ The second premise, called the “minor premise,” also contains two terms: “All

63. The major premise is the premise containing the major term. The major term is the term that is the predicate of the conclusion. See COPI & COHEN, *supra* note 31, at 225.

64. Because practical arguments are rarely made using strict syllogistic form, rarely express all of the terms of the argument, and rarely express the elements of argument using consistent terms, evaluation of logical form frequently requires taking an argument articulated in natural language, reducing it to its essential terms, and ordering it in a syllogistic form. As one logician has explained:

Categorical syllogisms, as they occur in ordinary spoken and written expression, are seldom phrased according to the precise norms of the standard-form syllogism. Sometimes quantifiers, premises, or conclusions are left unexpressed, chains of syllogisms are strung together into single arguments, and terms are mixed together with their negations in a single argument.

HURLEY, *supra* note 26, at 264. While syllogistic form might be an effective device for crafting and evaluating the logical form of argument, it is not always an effective device for communicating argument, and lawyers, trained toward brevity and efficiency in their argument, frequently speak and write arguments that do not readily expose their logical form. As one commentator observed more than 150 years ago:

It has been remarked . . . that men are very impatient of tedious prolixity in Reasoning; and that the utmost *brevity*,—the most *compressed* statement of argumentation,—that is compatible with clearness, is always aimed at, and is indeed *conducive* to clearness. And hence, (as was pointed out) a single sentence,—or even a word—will often be a sufficient *hint* of an entire syllogism.

RICHARD WHATELY, EASY LESSONS ON REASONING 109-10 (4th ed. 1847).

65. The middle term is the term that occurs in both premises, but not the conclusion. See COPI & COHEN, *supra* note 31, at 225.

66. The major term is the term that is the predicate of the conclusion. See *id.*

[people who are] judges” and “[people who are] lawyers.” The term “All [people who are] judges” is the minor term,⁶⁷ and the term “all lawyers” is again called the middle term.⁶⁸ Finally, the conclusion contains two terms: “all [people who are] judges” and “people who have passed the bar examination.”

The Fallacy of Negative Premises focuses on the positive or negative relationship between the premises and the conclusion. The rule of logic at issue is the fifth: “If either premise is negative, the conclusion must be negative.”⁶⁹ Accordingly, the issue of this fallacy only arises where a positive conclusion is purportedly derived from a negative premise.⁷⁰ For example, consider the following example of a syllogism:

My lawyer is not a thief.
Thieves are not trustworthy.
Therefore, my lawyer is trustworthy.

In this case, the fifth rule of logic tells us something about why the logical form of the argument does not allow us to accept the conclusion. The reason for this is inherent in the nature of the syllogism and the limited inference that flows from a negative statement.⁷¹ A syllogism tells us something essential about the

67. The minor term is the term that is the subject of the conclusion. *See id.*

68. *See supra* note 65.

69. COPI & COHEN, *supra* note 31, at 247.

70. *Id.* at 247-48.

71. One commentator has described it this way:

This type of reasoning is unacceptable because of the difficulty in sustaining a factual proposition merely by negative evidence. When an advocate determines “there is no evidence that B is the case”; he or she is attempting to affirm or assume that non-B is the case. But all that is affirmed or assumed is that the advocate has found no *evidence* of non-B. The correct method of proceeding is to find affirmative evidence of non-B. This may be difficult, but it is absolutely necessary if logical order is to be preserved. To prove a negative is sometimes an impossible task. Not knowing that something exists is simply not knowing.

relationship between its three terms. If the syllogism follows the rules of logic and if the major premise and the minor premise are both true, then the conclusion is true. We could not infer the conclusion from either the major premise alone or the minor premise alone. The power of the syllogism is its ability to ensure the validity of the conclusion based solely on the relationship between the major premise and minor premise.⁷² The rules of logic police the integrity of these relationships. The fifth rule of logic, which requires that if a conclusion is positive, neither premise may be negative, simply reflects the limited inferences that can result from a negative premise.

A positive premise tells us something valuable about the relationship between two terms, such as *all As are Bs*. A negative premise tells us something of more limited value, such as *no As are Bs*. The positive premise will assure us that some or all of the major term is also encompassed in the middle term. This is important information regarding the middle term. Further, since the middle term allows an inference in the conclusion about the relationship between the major term and minor term, a positive premise yields important information regarding the conclusion. Conversely, a negative premise will

ALDISERT, *supra* note 57, at 156. Another authority states the reason for the rule in more technical terms:

The logic behind Rule 4 may be seen as follows. If *S*, *P*, and *M* . . . designate the minor, major, and middle terms, an affirmative conclusion always states that the *S* class is contained either wholly or partially in the *P* class. The only way that such a conclusion can follow is if the *S* class is contained either wholly or partially in the *M* class, and the *M* class wholly in the *P* class. In other words, it follows only when both premises are affirmative. But if, for example, the *S* class is contained either wholly or partially in the *M* class, and the *M* class is separate either wholly or partially from the *P* class, such a conclusion will never follow. Thus, an affirmative conclusion cannot be drawn from negative premises.

HURLEY, *supra* note 26, at 259. Notably, this example syllogism also violates another rule of logic, which prohibits both premises being negatives. See *State v. Lackey* discussed *infra* Part III, for a case example of this fallacy.

72. See COPI & COHEN, *supra* note 31, at 244-45.

only tell us something very small about the middle term, assuring us only that some or all of the major term is not a part of the middle term.

This is sort of like being in a new city and asking someone for directions to the local coffee shop. If the person tells you, "Well, you don't go down Rose Street," or "You'll never get there if you turn right at the stop light," these statements are true, and they might even be important, but they tell you very little about the best way to get to the coffee shop. The rules of logic tell us that the conclusion must be a negative one, not a positive one. Stated otherwise, this fellow's directions can lead you to conclude how *not* to get to the coffee shop, but they cannot lead you to conclude how to get to the coffee shop. Stated syllogistically:

All of the best routes to the coffee shop involve driving to Water Street.

Driving southbound on Rose Street will not lead to Water Street.

Therefore, driving southbound on Rose Street is not one of the best routes to the coffee shop.⁷³

This syllogism, which has a negative minor premise, is valid, but it is limited to a negative (and not particularly helpful) conclusion. Compare it to the following fallacious syllogism.

All of the best routes to the coffee shop involve driving to Water Street.

Driving southbound on Rose Street will not lead to Water Street.

Therefore, driving northbound on Rose Street is one of the

73. The structure of this syllogism could be simplified further to clarify its logical structure:

The best routes are the routes that lead to Water Street.

A route Southbound on Rose Street is not a route that leads to Water Street.

Therefore, a route Southbound on Rose Street is not a best route.

best routes to the coffee shop.⁷⁴

The conclusion is a bit more tempting, but logically unreliable. While the minor premise indeed assures us that if we were to drive southbound on Rose Street we would never reach the coffee shop, nothing assures us that the inverse would produce a different result. This is inherent in the limited value of a negative premise. It can only tell us what is not; it cannot reliably tell us what is.

There is something subtly alluring about the logically invalid framework of this kind of illogical argument that makes us want to accept it, faulty reasoning and all. Psychology describes the problem in terms of heuristics and the “atmosphere hypothesis”:

When quantifiers such as “all,” “some,” and “none” are used within syllogisms, additional errors in reasoning occur. People are more likely to accept positive conclusions to positive premises and negative conclusions to negative premises, *negative conclusions if premises are mixed*, a universal conclusion if premises are universal (all or none), a particular conclusion if premises are particular (some), and a particular conclusion if one premise is general and the other is particular. These observations led to the atmosphere hypothesis, which suggests that the quantifiers within the premises create an “atmosphere” predisposing subjects to accept as valid conclusions that use the same quantifiers.⁷⁵

74. The structure of this syllogism could be simplified further to clarify its logical structure:

The best routes are the routes that lead to Water Street.
A route southbound on Rose Street is not a route that leads to Water Street.

Therefore, a route southbound on Rose Street is not the best route.

75. Hubbard, *supra* note 12, at 1123 (emphasis added).

If people, particularly legal thinkers and decision-makers, are psychologically predisposed to “accept negative conclusions if premises are mixed,” then logical form and formal fallacies become very important and very practical concerns.

III. Courts Have Recognized the Fallacy of Negative Premises as Fallacious Reasoning, and Rejected Such Arguments as Logically Invalid and Unreliable

Of course, if logical form were not a real part of the fabric of American jurisprudence, the former discussion would have little relation to what lawyers and judges really do and would be difficult to apply to practical legal reasoning. However, logical form *is* an important part of our jurisprudence and logical form, and while important theoretically, it is also easily applied in legal argument. In fact, courts regularly evaluate logical form—often on a superficial basis, but sometimes in a more comprehensive fashion. In some cases courts even use the rules of logic, applying them in much the same fashion as a substantive legal rule and recognizing them as authoritative in evaluating legal argument. Courts have used the Fallacy of Negative Premises as well as the fallacies of Denying the Antecedent,⁷⁶ Affirming the Consequent,⁷⁷ the Fallacy of the

76. See, e.g., *Wilson v. Clark*, 372 F. App'x 745, 747 (9th Cir. 2010); *Arar v. Ashcroft*, 585 F.3d 559, 601 (2d Cir. 2009); *Carver v. Lehman*, 528 F.3d 659, 671 (9th Cir. 2008), *withdrawn*, 540 F.3d 1011 (9th Cir. 2008); *AGRI Processor Co. v. NLRB*, 514 F.3d 1, 6 (D.C. Cir. 2008); *E. Armata, Inc. v. Korea Commercial Bank of N.Y.*, 367 F.3d 123, 131 (2d Cir. 2004); *Tobey v. United States*, 794 F. Supp. 2d 594, 601 (D. Md. 2011) (citing *TorPharm, Inc. v. Ranbaxy Pharms., Inc.*, 336 F.3d 1322, 1329 (Fed. Cir. 2003)); *Zortman v. J.C. Christensen & Assocs., Inc.*, 819 F. Supp. 2d 874, 877 (D. Minn. 2011); *Optigen, LLC v. Int'l Genetics, Inc.*, 777 F. Supp. 2d 390, 402 n.10 (N.D.N.Y. 2011); *Adelphia Recovery Trust v. Bank of Am.*, No. 05 CIV. 9050, 2010 WL 3452374, at *5 (S.D.N.Y. Sept. 1, 2010); *Garcia v. United States*, No. 08 Civ. 4733, 2010 WL 1640224, at *5 (S.D.N.Y. Apr. 21, 2010); *Cusamano v. Sobek*, 604 F. Supp. 2d 416, 474 n.122 (N.D.N.Y. 2009); *IMS Health Inc. v. Sorrell*, 631 F. Supp. 2d 434, 447 (D. Vt. 2009), *rev'd*, 630 F.3d 263 (2d Cir. 2010), *aff'd*, 131 S. Ct. 2653 (2011); *Odyssey Marine Exploration, Inc. v. Unidentified, Shipwrecked Vessel*, 675 F. Supp. 2d 1126, 1132 n.5 (M.D. Fla. 2009); *N.W. Steel Erection Co. v. Zurich Am. Ins. Co.*, No. 4:07-CV-3184, 2008 U.S. Dist. LEXIS 4082, at *4 (D. Neb. Jan. 18, 2008); *Bell Atlantic Corp. v. MFS Commc'ns Co.*, 901 F. Supp. 835, 849 (D. Del. 1995); *Hellweg v. Comm'r*

Undistributed Middle Term,⁷⁸ and the Fallacy of the Illicit

of Internal Revenue, 101 T.C.M. (CCH) 1261 (T.C. 2011); *Villines v. Harris*, 11 S.W.3d 516, 520 n.2 (Ark. 2000); *Thomson v. Beuchel*, 2007 Cal. App. LEXIS 6242, at *18 n.6 (Cal. Ct. App. July 31, 2007); *Thompson v. Clarkson Power Flow, Inc.*, 254 S.E.2d 401 (Ga. Ct. App. 1979); *French v. State*, 362 N.E.2d 834, 843 n.1 (Ind. 1977) (DeBruler, J., concurring in part and dissenting in part); *Mark v. Comm'r of Pub. Safety*, No. A04-1905, 2005 WL 1089016, at *1 n.3 (Minn. Ct. App. May 10, 2005); *Health Pers. v. Peterson*, 629 N.W.2d 132, 134 n.3 (Minn. Ct. App. 2001); *State v. Clifford*, 121 P.3d 489, 501 (Mont. 2005) (Nelson, J., concurring); *State v. Wetzel*, 114 P.3d 269, 275-76 (Mont. 2005) (Leaphart, J., dissenting); *Dep't 56, Inc. v. Bloom*, 720 N.Y.S.2d 920, 923 (N.Y. Sup. Ct. 2001); *Iams v. DaimlerChrysler Corp.*, 883 N.E.2d 466, 478-79 (Ohio Ct. App. 2007); *Edwards v. Riverdale Sch. Dist.*, 188 P.3d 317, 321 (Or. Ct. App. 2008); *Hale v. Water Res. Dep't*, 55 P.3d 497, 502 (Or. Ct. App. 2002); *Thompson v. State*, 108 S.W.3d 269, 278 (Tex. Crim. App. 2003) (Keasler, J., concurring in part and dissenting in part); *In re Luna*, 175 S.W.3d 315, 320 n.4 (Tex. App. 2004), *withdrawn*, *In re Luna*, 275 S.W.3d 537 (Tex. App. 2008); *Zinpro Corp. v. Ridenour*, No. 07-96-0008-CV, 1996 Tex. App. LEXIS 3380, at *10 n.4 (Tex. App. Aug. 1, 1996); *Manchester Oaks Homeowners Ass'n v. Batt*, 732 S.E.2d 690, 699 (Va. 2012). See Stephen M. Rice, *Conventional Logic: Using the Logical Fallacy of Denying the Antecedent as a Litigation Tool*, 79 MISS. L.J. 669 (2010), for a discussion of the Denying the Antecedent and its treatment in case law.

77. See, e.g., *Gilliam v. Nev. Power Co.*, 488 F.3d 1189, 1196 n.7 (9th Cir. 2007); *In re Stewart Foods, Inc. v. Broecker*, 64 F.3d 141, 145 n.3 (4th Cir. 1995); *United Tel. Co. of Carolinas, Inc. v. FCC*, 559 F.2d 720, 725-26 (D.C. Cir. 1977); *Toussaint v. Good*, No. 3:05-CV-443-KRG-KAP, 2008 WL 2994768, at *2 n.1 (W.D. Pa. Aug. 4, 2008), *aff'd*, 335 F. App'x 158 (3d Cir. 2009); *Topliff v. Wal-Mart Stores E. LP*, No. 6:04-CV-0297 (GHL), 2007 U.S. Dist. LEXIS 20533, at *183 (N.D.N.Y. Mar. 22, 2007); *Adams v. La.-Pac. Corp.*, 284 F. Supp. 2d 331, 338 (W.D.N.C. 2003), *rev'd in part, vacated in part, and remanded*, 177 F. App'x 335 (4th Cir. 2006); *United States v. Carlson*, 67 M.J. 693, 699 (N-M. Ct. Crim. App. 2009); *United States v. Balcarczyk*, 52 M.J. 809, 812 n.4 (N-M. Ct. Crim. App. 2000); *In re Jeffery*, No. H031673, 2008 Cal. App. LEXIS 7976, at *25 (Cal. Ct. App. 2008); *Pirtle v. Cook*, 956 S.W.2d 235, 248 (Mo. 1997) (Price, Jr., J., dissenting); *City of Green Ridge v. Kreisel*, 25 S.W.3d 559, 563 & n.2 (Mo. Ct. App. 2000); *Paulson v. State*, 28 S.W.3d 570, 572 (Tex. Crim. App. 2000); *Daniels v. Empty Eye, Inc.*, 368 S.W.3d 743, 752 (Tex. App. 2012); *Culton v. State*, 95 S.W.3d 401, 405 (Tex. App. 2002). See Stephen M. Rice, *Conventional Logic: Using the Logical Fallacy of Affirming the Consequent as a Litigation Tool*, 14 BARRY L. REV. 1 (2010), for a discussion of the Fallacy of Affirming the Consequent and its treatment in case law.

78. See, e.g., *Spencer v. Texas*, 385 U.S. 554, 578 (1967) (Warren, C.J., concurring in part and dissenting in part); *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 134 (1948) (Frankfurter, J., concurring); *Allied Erecting & Dismantling, Co. v. USX Corp.*, 249 F.3d 191, 202 & n.1 (3d Cir. 2001); *Aylett v. Sec'y of Hous. & Urban Dev.*, 54 F.3d 1560, 1569 (10th Cir. 1995); *Hernandez v. Denton*, 861 F.2d 1421, 1439 (9th Cir. 1988) (Aldisert, J.,

Process.⁷⁹ Accordingly, studying how courts have used the Fallacy of Negative Premises to decide cases is instructive. These illustrative cases provide authority for the application of this rule of logic to the process of legal reasoning.

Recently, the Washington Court of Appeals utilized the Fallacy of Negative Premises in considering a motion to

concurring in part and dissenting in part); *McHugh v. Hillerich & Bradshy Co.*, No. C07-03677 JSW, 2010 WL 682339, at *4 (N.D. Cal. Feb. 24, 2010), *aff'd*, 413 F. App'x 240 (Fed. Cir. 2011); *Regalado v. City of Chicago*, No. 96 C 3634, 1999 U.S. Dist. LEXIS 14902, at *4 (N.D. Ill. Aug. 31, 1999); *British Steel PLC v. United States*, 929 F. Supp. 426, 436 n.11 (Ct. Int'l Trade 1996); *Lucas Aerospace, Ltd. v. Unison Indus., L.P.*, 899 F. Supp. 1268, 1287 (D. Del. 1995); *Foster v. McGrail*, 844 F. Supp. 16, 21 (D. Mass. 1994); *Pearson v. Bowen*, 648 F. Supp. 782, 792 n.26 (N.D. Ill. 1986); *United States v. Gambale*, 610 F. Supp. 1515, 1525 (D. Mass. 1985); *Amusement Equip., Inc. v. Mordelt*, 595 F. Supp. 125, 130 n.4 (E.D. La. 1984), *aff'd in part, rev'd in part*, 779 F.2d 264 (5th Cir. 1985); *Menora v. Ill. High Sch. Ass'n*, 527 F. Supp. 632, 636 (N.D. Ill. 1981); *Lakeland Constr. Co. v. Operative Plasterers & Cement Masons Local No. 362*, No. 79 C 3101, 1981 U.S. Dist. LEXIS 11584, at *4 (N.D. Ill. Mar. 24, 1981); *PPL Corp. v. Comm'r of Internal Revenue*, 135 T.C. 176, 186, 191 n.11 (T.C. 2010); *Desilu Prods., Inc. v. Comm'r of Internal Revenue*, 24 T.C.M. (CCH) 1695 (T.C. 1965); *Batty v. Ariz. State Dental Bd.*, 112 P.2d 870, 873 (Ariz. 1941); *Nickolas F. v. Super. Ct.*, 50 Cal. Rptr. 3d 208, 222 n.17 (Cal. Ct. App. 2006); *People v. Martinez*, 74 P.3d 316, 321 (Colo. 2003); *Royer v. State*, 389 So. 2d 1007, 1016 (Fla. Dist. Ct. App. 1979); *Barham v. Richard*, 692 So. 2d 1357, 1359 (La. Ct. App. 1997); *State v. Star Enter.*, 691 So. 2d 1221, 1229 n.8 (La. Ct. App. 1996); *Wein v. Carey*, 362 N.E.2d 587, 590-91 (N.Y. 1977); *Hicks v. State*, 241 S.W.3d 543, 546 (Tex. Crim. App. 2007); *Rushing v. Commonwealth*, 726 S.E.2d 333, 338 n.2 (Va. 2012); *State v. Zespy*, 723 P.2d 564, 570 n.1 (Wyo. 1986) (Urbigkit, J., concurring in part and dissenting in part). See Stephen M. Rice, *Indispensable Logic: Using the Logical Fallacy of the Undistributed Middle as a Litigation Tool*, 43 AKRON L. REV. 79 (2010), for a discussion of the Fallacy of the Undistributed Middle and its treatment in case law.

79. See, e.g., *Cook v. Moffat*, 46 U.S. (5 How.) 295, 299 (1847); *Walmsley v. City of Philadelphia*, 872 F.2d 546, 554 (3d Cir. 1989) (Aldisert, J., dissenting); *Posey v. State*, No. CACR 04-610, 2005 WL 1168401, at *2 (Ark. Ct. App. May 18, 2005); *State v. Lackey*, 208 P.3d 793, 797 (Kan. Ct. App. 2009), *rev'd*, 286 P.3d 859 (Kan. 2012); *Ochsner v. Idealife Ins. Co.*, 945 So. 2d 128, 135 (La. Ct. App. 2006) (Kirby, J., dissenting); *Bailey v. State*, 294 A.2d 123, 129 n.4 (Md. Ct. Spec. App. 1972); *Council of Orgs. & Others for Educ. about Parochial v. Governor of Mich.*, 548 N.W.2d 909, 920 n.7 (Mich. Ct. App. 1996) (O'Connell, J., dissenting). See generally *In re Collom's Estate*, 28 Pa. D. 503, 505 (Orph. 1919). 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 (2010), for a discussion of the Fallacies of Illicit Process (also known as the fallacies of the Illicit Major Term and Illicit Minor Term) and their treatment in case law.

suppress evidence.⁸⁰ In *State v. Weber*, the defendant moved to suppress evidence obtained by the State after a Washington state trooper stopped the defendant.⁸¹ The trooper observed the defendant failing to stop before pulling into the street and speeding at 2:53 a.m.⁸² The trooper pulled over the defendant and administered a sobriety test, which the defendant failed.⁸³ Breath tests revealed the defendant was driving under the influence of alcohol.⁸⁴ The trooper testified that while he is “always looking for DUI’s” he stopped the defendant for failing to stop and for exceeding the posted speed limit.⁸⁵ The defendant moved to suppress the evidence obtained after the stop, claiming the stop was a pretext.⁸⁶ The trial court granted the motion,⁸⁷ but the decision was subsequently reversed by the superior court.⁸⁸

The Washington Court of Appeals reviewed the findings of fact and scrutinized the basis for the trial court’s conclusion that the stop was a pretext to investigate whether the defendant was operating his vehicle under the influence of alcohol:

The trial court did not make any express statement about the trooper’s credibility, nor did it squarely find what motivated him to make the traffic stop. While we have an obligation to reasonably infer facts from the trial court’s judgment, it is difficult to determine what should be inferred here. Perhaps it could be inferred that the officer was motivated by something other than enforcing the speeding law, although there is not much in the record to support such

80. *See State v. Weber*, 247 P.3d 782 (Wash. Ct. App. 2011).

81. *Id.* at 782.

82. *Id.*

83. *Id.* at 782-83.

84. *Id.* at 783.

85. *Id.* at 783-84 (emphasis omitted).

86. *Id.* at 783.

87. *Id.* at 785.

88. *Id.*

an inference. To go any further and infer a specific motivation, however, fails on two accounts. First, nothing in the record would support such an inference, and a reviewing court must only infer facts that have substantial evidentiary support in the record. **Second, it is a long-recognized logical fallacy to draw an affirmative conclusion from a negative premise.** Thus, even if a reviewing court infers that the trial court factually found the trooper was not motivated to enforce the traffic law, it is not in a position to infer what the motive actually was.⁸⁹

The court went on to affirm the superior court's reversal of the trial court's order to suppress the evidence as being obtained from a pretextual stop.⁹⁰

In light of the discussion, *supra*, of the relationship between the fallacy and argumentative form, one might be surprised that the legal arguments here are never explicitly deconstructed into their basic logical form. This is one of practical benefits of the Fallacy of Negative Premises: It is simple to spot. It is evidence from a negative premise and a positive conclusion. Here, the fallacious pattern is evident without the need to deconstruct the argument into a strict syllogism. The court was considering whether the conclusion, "the trooper made a stop motivated by something other than enforcing a speeding law" could be supported by a premise like, "there is no evidence of the trooper's actual motivation."⁹¹

89. *Id.* at 786-87 (emphasis added) (citations omitted).

90. *Id.* at 788. The court utilized the Fallacy of Negative Premises to explain why the superior court's opinion reversing the trial court could not be based on a fallacious argument. It did so in the course of assuring itself of the logic of the superior court's limited substantiation of its decision to reverse the trial court. The court of appeals went on to affirm the superior court's reversal of the trial court's decision that the stop was pretextual. *Id.* at 791.

91. *See id.* at 786-87.

Next, in *State v. Lackey*,⁹² a court used the Fallacy of Negative Premises to evaluate an appellant's claim that further DNA testing should have been conducted in his rape and murder trial. The appellant in this case was convicted of raping and murdering a young woman.⁹³ The evidence used to prove the appellant's guilt involved DNA testing.⁹⁴ The DNA was consistent with the appellant's, and he was found guilty of first-degree murder and rape.⁹⁵ However, on appeal, the appellant claimed that further DNA testing should have been done on other evidence samples.⁹⁶ The appellant based his argument in part on a Kansas statute that states that any person found guilty of murder may petition a court for further DNA testing.⁹⁷ The court noted that this statute applied to any DNA testing that could produce "noncumulative, exculpatory evidence."⁹⁸ Because of this interpretation of the statute, the court found that the appellant's motion should be denied due to the Fallacy of Negative Premises.⁹⁹

The court explained that the appellant used the fact that not all DNA samples were tested from the crime scene as a premise of his argument.¹⁰⁰ It further stated specifically that the hairs were not tested from the victim's body.¹⁰¹ Hence, those hairs should be tested. The appellant's argument forms the following categorical syllogism:

"Not all DNA samples were tested [Major Premise];
Hairs found on the victim's body were not tested [Minor
Premise];
Therefore, the hairs found on the victim's body should be

92. 208 P.3d 793 (Kan. App. 2009).

93. *Id.* at 795.

94. *Id.*

95. *Id.* at 796.

96. *Id.* at 797.

97. *Id.*

98. *Id.* at 798.

99. *Id.* at 797-98.

100. *Id.* at 797.

101. *Id.*

tested [Conclusion].”¹⁰²

The court recognized that the argument, as stated, is fallacious.¹⁰³ The argument contains a negative premise; thus, no positive conclusion can be made.¹⁰⁴ In this case, the appellant’s argument has two negative premises and an affirmative conclusion and is consequently guilty of the Fallacy of Exclusive Premises.¹⁰⁵

The court suggested that the appellant might have reformed an argument based on the Kansas statute to avoid the violation of a rule of logic.¹⁰⁶ However, such a re-formed argument would have to be based on the positive premise that additional DNA testing would “produce noncumulative, exculpatory evidence” to logically support a positive conclusion.¹⁰⁷ The court rejected this argument because the DNA testing would not produce exculpatory evidence. In other words, while such a restructured argument would take a logically valid form, the conclusion would fail because the court

102. *Id.*

103. *Id.* While the court is correct in recognizing that the syllogism cannot support a positive conclusion and that it commits the fallacy of the negative premise, the syllogism is otherwise deficient. The major premise contains two terms: “DNA samples” and “samples [that] were tested.” The minor premise contains two terms: “hairs found on the victim’s body” and “[samples] that were not tested.” The conclusion only references the two terms found in the minor premise: “hairs found on the victim’s body” and “[samples] that were not tested.”

104. The court also recognized that the syllogism posed by the court contains two negative premises, which violates yet another rule of logic (i.e., that two negative premises are not allowed). This is known as the Fallacy of Exclusive Premises. See PATRICK J. HURLEY, A CONCISE INTRODUCTION TO LOGIC 266 (10th ed. 2008). See also NORMAN L. GEISLER & RONALD M. BROOKS, COME, LET US REASON: AN INTRODUCTION TO LOGICAL THINKING 41 (1990) (“If nothing from one group has anything in common with anything from another group, there is nothing you can say about the two groups in common. As Richard Rodgers’ popular song said, ‘Nothing comes from nothing: nothing ever could.’ This is often called the fallacy of ‘Exclusive Premises’ because the two negative premises exclude the possibility of any relation between them.”).

105. *Lackey*, 208 P.3d at 797-98 (citing ALDISERT, *supra* note 57, at 145-46). (“Lackey’s syllogistic argument violates both Rules 4 and 5 of categorical syllogism: it has two negative premises and an affirmative conclusion.”).

106. *Id.* at 798.

107. *Id.*

did not accept the truth of the required premise.¹⁰⁸

The Fallacy of Negative Premises was used in another case to reveal a logical fallacy in a legal conclusion and to teach a valuable lesson about statutory drafting. In *City of Wichita v. Stevenson*,¹⁰⁹ the court was faced with the application of a simple city ordinance. The ordinance¹¹⁰ provided, in the applicable part, that “No person shall permit overcrowding or admittance of any person beyond the approved capacity of a building or a portion thereof.”¹¹¹ The appellant was convicted of violating the ordinance on three occasions in 2009.¹¹² She was present at a tavern called Harry & Ollie’s in Wichita, Kansas, on each of those three occasions.¹¹³ However, she argued that she was neither the owner nor a manager on duty on any of the three occasions for which she was charged, but merely a patron drinking and socializing in a tavern.¹¹⁴ Appellant’s legal

108. *Id.* at 798-99. Logicians recognize a distinction between an argument that is logically “valid” and an argument that is “true.” Logical validity is a function of complying with rules of logic. If the rules are followed, then the argument’s form is valid. However, an argument’s valid form does not necessarily mean the conclusion is true. Truth (or falsity) is an attribute of the individual propositions that appear within an argument. Accordingly, the logical form of an argument is either valid or invalid; it is neither true nor false. Conversely, the premises of an argument are either true or false; they are neither valid nor invalid. These distinct concepts of truth and falsity, validity and invalidity, work together. When the logical form of an argument is valid, and its premises are true, then the argument requires that the conclusion be true. If either a premise is false, or the form is invalid, the conclusion cannot necessarily be true. See COPI & COHEN, *supra* note 31, at 30-31.

109. *City of Wichita v. Stevenson*, 265 P.3d 598 (Kan. Ct. App. 2011).

110. *Id.* at *1.

111. *Id.*

112. *Id.* at *1-2.

113. *Id.* at *1.

114. *Id.* (“Stevenson argued the ordinance unconstitutionally failed to place limits on who police officers could cite for permitting overcrowding as evidenced by the fact that (1) she was not the owner of Harry & Ollie’s, (2) she was not the manager on duty on February 7, April 11, or April 18, 2009, and (3) although she was in the bar on all three occasions, it was only because she was socializing with friends.”); *see also* Brief of Appellant, at *2, *City of Wichita v. Stevenson*, 265 P.3d 598 (Kan. Ct. App. 2011) (No. 09 CR 2601), 2010 WL 5626644 (“The defendant, Patricia Stevenson, was one of the managers of Harry and Ollies. Ms. Stevenson’s daughter, Kristie McNeil, was the owner of the tavern. Ms. Stevenson ordinarily worked 30 hours a week,

argument on appeal was that the ordinance was unconstitutionally vague, since the term “no person” did not define who *was* responsible for ensuring compliance with the statute.¹¹⁵

The court disagreed, ultimately holding that “[n]o person shall permit overcrowding”

makes it clear that the individual who is culpable under the ordinance is the individual who actually permits the building to be over capacity. It is the responsibility of the police and fire departments to determine who permits, gives consent, authorizes, makes possible, or gives opportunity for the building to be occupied over capacity. The common and well-understood meaning of the word “permit” provides a clear standard for those who enforce the ordinance.¹¹⁶

However, the dissenting judge would have held otherwise, and he justified his conclusion in terms of logical form, specifically, the Fallacy of Negative Premises:

Subsection 15.01.480 of the Wichita City Ordinance states: “No person shall permit overcrowding or admittance of any person beyond the approved capacity of a building or a portion thereof.” Stevenson alleges that this subsection of the ordinance is unconstitutionally vague because the word “person” could mean “any human being.” And “person” is a term that can be applied without limitation. Stevenson is correct. For example, “[n]o person shall permit overcrowding” is a universal negative

and worked only the day shift. Although she did not work the night shift, occasionally Ms. Stevenson met friends at Harry and Ollies in the evening, to drink and socialize.” (citations omitted).

115. *Stevenson*, 265 P.3d at *3.

116. *Id.* at *5.

proposition: all persons are excluded from the class of things that allow overcrowding; and all members of the class of things that allow overcrowding are excluded from the class of persons. Thus, “[n]o person shall permit overcrowding” asserts that if anyone is a person, then he or she will not allow overcrowding. This negative premise can be reconstructed into the following syllogism:

Major Premise: No person shall permit overcrowding.

Minor Premise: The bartender is a person.

Conclusion: Therefore, the bartender shall not allow overcrowding.

By not explaining who is “no person,” the ordinance is deficient. Persons of common intelligence would be required to guess at the phrase’s meaning and differ as to how the regulations should be enforced. For example, the ordinance contains no guidelines to assist either a person who desires to know whether he or she is the person who is not to allow overcrowding or an official who is charged with the enforcement of the ordinance.¹¹⁷

Judge Henry W. Green, Jr., wrote the dissenting opinion in *City of Wichita v. Stevenson*. He also wrote the majority opinion in *State v. Lackey*. While Judge Green does not provide an explanation of the Fallacy of Negative Premises in *City of Wichita v. Stevenson*, his recitation of this rule of logic from *State v. Lackey* is just as applicable here: “[I]f one premise is negative, the conclusion must be negative.”¹¹⁸ Accordingly, logic

117. *Id.* at *5-6 (Green, J., dissenting).

118. *State v. Lackey*, 208 P.3d 793, 797 (Kan. App. 2009).

precludes drawing a positive conclusion from a negative premise, such as “no person shall permit overcrowding.”

Similarly, in the case of *Ochsner v. Idealife Insurance Company*,¹¹⁹ the dissenting judge pointed out how the appellate court committed the Fallacy of Negative Premises when it rendered its opinion. In *Ochsner*, the appellant, the surviving spouse of the insured, was attempting to compel the insured’s life insurance company to pay death benefits to the appellant.¹²⁰ The insurer claimed that the insured had quit paying his policy premiums nine years before his death.¹²¹ As a result, the insurer cancelled the insured’s life insurance without giving notice to him.¹²² The court ruled that Louisiana statute provided that “**No life insurer shall within one year after default in payment of any premium, . . . declare forfeited or lapsed any policy . . . [without giving the statutorily prescribed notice].**”¹²³ The insurer argued that it provided notice of cancellation to the insured’s bank, but not to the insured himself.¹²⁴ However, the court held that the notice of cancellation sent to the bank did not meet the requirements of the statute.¹²⁵

The insurer focused on the “within one year” provision of the statute to argue that since the nonpayment of the premium extended beyond one year, no written notice was required.¹²⁶ The insurer argued that accordingly, after one year of nonpayment, “all life insurers shall declare the subject policy forfeited or lapsed” regardless of notice.¹²⁷ The court accepted this argument. However, the dissenting judges evaluated the argument in terms of logical form and opined that such a

119. 945 So. 2d 128 (La. Ct. App. 2006).

120. *Id.* at 129-30.

121. *Id.* at 130.

122. *Id.* The policy had been pledged to the insured’s bank, which later assigned its interest in the policy to an assignee. *Id.* The insurer also assigned and delegated its rights and obligations under the policy to another entity. *Id.*

123. *Id.* at 135 (Kirby, J., dissenting).

124. *Id.* at 131.

125. *Id.* at 131.

126. *Id.* at 132.

127. *Id.* at 135 (Kirby, J., dissenting).

conclusion could not logically be drawn from the negative premise upon which the argument was based, since doing so would require one to draw an affirmative conclusion from a negative premise.¹²⁸ Here, the dissenting opinion does not even arrange the argument into a syllogism. Instead, it simply relies on the simple rule of logic that one cannot reach any affirmative conclusion (All life insurance policies unpaid after a year must lapse) from a negative premise (“No life insurer shall within one year after default in payment of any premium . . . declare . . . lapsed any policy . . . [without giving the statutorily prescribed notice].”).¹²⁹

The Fallacy of Negative Premises was also an analytical tool in the dissent in *Walmsley v. City of Philadelphia*.¹³⁰ In *Walmsley*, an expert witness in a police brutality case testified that a man died from multiple blows to the head.¹³¹ The plaintiff argued that the blows occurred as a result of police brutality, while the police claimed that the man died from blows received in a fight that occurred prior to any police confrontation.¹³² The parties agreed that prior to entering

128. *Id.*

129. *Id.* (emphasis omitted). The dissent evaluated logical form in the context of the rules of statutory construction: “When the language of the law can have multiple meanings La. C.C. art. 10 mandates us to give it the meaning that best conforms to the purpose of the law.” *Id.* at 136.

130. *Walmsley v. City of Philadelphia*, 872 F.2d 546, 554 (3d Cir. 1989).

131. *Id.* at 547-48.

132. *Id.* More specifically, expert testimony suggested:

[T]hese injuries were almost certainly caused by multiple blows to the head with a blunt instrument. An expert also testified that it was the head/scalp injuries, rather than the facial injuries, which caused the brain swelling resulting in Thomas Walmsley's death. Although a toxicology report produced after the autopsy also disclosed lethal levels of barbiturates and diazepam in Thomas Walmsley's (“Tom”) body, an expert testified that in his opinion these drugs were not responsible for the brain swelling that caused Tom's death. That expert also testified that it was unlikely Tom's injuries could have resulted from a fall, resulting in contact with a wall or rock, or from a fistfight, due to their severity, location, and the lack of external abrasions. He opined that it was possible the injuries were the result of

police custody, the deceased had been in a fight with his brother, and that near the end of the fight the deceased was struck two or three times in the face.¹³³ Sometime after the fight, police arrived and took the deceased into custody. While the police were transporting him to the police station, the deceased lost consciousness and died.¹³⁴ The deceased's family claimed that before the police confrontation, they had an opportunity to observe the deceased, brushed his hair back from his face, and saw no lumps on his head.¹³⁵ Afterwards, however, lumps were visible.¹³⁶ The plaintiff argued that since the witnesses observed no lumps before the police confrontation, but observed them after, the lumps must not have been caused by the fight that preceded the confrontation.¹³⁷

The court found that this testimony was enough evidence for a jury to reasonably infer that the police caused the man's death. Further, sufficient circumstantial evidence was given by the plaintiff to permit a jury to conclude that the man had been involved with the police when he received the injuries. The dissenting judge, Judge Ruggero J. Aldisert,¹³⁸ argued that because no direct evidence was presented, the court should not have ruled that the police could have caused the injuries.¹³⁹ He explained that the court gave too much weight to the family's claim that no lumps were observed on the deceased's head

being clubbed with a nightstick.

Id. at 548 (citations omitted).

133. *Id.*

134. *Id.* at 550.

135. *Id.* at 550-51.

136. *Id.*

137. *Id.* at 554 (Aldisert, J., dissenting).

138. The dissenting judge is Judge Ruggero J. Aldisert, Senior Judge for the United States Court of Appeals for the Third Circuit, sitting by designation. Judge Aldisert has written several opinions discussing logic in legal argument. He is the author of other works specifically addressing formal logic in legal reasoning, including *Logic for Lawyers: A Guide to Clear Legal Thinking* and *Logic For Law Students: How To Think Like A Lawyer* in addition to several other books focusing on the judicial process.

139. *Walmsley*, 872 F.2d at 553.

before he was in police custody.¹⁴⁰ Judge Aldisert observed that this was particularly true in light of the fact that there was no evidence that the family members looked for lumps on the deceased's head after the fight with his brother.¹⁴¹ From this, an inference was drawn that there were no bumps on the head before the confrontation, but such an inference was inappropriate in these circumstances.¹⁴² Accordingly, Judge Aldisert would have held that the appellant's argument committed the Fallacy of Negative Premises and should have been rejected by the court.¹⁴³

Judge Aldisert succinctly identified what is wrong with this fallacious pattern of reasoning:

This type of reasoning is unacceptable because of the difficulty in sustaining a factual proposition merely by negative evidence. When an advocate determines that there is no evidence that B (bumps on the head) is the case; he or she is attempting to affirm or assume that non-B is the case. But all that is affirmed or assumed is that the advocate has found no *evidence* of non-B. The correct method of proceeding is to find affirmative evidence of non-B. This may be difficult, but it is absolutely necessary if logical order is to be preserved. To prove a negative is sometimes an impossible task. Not knowing that something exists is simply not knowing. Similarly, not knowing that Walmsley hit his head during the fight with his brother does not imply that he did or did not hit his head.¹⁴⁴

In *Kolakowski v. Secretary of Health and Human Services*, the Fallacy of Negative Premises was utilized again by a court

140. *Id.* at 554.

141. *Id.*

142. *Id.*

143. *Id.*

144. *Id.*

evaluating a claimant's argument.¹⁴⁵ However, in this case one might take issue with how the court implemented the rule of logic. In *Kolakowski*, the plaintiffs filed a petition for compensation under the National Childhood Vaccine Injury Act of 1986.¹⁴⁶ They alleged that their son had died as a result of the Thimerosal contained in two Hepatitis B vaccinations.¹⁴⁷ One of the issues in the case involved the impact of a "safety reference dose" on the claimants' argument.¹⁴⁸ The court critiqued the claimants' argument in terms of formal logic, specifically, the Fallacy of Negative Premises:

A large point of confusion, that apparently confused Petitioners in their brief, concerns the safety reference dose. This dose is an amount of the substance which, if no more than that amount is consumed daily (on average), adverse outcomes are all but certain to be avoided. In every instance, it assumes a value from the most sensitive data points recorded, and adds orders of magnitude whenever there is an ambiguity. Suffice it to say that it is a logical fallacy ("affirmative conclusion from a negative premise") to use the following statement: "IF the reference dose of methyl mercury is not exceeded in average daily consumption, THEN no adverse outcomes will result," in order to conclude through reformulation that "IF an amount of ethyl mercury over the reference dose of methyl mercury is consumed on two separate days of a series, but not every day or in very large amounts, THEN adverse outcomes will result."¹⁴⁹

145. *Kolakowski v. Sec'y of Health & Human Servs*, No. 99-0625V, 2010 WL 5672753, at *2 (Fed. Cl. Nov. 23, 2010).

146. *Id.* at *1.

147. *Id.*

148. *Id.* at *132-33.

149. *Id.* at 133. Notably, the court went on to explain this line of reasoning further, again, in terms of deductive logic:

The court here reduces the plaintiff's argument to the following syllogism:

"If the reference dose of methyl mercury is not exceeded in average daily consumption, then no adverse outcomes will result."¹⁵⁰

Aside from this obvious fallacy, there is also present in that formulation the "*quantifier-shift fallacy*" of attributing to ethyl mercury the precise characteristics of methyl mercury, mercury chloride, or elemental mercury: Even if ethyl mercury is a form of mercury (which in some dosage is toxic or lethal, depending on its form), and shares characteristics with all forms of mercury (most of all methyl mercury as another organomercurial), *it does not logically follow, as a deductive exercise, that ethyl mercury shares every characteristic of the others*. If it does not, then part of proving that ethyl mercury damages infants would include an inductive course of determining exactly what ethyl mercury is capable of, and its precise characteristics as a substance. It is improper even to begin from the same reference dose as methyl mercury, for that matter. Dr. Lucier subjectively weighed attributes that are qualitatively, not just quantitatively, distinct, in order to arrive at his judgment that ethyl mercury is just as toxic as methyl mercury. The Court does not accept such a premise as proven, without some objective standard to assess his balancing of toxicity factors. Moreover, that opinion is not corroborated by the medical literature filed in this case. Dr. Lucier admitted as much when he said that regulatory agencies, in the interest of efficiency, will study chemical groups instead of individual chemicals, and their practice in doing so is to pick the most toxic of the group to study, and assign a reference dose. Noticeably, not one of the regulatory agencies discussed herein ever thought to study ethyl mercury for this purpose instead of methyl mercury. Despite this, Dr. Lucier's opinion concerning the toxicity of ethyl mercury in thimerosal was based throughout on the supposition either that ethyl mercury was the same as methyl mercury, or that it was even more toxic.

Id. (emphasis added).

150. *Id.*

The reference dose of methyl mercury was exceeded in average daily consumption.

Therefore, adverse outcomes will result.¹⁵¹

The court's syllogism takes the form of a hypothetical syllogism,¹⁵² rather than the categorical syllogism¹⁵³ described above. Since the Fallacy of Negative Premises results from the violation of one of the rules of categorical syllogisms,¹⁵⁴ one could be critical of the court's application of this syllogistic rule to the argument as articulated by the court.¹⁵⁵

Nonetheless, the court appears to have arrived at a correct conclusion, criticizing the logical form of the syllogism. The syllogism described by the court appears to commit another formal fallacy, the Fallacy of Denying the Antecedent. This fallacy results from violating the rule required of hypothetical syllogisms. The rule has been summarized this way: "A valid hypothetical syllogism either denies the consequent . . . or affirms the antecedent . . . of the major premise; it doesn't deny the antecedent or affirm the consequent."¹⁵⁶ Since the hypothetical syllogism described by the court denies the antecedent term, it cannot support its conclusion.¹⁵⁷

151. *See id.*

152. *See supra* text accompanying note 39.

153. *See supra* notes 32-40 and accompanying text.

154. The five syllogistic rules, including the rule that requires that if either premise is negative, the conclusion must be negative, apply only to standard-form categorical syllogism. *See* COPI & COHEN, *supra* note 31, at 249.

155. Of course, the syllogism does include a negative premise. The syllogism might be reduced to symbols and considered this way:

If A, then B.

Not A.

Therefore, not B.

The premise "the reference dose of methyl mercury was exceeded in average daily consumption" (symbolized as "not A" in the syllogism above) is a negation of the term "the reference dose of methyl mercury is not exceeded in average daily consumption" ("if A" in the syllogism above).

156. GEISLER & BROOKS, *supra* note 104, at 65.

157. *See* Rice, *supra* note 76, for an article describing the Fallacy of

Even if the argument is couched in terms of a categorical syllogism, it in fact commits the Fallacy of Negative Premise. Hypothetical syllogisms can be “reduced” or converted to categorical syllogisms.¹⁵⁸ For example, the syllogism at issue in the lawsuit could be formed as follows:

All reference doses of methyl mercury within the average daily consumption are not doses that will produce adverse outcomes.

The reference dose of methyl mercury at issue in this case was not a dose of methyl mercury within the average daily consumption.

Therefore, the reference dose of methyl mercury at issue in this case is a dose that will produce adverse outcomes.¹⁵⁹

Since both the major and minor premises contain a negative term, the court was correct in recognizing that the argument cannot support the positive conclusion advanced by the claimants.

Denying the Antecedent and illustrating its application by courts.

158. “The authority of the rules operative in the hypothetical syllogism is found in the more extensive and fundamental legislation of the categorical syllogism To see this we need only to lift the ‘if’ out of the more flexible syllogism and put our argument into firmer [categorical] form.” CHARLES GRAY SHAW, *LOGIC IN THEORY AND PRACTICE* 172 (1935). *See also* JOHN LEECHMAN, *LOGIC: DESIGNED AS AN INTRODUCTION TO THE STUDY OF REASONING* 86-87 (1864) (providing more detailed instruction on reducing hypothetical syllogisms to categorical syllogisms).

159. Reduced to symbols for clarity, the syllogism can be stated:

All As are not Bs.

All Cs are not As.

Therefore, all Cs are Bs.

“A” is equivalent to “reference doses of methyl mercury within the average daily consumption.” “B” is equivalent to “dose[s] that will produce adverse outcomes.” “C” is equivalent to “the reference dose of methyl mercury at issue in this case.”

IV. Recognizing the Fallacy of Negative Premise and Using it to Defeat Fallacious Reasoning

After considering these examples and authorities, a pattern emerges that demystifies the Fallacy of Negative Premises as it commonly appears in legal argumentation. The pattern mirrors the rule of logic requiring that a negative premise cannot yield a positive conclusion. Some patterns will meet the requirements of this rule: a negative premise and a negative conclusion; a positive premise and a positive conclusion. One pattern will not meet the requirements of this rule: a negative premise and a positive conclusion.

Of course, the fact that the argument passes one rule does not necessarily mean that the argument is logically sound, since there are four or five other rules that it must comply with.¹⁶⁰ However, this is one of the benefits of fallacy-based legal reasoning. Lawyers are not always busy *making* perfect arguments. Frequently, the role of a judge or lawyer is to *spot* bad arguments. Spotting a bad argument can be as simple as understanding that the argument fails one rule of logic. So, fallacy-based legal reasoning is the process of using one's knowledge of the patterns of fallacious logical form to spot an invalid argument and explain why it is invalid. The process begins with being attentive to arguments that fit the patterns of invalid logical form—like, for example, the Fallacy of Negative Premises. A negative premise is straightforward to spot.

For example:

No contract to perform an illegal act is enforceable; or

Laypersons are not competent to testify as expert witnesses; or

Gratuitous promises are not enforceable under the doctrine of consideration.

Once a negative premise is spotted, examining the

160. See *supra* note 41.

argument can test the conclusion. In order to comport with this rule of logic, it must be stated in the negative. A positive conclusion will fail the test, and the argument is not reliable. For example:

No fugitive from justice is eligible to obtain a concealed-weapon permit.

The plaintiff is not a fugitive from justice.

Plaintiff is eligible to apply for a concealed-weapon permit.

No contract to perform an illegal act is enforceable.

The contract at issue in this litigation concerns a legal act.

Therefore, the contract at issue in this litigation is enforceable.

Laypersons are not competent to testify as expert witnesses.

Mr. Flashburger is a layperson.

Therefore, Mr. Flashburger is competent to testify as a fact witness.

Gratuitous promises are not enforceable under the doctrine of consideration.

The defendant's promise was not gratuitous.

Therefore, the defendant's promise is enforceable.

None of the *defendants listed in the complaint* will be found guilty of fraud.

None of the shareholders of the corporation were *listed as defendants in the complaint*.

Therefore, all of the shareholders will be found guilty of fraud.

Some intentional conduct is not tortious.

Battery is tortious.

Therefore, battery is not intentional conduct.

In the harsh light of the syllogistic form, some of these examples appear silly enough that they would not likely be advanced outside of logic textbooks and law review articles. However, they are illustrative of this fallacious pattern of argument, further revealed by reducing the arguments to symbols:

No As are Bs.
All Bs are Cs.
Therefore, all As are Cs.

or

Some As are not Bs.
All Bs are Cs.
Therefore, all As are Cs.

It is more likely that in practical legal argument, the Fallacy of Negative Premises takes a subtler, less formalistic, less syllogistic form. Whatever the form, the fallacy begins with a negative and ends with an affirmative. For example:

Since no federal court is vested with jurisdiction to hear this lawsuit, jurisdiction must be vested in this state court.¹⁶¹

Since the relationship between the lawyers did not have the indicia of a general partnership, they must have been engaged in an employment relationship.

161. See *Tri-Boro Bagel Co. v. Bakery Drivers Union Local 802*, 228 F. Supp. 720 (E.D.N.Y. 1963). In *Tri-Boro Bagel*, the court observed “[i]t is fallacious to reason from the negative. ‘No Court of the United States’ is vested with power, to an affirmative that state courts must therefore be possessed of such authority. The technical name logicians assign to the paralogism is the fallacy of ‘false opposition’ or ‘false disjunction.’” *Id.* at 724 n.11 (citation omitted). The case was cited as an example of the fallacy of the negative premise in Ruggero J. Aldisert’s *Logic for Lawyers, A Guide to Clear Thinking*. ALDISERT, *supra* note 57, at 2.

Since the defendant was acquitted of first-degree murder, he must be considered an innocent man.

In each argument, the hallmark of the fallacy is reaching an affirmative conclusion based on a negative premise. Stated otherwise, the arguments attempt to argue for a classification based on what is *not* within the class. While these conclusions may be correct, they need some other argument to support them. One cannot compel a positive conclusion based on negative claims, any more than one can learn the best way to travel to a destination based on instructions on how not to get there.

The import of spotting this type of fallacious argument is amplified when we consider our human attraction to the very element of such arguments that makes them necessarily unreliable: superficial heuristics. For example, consider this study of the psychological effect of a negative premise on a hearer's persuasion. If your faith in the power of human reasoning leads you to expect that because it includes a false premise and a positive conclusion, people were more likely to reject the argument, you might find your faith challenged:

In Experiment 1, participants were asked to choose the stronger of two arguments, one with a single positive premise and the identical argument with an additional negative premise.

Shostakovich elicits alpha waves.

Music of AC/DC does not.

Bach elicits alpha waves.

Shostakovich elicits alpha waves.

Bach elicits alpha waves.¹⁶²

The experiment revealed that the participants were *more* likely to accept the argument that is based on a negative premise

162. Heussen, *supra* note 10, at 1498.

than the argument without one.¹⁶³

V. Conclusion: Persuasive Reason, Superficial Heuristics, and the Practical Value of Logical Form

The psychology of superficial heuristics, like “atmosphere effects”¹⁶⁴ or “representativeness heuristic,”¹⁶⁵ reminds us of our human tendency to avoid sound logic and gives us important reasons to think critically and intentionally about the logical form of legal argument. Of course, there are many other reasons. Ultimately, logical form is an important distinguishing characteristic of the process of legal reasoning. It is important because attention to logical form, the “architecture of argument,”¹⁶⁶ is one method of avoiding capricious or prejudiced decision-making. Additionally, it is important because it helps legal thinkers avoid the consequences of bad judgments resulting from faulty heuristics. Understanding logical form is important because it provides a tool, a sort of metalanguage, for evaluating the logical characteristics of legal argument. Moreover, it is a tool that helps us distinguish logically sound legal reasoning from logically fallacious legal reasoning, which is important considering that fallacious arguments often sound valid, when in fact they are necessarily invalid.

Because logically fallacious reasoning is a risk to sound reasoning, law students, lawyers, and judges would do well to think intentionally about logical form and to educate themselves regarding the hallmarks of fallacious reasoning. One simple tool in the pursuit of such an education is a basic understanding of the rules of logic and the formal logical fallacies that result from violation of those rules. One such rule is the Fallacy of Negative Premises, the subject of this Article.

This Article cites more than 80 contemporary legal

163. *Id.* at 1505 (concluding that the authors’ research in inductive reasoning “provides empirical evidence for the idea that negative evidence can increase argument strength”).

164. *See supra* note 6.

165. *See supra* note 12.

166. *See generally* Raymond, *supra* note 25.

decisions utilizing formal logical fallacies to support or refute legal argument. The fallacies are the result of legal reasoning that fails to adhere to simple logical rules. It is important to realize that knowing even one rule of formal logic can yield significant results. One rule of logic states that negative premises cannot support affirmative conclusions. If an advocate attempts to justify his affirmative conclusion based on a negative premise, the argument fails, and the advocate must find some other justification for his claim.

Moreover, the science of psychology might provide us with motivation to evaluate such an argument and to evaluate the faulty logic of an opposing legal argument first, rather than as a last resort. If legal decision-makers are predisposed to superficial heuristics, then they are predisposed to accept logically unsound, necessarily unreliable, legal arguments. This psychological predisposition to accept arguments that superficially “sound logical,” but are not, is an important vulnerability. Understanding logical form, learning the role of logic in legal decision-making and argument, and identifying logical fallacies (like the Fallacy of Negative Premises), are important but frequently ignored skills in evaluating sound legal argument and in using logic in the art of persuasion.