

The Logocratic Conception of Evidence as Argument

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Dear Workshop participant:

I appreciate your taking a look at my paper. It has a lot of moving parts, so I've included a table of contents (next page), and the Overview, Section 1 and Section 3 are in total relatively brief and offer a concise summary of my topics and claims. Section 3 also has cross references to other parts of the paper in which I try to establish the particular theses that comprise my overall argument.

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- 4.4 (4) The list of four types of argument (modes of logical inference, "modes" for short) is exhaustive, and although each of the four modes is irreducible to any other, there are complex patterns of interaction and intersection among some of them, such as, induction and deduction can play a role within either analogical argument or abductive argument. ..55**

Overview of topic and argument

After its précis, this essay has a beginning, a middle, and an end, arranged for the convenience of the reader in that order. The beginning offers both an introduction to my topic – the relation between the concepts of *evidence* and of *argument* -- and a summary of my argument, which is that the concept of *evidence* is usefully, perhaps even best, conceived as *argument*. The middle offers the basics – only the basics, within the scope of this essay – of the theoretical framework (philosophical explanation) that supports my arguments regarding the topic, which I call the Logocratic Method. The end links the beginning and middle by drawing support from the Logocratic Method for my conclusions about intricate explicative relations between the concepts of evidence and argument.

2 The Beginning: Evidence and Argument, Evidence As Argument

Is the Bible or the Koran or the Torah or the Bhagavad Gita or (my personal favorite) the *स्पंदकारिका* *evidence* for the existence of a supreme deity, as conceived by Christians, Muslims, Jews, Hindus, or Shaivite Tantrists, respectively? According to the explanation I offer in this paper, the answer is "yes," howsoever vehemently an analyst of this evidence may reject the claim that any such putative supreme being exists. Central to my claim in this paper is that the best philosophical explanation of the concept of evidence sharply distinguishes evidence *per se* from *good* evidence or *warranted* evidence (and other approbative modifiers).

This paper inhabits two intersecting and mutually reinforcing philosophical explanations (that is, philosophical abductions, inferences to the best philosophical explanation), one of the concept of *evidence*, the other of the concept of *argument*. I shall try to give good reason to believe the following conclusions, each of which is, I claim, warranted by subsets of premises that comprise a synergistic superset:

(Thesis 1) the concept of *evidence* as best explained as *argument*, that is, as two sets of premises, one of which (called 'premises') is claimed by an arguer (actual or imagined) to provide warrant for another set (called 'conclusions').

(Thesis 2) Without loss of explanatory power, other conceptions of evidence, in law, philosophy, and "everyday life," can be recast in terms of evidence as argument; further, for many conceptions of evidence, this recasting will not only lose no explanatory power, it will gain some.

(Thesis 3) Corresponding to the claim that evidence is argument, there are types of evidence that correspond to four types of argument (which I shall explain, more precisely, as "modes of logical inference"). Specifically, corresponding to

deductive argument is deductive evidence, to inductive argument is inductive evidence, to analogical argument is analogical evidence, and to abductive argument is abductive evidence.

(Thesis 4) The list of four types of argument (modes of logical inference, "modes" for short) is exhaustive, and although each of the four modes is irreducible to any other, there are complex patterns of interaction and intersection among some of them, such as, induction and deduction can play a role within either analogical argument or abductive argument.

For those who basically agree with these claims, I hope my contribution is to help reveal how they may cogently be defended. For those who disagree, I hope my contribution is to offer cogent arguments worthy of dialectical combat with competing arguments against the theses.

The coordinated explanations of evidence and argument, and the four conclusions, just noted, drawn from these explanations, are all parts of a larger project of philosophical explanation of the nature of argument that I have been developing in writing and teaching (in U.S. and Europe). I call this explanation, and the specific method of analyzing arguments that this explanation underwrites, the *Logocratic Method*. I cannot in this paper present a complete account of the Logocratic Method (whatever 'complete' might mean), but I will try to present enough of the Logocratic Method to show how (I believe) it supports the four central theses I offer in this paper.

2.1 A central intuition: distinguishing evidence from good (warranted, etc.) evidence.

To see the central intuition that guides my analysis consider a few revealing passages from an astute philosophically interested writer on the epistemology of religion. In *The End of Faith*, Sam Harris repeatedly goes beyond the contention that religious believers have *poor* evidence for their beliefs, to the assertion that they have *no evidence* at all. Thus, of Christians, Jews, and Muslims, he asserts that it "should go without saying that these rival belief systems are all equally uncontaminated by evidence," asks how it could be for religious Americans, Hindus, Muslims, and Jews, that in this one area of our lives, we have convinced ourselves that our beliefs about the world can float entirely free of reason and evidence?," asserts that "there is no more evidence to justify a belief in the literal existence of Yahweh and Satan than there was to keep Zeus perched upon his mountain throne or Poseidon churning the seas," and that if "history reveals any categorical truth, it is that an insufficient taste for evidence regularly brings out the worst in us. Add weapons of mass destruction to this diabolical clockwork, and you have found a recipe for the fall of civilization," and that if one were to tell a "devout Christian . . . that the book he keeps by his bed was written by an invisible deity who will punish him

with fire for eternity if he fails to accept its every incredible claim about the universe, . . . he seems to require no evidence whatsoever."¹

Harris' contentions here assume and rely on what I shall call an *actual support conception* of the concept of evidence. The contrast I have in mind is with an *asserted support* conception of the concept of evidence, and the following two definitions specify the conceptions and their difference:

Asserted support conception of evidence

A proposition ϵ is evidence for a hypothesis h if and only if ϵ is *asserted by some proponent* to provide rational support for h .

Actual support conception of evidence

A proposition ϵ is *evidence* for a hypothesis h if and only if ϵ *actually provides* rational support for h .

It seems fair to say that most philosophical explications of the concept of evidence assume and defend some version of an asserted support conception. This feature of philosophical conceptions of evidence is evidenced (!) by the close connection in philosophical accounts between the network of concepts of evidence and justification of belief. To take just a few examples, in his study of the "logic of evidence" Nicolas Rescher offers an account that focusses on the distinction between confirming evidence, "by means of which an hypothesis is established," and supporting evidence "which does not establish the hypothesis, but merely renders it more tenable."² Jaegwon Kim argues that "the concept of evidence is inseparable from that of justification. When we talk of 'evidence' in an epistemological sense we are talking about justification: one thing is 'evidence' for another just in case the first tends to enhance the reasonableness or justification of the second."³ Peter Achinstein's explanation of why it is *desirable to have evidence* is that "one wants one's hypothesis to be true or at least probable, and one wants a reason for believing it" – and he essays a theory of evidence that, he believes, satisfies both desiderata.⁴

It is also worth noting that , in the American systems of evidence at least, the kind of evidence that is admissible (that is, evidence that is permitted to be presented to a

¹ Sam Harris, **The End of Faith** (2004), pages **.

² Nicholas Rescher, "A Theory of Evidence," **Philosophy of Science**, Vol. 25, No. 1. (Jan., 1958), pp. 83-94.

³ Jaegwon Kim, "What is "Naturalized Epistemology?" in James Tomberlin (ed.) *Philosophical Perspectives 2, Epistemology*, Atascadero, CA: Ridgeview Publishing Co: 381–405.

⁴ Peter Achinstein, "Concepts of Evidence." **Mind**, New Series, Vol. 87, No. 345 (Jan., 1978), pp. 22-45.

factfinder in litigation) is also specified under rules (the rule for so-called "relevancy") that make actual support a necessary condition of admissibility. For example, in effect – using the definitional pattern above – Federal Rule of evidence 401 defines 'relevant evidence' as follows:

Evidence "ε" is logically relevant to hypothesis "h" if and only if ε has any tendency to make h more probable or less probable than h would be without ε.⁵

This basic definition of *logical relevance* (as it is called in in American evidence doctrine) is also not far from the widely influential and general Bayesian conception of evidence, which Achinstein tidily summarizes – again, using the format introduced above:

fact e is evidence that hypothesis h is true if and only if e increases h's probability over its prior probability.⁶

Against various *actual support* conceptions of evidence, I here offer an asserted support conception, and it is now well to offer my definition, to be followed by the framework of Logocratic theory that I believe supports it.

Logocratic conception of evidence as argument: Evidence is any factual proposition (including but not limited to factual propositions regarding some action, event, object, mental state, or proposition) that a person does or can assert as the basis for inferring a proposition about some action, event, object, mental state, or proposition (including, in principle, the same action, event, object, mental state or proposition – that is, something can in principle be evidence for itself).

According to this conception of evidence, for example, if some person does or could infer a proposition about some action, event, object, mental state, or proposition – such as the existence of a supreme being – from fact of testimonial evidence of some sort in Bible or the Koran or the Torah or the Bhagavad Gita, then Bible or the Koran or the Torah or the Bhagavad Gita are evidence for that proposition. Not, I hasten to add, necessary *good* evidence in the judgment of some analyst, but evidence nonetheless.

I believe that asserted support conception of evidence reveals the intimate connection between the concept of evidence and the concept of argument. And just as there can be

⁵ The rule itself reads as follows: " Evidence is relevant if: (a) it has any tendency to make a fact more or less probable than it would be without the evidence; and (b) the fact is of consequence in determining the action." In terms of the Logocratic Method yet to be offered, this is a "rule enthymeme" that I "rulify" in the text to this note. I use 'if and only if' to represent the main logical connective in this rule because it seems fair, as a matter of interpretation, to treat the sufficient condition for (logical) relevance as also a necessary condition. See Brewer, "Exemplary Reasoning" **

⁶ Peter Achinstein, **The Book of Evidence** (2001), p. 6 ("for a fact e to be evidence that a hypothesis h is true, it is both necessary and sufficient that e increase h's probability over its prior probability").

arguments that are strong or weak (in precisely defined senses) and still be arguments (an invalid deductive argument is still both deductive and an argument), so evidence can be very weak, and still be evidence. And just as one doesn't build into the concept of an argument that it must be strong, so one need not, and, for conceptual elegance and clarity should not, build *warrant* into the concept of evidence.

As noted above, the explanatory framework in that underwrites this conception of evidence is the Logocratic Method. I now present enough of the structure of this method to help clarify and defend the Logocratic conception of evidence just advanced.

3 The Middle: Basics of the Logocratic Method (Logocratic Abduction)

3.1 The basic term 'Logocratic'

I construct the term 'Logocratic' from the Ancient Greek terms 'λογος' [*logos*] meaning, among other meanings, 'argument', and 'κρατος' [*kratos*] meaning, among other things, 'strength' (Compare the word 'democracy', the "strength of the *demos*.")

3.2 Proposition, Sentence, Argument

An *argument* is comprised of sets of propositions that stand in a particular binary relation. Before I specify this relation further I specify the meaning of 'proposition'. A proposition is an abstract entity to which sentences of natural languages correspond. The abstraction is best understood by noting that the same proposition can appear in different natural languages. When proposition P appears in language 1 as sentence 1 (e.g., English, such as, 'I should only believe in a God that would know how to dance.') and in language 2 as sentence 2 (e.g., German, such as 'Ich würde nur an einen Gott glauben, der zu tanzen verstünde.'), there is a translation of that one proposition into two languages. A sentence is the incarnation of an abstract proposition. Put another way, a sentence is a token of which the corresponding proposition is the type. Of course, we can identify any proposition only as it occurs in some natural language.

Because an argument is composed of propositions it is also an abstract entity, and, as with propositions, one argument can be translated into different languages (for example, 'Man is something that hath to be surpassed: and therefore shalt thou love thy virtues,—for thou wilt succumb by them.' and 'Der Mensch ist Etwas, das überwunden werden muss: und darum sollst du deine Tugenden lieben,—denn du wirst an ihnen zu Grunde gehn' in English and German, respectively), and any given argument must appear in some natural language. We can mark the distinction between arguments, which are composed of propositions, and instantiations of arguments in some natural language, which are composed of sentences, as the difference between argument types and argument tokens, respectively.

As noted, an argument is comprised of sets of propositions that stand in a particular binary relation. One set of propositions of an argument is called *premises*. The other set of propositions is called *conclusions*. We may label the whole set of premise propositions 'E' and label each individual premise $\varepsilon_1, \varepsilon_2, \varepsilon_3, \dots, \varepsilon_n$. We may label the whole set of conclusion propositions 'H' and each individual conclusion $h_1, h_2, h_3, \dots, h_n$. (The use of these premise and conclusion names reflects, and keeps before the Logocratic analyst the idea that, on the evidential conception of logic, premises of arguments are evidence for the conclusion as hypothesis—see the next section.) We may identify the binary relation in an argument between the premises and conclusions (mouthfully) as *is claimed, or can be taken to claim, to provide support for*. That is, an argument is a relation between one set of propositions (premises) that are claimed to provide, or can be taken to claim to provide, support for the other set of propositions (conclusions). We can describe the type of support that the set of premises E *is claimed, or can be taken to claim, to provide support for* the set of conclusions H in two ways. We can say that the premises provide *inferential support* for the conclusion. This means that if the premises are true (or otherwise warranted), they provide support for *inferring the conclusion*. Another way to describe this support is that the premises provide *epistemic support* for the conclusion. This means that if the premises are *believed*, they provide support for *believing* the conclusion.

3.3 *Logical form (mode of logical inference): the definition*

All arguments have what I call a *logical form* or (stipulatively synonymously) a *mode of logical inference*. I endorse an *evidential* conception of logic, according to which logic is the study of the *evidential relation* between the premises and conclusions of arguments.⁷ Building on the evidential conception of logic, I conceive of an argument's premises as providing evidence for its conclusions, and I define an argument's *mode of logical inference (logical form)* as the *evidential relation* between the argument's premises and its conclusion. There are exactly four modes of logical inference: deduction, induction, abduction (also, synonymously, inference to the best explanation), and analogy. The premises of a deductive argument provide *deductive evidence* for its conclusion, and likewise for the other three logic forms (*mutatis mutandis*).

3.4 *Arguments and rules in their natural (non-formal) habitats: the enthymeme, rule-enthymemes and argument-enthymemes*

3.4.1 Case to illustrate basics of the Logocratic Method: *Monge vs. Beebe Rubber Company*

In *Monge v. Beebe Rubber Company*,⁸ the Supreme Court of New Hampshire considered plaintiff Olga Monge's contention that she had been fired by the defendant Beebe Rubber Company because she refused to date the factory foreman, and that such a firing was a

⁷ I extend Brian Skyrms, **Choice & Chance** 4 (1966) ("Logic is the study of the strength of the evidential link between the premises and conclusions of arguments.").

⁸ 316 A.2d 549 (New Hampshire, 1974).

breach of contract. According to the statement of facts reported, and apparently accepted, but the court majority in *Monge*:

After working without incident on the conversion machine for about three months, she applied to fill an opening on a press machine at higher wages. She testified that her foreman told her that if she wanted the job she would have to be 'nice'. She got the job at \$2.79 per hour and claims that her foreman then asked her to go out with him, which she refused to do because she was married and had three children. After working on the press machine for about three weeks, the machine was shut down and she was put on a degreaser machine at \$1.99 per hour. Her overtime was taken away, although no one else's was. She testified that when she told her foreman she needed overtime money he told her she could sweep floors. She agreed to do this and claims the foreman also made her clean the washrooms and ridiculed her.⁹

The term 'contract' in the American system of contract law has been defined in a way that usefully focusses us on the overarching issue in this case. According to *Restatement (Second) of Contracts* § 1 (a summary of contracts rules by a committee of respected Contracts jurists), "A contract is a promise or a set of promises for the breach of which the law gives a remedy, or the performance of which the law in some way recognizes as a duty." In the terms of this definition, the issue in this case was whether the defendant company's promise to hire her for certain kinds of work was legally enforceable (whether, that is, "the law" would "give a remedy" or "in some way recognize" the company's promise as a duty to Olga Monge).

The chief hurdle to Olga Monge's contention that she was fired for refusing to date the foreman is that she had been hired for an indefinite period of time, and thus, under a longstanding rule in *Monge's* jurisdiction (the rule exists in many U.S. jurisdictions to this day, though, to my knowledge, it is not an authoritative rule in any European legal system) this fact seems uncontested by the litigants), she was an "employee at will," which in turn meant that she could presumably be fired with or without a justifying cause for firing.¹⁰

⁹ *Monge*, 316 A.2d at 550.

¹⁰ The *Monge* majority opinion states the rule on employment at will as follows: "Plaintiff sued for breach of an employment contract for an indefinite period of time. The employer has long ruled the workplace with an iron hand by reason of the prevailing common-law rule that such a hiring is presumed to be at will and terminable at any time by either party." *Monge*, 316 A.2d at 551. Many jurisdictions that have an employment at will rule like this include in the rule the statement that the rule is a "presumption." This means that, unless there is some evidence, for example, in a written form of the contractual arrangement, a contract for an indefinite period of time is one that either party can terminate, perhaps under some specified conditions, such as notice within a certain time to the opposing party, without the termination constituting a

Olga Monge won this legal contest. Both the trial court, sitting with a jury, and the New Hampshire Supreme Court, agreed with her contentions that she was fired because she refused to date the foreman of the factory *and* that – despite her undisputed status as an employee at will – her firing on this ground constituted a breach of contract that entitled her to damages.

3.4.2 The Logocratic conception of the enthymeme

The concept of the enthymeme has a long history, tracing its most important provenance to Aristotle's lecture notes, published as *The Rhetoric*.¹¹ Aristotle, the great discoverer (inventor) of syllogistic logical form (now represented in the grammar of first-order predicate logic), treats the enthymeme as “a kind of syllogism” (Rhetoric, 1355a¹²), or as a “rhetorical syllogism” (Rhetoric, 1356b¹³). An Aristotelian enthymeme is also “derived from probabilities [eikota] and signs [semeia], so it is necessary that each of these be the same as each [of the truth values mentioned]; . . . for a probability [eikos] is what happens for the most part, not in a simple sense, as some define it, but whatever, among things that can be other than they are, is so related to that in regard to which it is probable as a universal is related to a particular.” (Rhetoric, 1357a-b¹⁴). In addition, for Aristotle, in an enthymeme the “major premises” of these enthymematic syllogisms are often commonly held generalizations. (Rhetoric, 1357a¹⁵). Given the reliance on probabilistic premises that are generalizations from experience in the Aristotelian enthymeme as “rhetorical syllogism,” these would be classed today not as deductive syllogisms but as instances of defeasible modus ponens.¹⁶ It is this aspect of Aristotle's account of the enthymeme that yields the widely-used definition of an enthymeme as: “An argument in which one of the premises is not explicitly stated.”¹⁷

breach of contract. There is no indication of any arrangement between Monge and the defendant company to the effect that she was not an “employee at will. That is, it seems there was no evidence, or anyway, it does not seem that Olga Monge produced any, to rebut the presumption that her indefinite hiring made her an employee at will.

¹¹ A useful translation and guide is Aristotle, *ON RHETORIC, A THEORY OF CIVIC DISCOURSE* (G. Kennedy trans., 2007).

¹² Aristotle, *supra* note 11, at 33.

¹³ Aristotle, *supra* note 11, at 40.

¹⁴ Aristotle, *supra* note 11, at 42.

¹⁵ Aristotle, *supra* note 11, at 41–42 (footnotes omitted).

¹⁶ I discuss the basic concept of defeasible argument *infra*, section 3.7.3.1. There is a rich growing literature on defeasible argument. One very interesting (technical) account is found in Henry Prakken, *Formalising debates about law-making proposals as practical reasoning*, *LOGIC IN THE THEORY AND PRACTICE OF LAWMAKING* 301–21 (M. Araszkievicz & K. Pleszka, K. eds., 2015.) (Legisprudence Library; vol. 2). Hohfeld axioms yield indefeasible deductive arguments.

¹⁷ SIMON BLACKBURN, *THE OXFORD DICTIONARY OF PHILOSOPHY* (2d rev. ed. 2008), s.v. “enthymeme.” See also Doug Walton, *The three bases for the enthymeme: A dialogical theory*, 6 *J. OF APPLIED LOGIC* 361, 362 (2008) (“According to analysis of enthymemes that will be put forward in this paper, an enthymeme is defined as an incomplete argument found in a text of discourse. More precisely, some components of the argument can be found as explicit premises or conclusions stated by its proponent, but some other statements need to be filled in as premises or conclusions before it can be determined precisely what the argument is. In many cases, the missing assumption is a premise. . . . On this definition, an argument has an

This Aristotelian view that an enthymeme is an abbreviated, more easily accessible form of argument is central to the Logocratic development of the concept. The Logocratic conception of the enthymeme relies on the fact that in many contexts of argument, rules and arguments are presented without their logical form being explicit. Logocratic analysis is designed to handle the familiar, if not often recognized or theorized, problem in the logical evaluation of arguments that are composed of sentences and (therefore) encountered in natural languages: such arguments are *enthymematic*. Outside of specialized contexts of argument, such as in the practices in the professions of formal mathematics and logic, arguments are enthymematic. (Even in those professions there is a question whether any argument can every avoid being enthymematic.¹⁸) Arguments offered by judges, lawyers, and other legal analysts are overwhelmingly enthymematic. And when those arguments prominently rely on legal rules, the legal rules are also enthymematic. A fundamental task of a Logocratic analyst is to identify rule-enthymemes and argument-enthymemes, and to "rulify" or "argufy" them (respectively), that is, to give a fair formal representation of the logical structure of the rule or the argument (which, in law, of course, rely centrally on legal rules).

We can be more precise regarding the ontology of rule and argument-enthymemes. Recall that a *sentence* is the incarnation of an abstract *proposition*. Generally, an enthymeme is a *sentence* or a *set of sentences* (the set may have one or more members) whose *logical structure* is not explicit. This is an extension of a traditional concept of "enthymeme," which was predicated only of arguments and was defined as an argument one of whose *sentences* was missing in its natural-language incarnate form, either one of the premises or one or more of the conclusions. Put another way, an enthymeme is a rule or argument whose logical form is not explicit in its original mode of presentation, for example, in a judicial opinion, a lawyer's brief (which contain both argument-enthymemes and rule-enthymemes), a regulation, a statute, or a constitution (which contain rule-enthymemes). Two types of enthymeme are of special concern to the Logocratic Method, *the rule-enthymeme* and the *argument-enthymeme*.

3.4.3 Rule-enthymeme

A *rule-enthymeme* is any rule (a sentence-rule is an incarnation of a proposition-rule; all rules have the logical form of conditional propositions or conditional sentences) whose

explicit set of premises $\{P_1, P_2, \dots, P_n\}$ and an ultimate conclusion, C, that can, along with an implicit set of statements $\{Q_1, Q_2, \dots, Q_n\}$ be added to the explicit set to generate C by a chain of valid inferences.").

¹⁸ Lewis Carroll's delightful essay "What the Tortoise Said to Achilles" may at least point in this direction. See Lewis Carroll, *What the Tortoise Said to Achilles*, 4 MIND 278 (April 1895). So may this perhaps apocryphal tale: While giving a lecture to colleagues demonstrating a proof, a mathematician writes a line of the proof on the board, then writes another line saying, "the reason for this step is obvious." An audience member objected. Flustered, the speaker left the stage and returned several minutes later with several pages of freshly scribbled notes in hand and said, "Yes it *is* obvious."

logical form is not explicit in its original mode of presentation—that is, in its natural language presentation, as in a judge's opinion, lawyer's brief, statute, regulation. An *argument-enthymeme* is any argument (a sentential argument is composed of sentences and is an incarnation of a propositional argument, which is composed of propositions) whose logical form is not explicit in its original mode of presentation, such as in a lawyer's brief or judge's opinion. *Monge* provides illustrations of both types of enthymeme.

3.4.4 Rule-enthymeme in *Monge*

A rule-enthymeme is a sentence (proposition incarnated in a natural language) whose propositional counterpart has a conditional structure and whose logical structure is not explicit from its original presentation in the natural language. Note that all enthymemes occur in natural languages—indeed, it is to capture the metaphysics of enthymemes that the proposition-sentence distinction is particularly useful. In *Monge*, the majority opinion clearly stated the central rule that the majority applied to resolve the dispute:

We hold that a termination by the employer of a contract of employment at will which is motivated by bad faith or malice or based on retaliation is not the best interest of the economic system or the public good and constitutes a breach of the employment contract.¹⁹

3.4.5 Rulification of the rule-enthymeme in *Monge*

"Rulification" is the interpretive process (interpretive abduction) in which the analyst gives a rule-enthymeme a fair formal representation that makes explicit the logical structure of that rule-enthymeme. Criteria for "fairness" in rulification include, chiefly, interpretation in accord with the *charitably judged intent of the rule-enthymeme framer*.²⁰

Because rules have a conditional structure, it's worth making a quick observation about the interpretive options that could face a suitably situated rulifier of a rule-enthymeme. There are many different types of conditional—including material (propositional deductive logic), stochastic, strict, and causal—and a vitally important part of the skill of moving from enthymematic rules to their fair formal representation involves interpretive skill in deciding which conditional best fairly formally represents the rule-enthymeme.

¹⁹ 316 A. 2nd at 551.

²⁰ Donald Davidson's principle of charity in "radical translation," used also by Ronald Dworkin in his theory of "law as interpretation," is too strong. It says that the interpreter tries to *maximize agreement* between interpreter and interpreted subject, when "holding belief fixed and solving for meaning." See Donald Davidson, *Belief and the Basis of Meaning*, 27 SYNTHESE 309, ** (1974), reprinted in D. Davidson **, Rather, suitably charitable interpretation of rule-enthymemes and argument-enthymemes seeks only to give the interpreted subject the benefit of the doubt when there are plausibly several interpretations some of which would *explain* the interpreted text and the framer of the text as more skillful in their mastery of the virtues (or reflection of the mastery of the virtues) of logical structure than would a less charitable interpretation. See also ROBERT NOZICK, *THE NATURE OF RATIONALITY* ** (1993). For the required concept of "virtue" here, see *infra*, **.

As a matter of interpretation (which I consider to be a type of abduction, interpretive abduction²¹), legal rule-enthymemes can often (and the rule-enthymeme in *Monge* can) be fairly formally represented with the material conditional in the deductive system of propositional deductive logic.²² Using a system of representation that allows the Logocratic analyst to represent rules using the basic grammar of propositional logic but without using propositional or logical constants – that is, using only the natural language²³ -- the rulified *Monge* rule is as follows:

If

there is firing by an employer of an employee at will that is motivated by bad faith

or

there is firing by an employer of an employee at will that is motivated by malice

or

there is firing by an employer of an employee at will that is motivated by retaliation

then

the firing is a breach of contract

and

the firing is not in the best interest of the economic system or the public good

This rule-enthymeme articulates three disjointly sufficient criteria, any of which is sufficient (and, under this rule,²⁴ at least one of which is necessary) to warrant the jointly sufficient conclusion. Note that an important interpretation question about how to rulify the *Monge* enthymeme arises regarding what I've represented as the second jointly

²¹ For another approach that correctly regards interpretation as a type of abduction, but then differs from my account in its meta abduction (abduction of the nature of abduction), see** GABBAY AND WOODS, *A PRACTICAL LOGIC OF COGNITIVE SYSTEMS* (2005). In Chapter 9, "Interpretation Abduction," Gabbay and Woods correctly consider enthymeme resolution and principles of charity as components of interpretive abduction, but unlike my account, theirs concludes that text interpretation is not intrinsically abductive although some instances are.

²² The choice to represent a natural language conditional as a material condition, strict conditional, causal conditional, or some other type is also a matter of interpretive abduction, guided by the process of reflective adjustment first articulated by Nelson Goodman: "A rule [of inference] is amended if it yields an inference we are unwilling to accept; an inference is rejected if it violates a rule we are unwilling to amend." NELSON GOODMAN, *FACT, FICTION, AND FORECAST* 62 (4th ed. 1983) Some philosophers have noticed that this is also a model for interpretation. See for example RONALD. DWORKIN, *LAW'S EMPIRE* 90 (1986) ("constructive interpretations" "try to show legal practice as a whole in its best light, to achieve equilibrium between legal practice as they find it and the best justification of that practice."); see also *id.* at 63 n. 17.

²³ Elsewhere I present a full grammar for this system of representation. See Brewer, **. For current purposes and this audience, I think the grammar is sufficiently clear that I may use it without further explanation. Note that Layman Allen is a pioneer in these kinds of representations that to a large extent stay within the resources of natural language. See, for example, **.

necessary condition, namely, 'the firing is not in the best interest of the economic system or the public good'. Did the *Monge* majority intend that to be part of the rule, or (as I suspect), instead part of the rationale for the rule? That issue may have had a surprising effect on a substantial narrowing of the *Monge* rule by a differently constituted panel of the New Hampshire Supreme Court just a few years after *Monge*.²⁵ For our purposes here, however, we need not dwell on that interpretative question, since the first of the jointly necessary conditions ('the firing is a breach of contract') allowed the *Monge* court to rule in Olga Monge's favor.

3.4.6 Argument-enthymeme

The other type of enthymeme that is the focus of Logocratic analysis is the *argument-enthymeme*, which is any argument whose logical form is not explicit in its original mode of presentation (in, for example, a lawyer's brief, a judge's opinion, a scholar's article). In Logocratic analysis, we "argify" the argument-enthymeme. This means that we give a fair formal representation of the sentences of the argument-enthymeme in a way that makes explicit: (i) what are the premises and what are the conclusions of the argument-enthymeme, and (ii) what is the logical form of the argument-enthymeme—deduction, induction, abduction, or analogy. Note that in a very common pattern of legal argument-enthymemes, a rule-enthymeme is used as the "major premise" of the legal argument-enthymeme.

The reference here to "major premises" in legal argument provides an opportunity to address an important issue in the theory of legal argument and to indicate how the Logocratic Method addresses that issue. The term 'major premise' harks from Aristotelian syllogistic logic, now more commonly referred to as first order predicate logic. An important question, not often enough attended to, is what are the criteria of adequacy of different modes of representation of an argument-enthymeme. Argument-enthymemes sometimes admit of "*enthymematic-ambiguity*," in which there is more than one plausible fair formal interpretive representation of the argument-enthymeme as interpretandum. (An "interpretandum" is a "text to be interpreted." The interpretandum in interpretive abduction is also the first premise, the explanandum, the "thing to be explained" by the interpretive abduction). In such cases, the choice among the plausible interpretations is part of the process of interpretive-cum-logical abduction. This question arises both across logical forms and within logical forms. Here is an example of argument-enthymeme-ambiguity across two logical forms, deduction and induction. Should Argument 1 be fairly formally represented as a valid deductive argument or instead as "defeasible modus

²⁵ See *Howard v. Dorr Woolen*, 414 A.2d 1273 (New Hampshire, 1980). This later panel of the New Hampshire Supreme Court may have taken advantage of what looks like a part of the *Monge* rule to effect a substantial narrowing of *Monge*'s rule. See *Howard*, 414 a. 2nd at 1274 ("We construe *Monge* to apply only to a situation where an employee is discharged because he performed an act that public policy would encourage, or refused to do that which public policy would condemn.")

ponens," in which the major premise is itself the conclusion of a previously stated inductive generalization?

Argument 1

ε_1	All men are mortal
ε_2	Socrates is a man
h	Socrates is mortal

We can also use Argument 1 to illustrate argument-enthymeme-ambiguity *within* the logical form of deduction but across two distinct types of deduction. Suppose we chose to represent this argument in the grammar of propositional deductive logic. One representation might assign propositional constants, in the standard manner of propositional deductive logic, as follows:

M	All men are mortal
S	Socrates is a man
T	Socrates is mortal

On this representation we fail to capture what surely we believe is a valid argument (defined as an argument in which, whenever all the premises are true the conclusion must be true), for

M
S
therefore
T

is not a deductively valid argument form. However, there is a workaround for this that gives us the benefits of using the propositional deductive logic grammar²⁶ while also reflecting our intuitive sense that the argument is deductively valid. We may assign these propositional constants:

M:	something is a man
S:	something is mortal

Using them, the argument is

ε_1	$M \supset S$
ε_2	M
h	S

²⁶ Those benefits include a ready way to identify precisely the logical structure of a rule, so as to aid legal abduction in the way I illustrate with the *Knapp* case. Propositional deductive logic is also a decidable system (a formal system in which there is an effective method for determining whether any given well-formed formula is a theorem) and an intuitively accessible visual representation of validity, in the form of truth tables using truth-functional operators.

which is the familiar valid argument *modus ponens*. This workaround succeeds if we keep in mind what we're doing in using such a representation. We judge "behind the scenes," as it were, that it is the individual Socrates that makes premise ε_2 true, although, unlike what we would do were we to use the grammar of predicate logic, we do not explicitly try to represent any individual, including Socrates. A similar kind of "workaround" also can be used to represent legal rule-enthymemes whose ambiguity crosses several types of deductive inference, including propositional and predicate (just illustrated) and deontic.

3.4.7 Argument-enthymeme in *Monge*

In order to "argufy" one of the main arguments in *Monge*, the interpreter must identify and distill the premises and conclusion from among the several sentences not all of which are parts of that argument. That interpretive distillation on the *Monge* majority opinion identifies the following premises and conclusion:

"We hold that a termination by the employer of a contract of employment at will which is motivated by bad faith or malice or based on retaliation is not in the best interest of the economic system or the public good and constitutes a breach of the employment contract."

* * *

"The sole question on appeal is whether there was sufficient evidence to support the jury's finding that defendant, through its agents, acted maliciously in terminating plaintiff's employment. It is the function of the jury to resolve conflicts in the testimony, *Kilfoyle v. Malatesta*, 101 N.H. 473, 475, 147 A.2d 111, 113 (1958); and the law is settled that a jury verdict will not be disturbed on appeal if there is evidence to support it. See *O'Brien v. Public Service Co.*, 95 N.H. 79, 58 A.2d 507 (1948); *Benoit v. Perkins*, 79 N.H. 11, 104 A. 254 (1918)."

"The jury could draw the not-so-subtle inference from the evidence before it that the hostility of defendant's foreman and connivance of the personnel manager resulted in the letter of August 13, 1969, and that that letter was in effect a discharge. See *Colorado Civil Rights Comm'n v. State School Dist. No. 1*, 30 Colo.App. 10, 488 P.2d 83, 86 (1971). The foreman's overtures and the capricious firing at 2:00 a.m., the seeming manipulation of job assignments, and the apparent connivance of the personnel manager in this course of events all support the jury's conclusion that the dismissal was maliciously motivated."

3.4.8 "Argufied" argument-enthymeme in *Monge*

"Argufication" of an argument enthymeme is the counterpart of rulification of a rule enthymeme. To argufy an argument enthymeme is to give it a fair formal representation. Argufication of the argument enthymeme in *Monge*, as identified above, requires us to note the operation of what we might call a "sufficiency of evidence" operator. This is the rule for sufficiency of evidence, pervasive in American law, according to which ε is

sufficient evidence for h if and only if a reasonable fact-finder could conclude that h was true (or otherwise warranted) on the basis of ϵ .²⁷ A rulified version of this rule is:

If there is sufficient evidence that P, then P

This rule, operating along with the premises identified above, allows us to argufy the Monge argument enthymeme (using a representation in natural language only) as follows:

Premise ϵ_1 :

If

there is firing by an employer of an employee at will that is motivated by bad faith

or

there is firing by an employer of an employee at will that is motivated by malice

or

there is firing by an employer of an employee at will that is motivated by retaliation

then

the firing is a breach of contract

and

the firing is not in the best interest of the economic system or the public good

Premise ϵ_2 :

If

there is **sufficient evidence** that a proposition is true

then

that proposition **is true**.

Premise ϵ_3 :

There is sufficient evidence that the firing of Olga Monge was motivated by malice

therefore,

Conclusion h_1 : The firing of Olga Monge was motivated by malice

therefore,

Conclusion h_2 : The firing of Olga Monge was a breach of contract

As represented, this is a valid deductive argument.

²⁷ The *Monge* majority opinion reflects, although it does not explicitly state, this rule: "[T]he law is settled that a jury verdict will not be disturbed on appeal if there is evidence to support it." 316 a. 2nd at 551.

3.5 *From enthymeme to argument: Logocratic Method the Virtues and Vices of Arguments*

One of the most important features of the Logocratic Method is that it takes *virtue* seriously.

3.5.1 **Arguing virtue and vice**

In the Logocratic Method, once the argument-enthymeme has been argued the analyst moves to the next step, which is to assess the *virtues and vices* of the arguments, including strength and weakness as one type of virtue and vice (respectively). There is a counterpart analysis of the virtues and vices of rules as well: the virtue is discernible clarity of logical structure, the vice, a lack thereof. Once we have fairly formally represented an argument-enthymeme, we are in a position to ask a vital question about the argument thus represented. How *good* is it? We can be more precise about what we mean in characterizing an argument as "good" or "bad" by speaking of an argument's *virtues* or *vices*. When we have offered simple and clear definitions of those terms, we can ask, for example, of Justice Lampron's argument for the majority in *Monge*, in what ways does it exhibit virtue, or fail to do so?

3.5.2 **Virtue and the kinds of things that can be virtuous**

The Logocratic Method relies extensively on a conception of virtue, harking back to Aristotle's conception but also departing from it in significant ways. As I use the term, 'virtue' means functional excellence. The basic framework we use is found in Aristotle's conception of arete (Greek: ἀρετή), translated as 'virtue' or 'excellence'.²⁸ If some object *x* is an *F* then the virtue of *x* as an *F* is that characteristic of *x* that makes *x* a good *F*. Put concisely: an object *x*'s virtue reflects its good performance of the function of *F*s. For example, consider an object (*x*) that is a knife (*F*). The virtues of a knife are those features that make it a good knife, such as having an appropriately sharp blade—we say "appropriately," because, as we can see on quick reflection, the virtue of a butter knife differs from that of a steak knife in the degree of sharpness required for functional excellence.

Many and varied kinds things can be "bearers" of virtue, that is, can properly be said to be virtuous (or not). Among this vast array of possibly virtuous (or vicious²⁹) items are implements such as knives, hammers, and spoons; institutions, such as schools,

²⁸ See ARISTOTLE, *NICOMACHEAN ETHICS* (Terence Irwin trans., 1999) (c. 350 B.C.E).

²⁹ From here on, unless otherwise noted, an ascription to an item of virtue should be understood to mean virtue or vice (the latter of which is a failure of virtue). Thus, for example, our discussion of the criteria for virtuous evidentiary argument is also perforce a discussion of the vices of evidentiary arguments. Virtue and vice are best understood as on a spectrum rather than a bivalent, yes-no, state, more virtuous and less vicious, or more vicious and less virtuous.

universities, and the legal institutions that comprise the "rule of law"³⁰; professionals, such as lawyers, doctors, judges, and professors; and arguments, which is the central focus of the Logocratic Method used to generate and evaluate evidentiary arguments. As we will see, there are various kinds of purpose one might have for arguments, and those purposes guide our judgments about what is virtuous, that is, what is functionally excellent in arguments.

The Logocratic Method relies extensively on a conception of virtue, harking back to Aristotle's conception but also departing from it in significant ways. The concept of virtue of an argument (on which supervenes, we might say, the virtue of an arguer: the virtue of an arguer is to master the virtues of argument, both in making and evaluating her own arguments and in evaluating arguments of others). I must emphasize that the sense of virtue that animates the Logocratic Method is not *moral* virtue, such as is familiar to Western culture as inheritor of moral traditions from Aristotle into Christianity into modern moral theories that are, even when secular, still significantly influenced by a dominating Judeo-Christian worldview. Rather, the type of virtue or vice that is central to the Logocratic Method and its theoretical framework is the *amoral* virtue of a knife. A good knife is a knife that is good at serving its purposive function (relative, of course, to the different functions we have for knives—steak knives, butter knives, etc.), and an excellent knife serves its function excellently. And a knife, virtuous or vicious, can be used for moral or immoral purposes. The conception of virtue as *amoral functional excellence* animates and organizes the Logocratic Method, in which the *bearers of virtue* of interest are *arguments* and *arguers*. A central part of my task here is to offer the Logocratic explanation of three distinct purposes that arguers have, and to offer a way to evaluate arguments for their excellences or failures, their strengths or weaknesses, their virtues or vices.

³⁰ Joseph Raz provides a trenchant example of a conception of the *rule of law* as an instrument that has a specific virtue:

Regarding the rule of law as the inherent or specific virtue of law is a result of an instrumental conception of law. The law is not just a fact of life. It is a form of social organization which should be used properly and for the proper ends. It is a tool in the hands of men differing from many others in being versatile and capable of being used for a large variety of proper purposes. As with some other tools, machines, and instruments a thing is not of the kind unless it has at least some ability to perform its function. A knife is not a knife unless it has some ability to cut. The law to be law must be capable of guiding behaviour, however inefficiently. Like other instruments, the law has a specific virtue which is being morally neutral as to the end to which the instrument is put. It is the virtue of efficiency; the virtue of an instrument as an instrument. For the law this virtue is the rule of law. Thus the rule of law is an inherent virtue of the law, but not a moral virtue as such.

JOSEPH RAZ, *The Rule of Law and Its Virtue*, in *THE AUTHORITY OF LAW: ESSAYS ON LAW AND MORALITY* 210, 226 (2d ed. 2009) (emphases added).

3.5.3 Two types of Logocratic Virtue: “mode-independent” and “mode-dependent”—related to four “modes of logical inference”

I identify two types of Logocratic virtue, “mode-independent” and “mode-dependent.” The reference in these phrases to “mode” is to the “mode of logical inference” of an argument.

3.5.4 Mode-dependent Logocratic Virtues: The four modes of logical inference and their characteristic virtues

Recall that, as defined above, an argument’s *mode of logical inference* (or, synonymously, its *logical form*) is *the evidential relation between the argument’s premises*, which we shall find it useful to abbreviate as $\varepsilon_1, \varepsilon_2, \varepsilon_3 \dots$ and its *conclusion*, which we have abbreviated (and will continued shall abbreviate) h_1 (or $h_2, h_3, h_4 \dots$ if there is more than one conclusion). Recall also that, on my account, there are four fundamental, irreducible modes of logical inference. They are distinguished from one another by the relation that obtains between the premises of the argument and its conclusion when the argument yields the most warranted inference (that is, “internally strong,” as defined below) from premises to conclusion that it is logically capable of yielding.³¹ All four modes of logical inference are found in legal argument in general, in evidentiary legal arguments in particular, and indeed in arguments in every domain of argument. A clear understanding of the mode-specific virtues of an argument, that is, the characteristic virtues of a deductive, inductive, analogical, or abductive argument, is essential to the Logocratic Method as a type of philosophical abduction (explanation of the nature of argument) and to its application to assess the strengths or weaknesses of a particular argument.

Mindful of the scope of this essay, I will summarize only very briefly the characteristic virtues of the four modes of logical inference. Using Monge to illustrate each of the modes, I outline the basic structures of these arguments in a way that is sufficient to make clear my Logocratic account of evidence as argument.

3.5.5 Deduction and Its Mode-Dependent Virtue

In a *valid* deductive argument, it is logically impossible that the premises should all be true while the conclusion is false. That is, the truth of the premises of a valid deductive argument provides *incorrigible evidence* for the truth of its conclusion. Validity is what we will call the *characteristic virtue* of a deductive argument. The characteristic virtue of a type of argument is that property or set of properties of that type of argument the possession of which make it the best exemplar of that type. The characteristic virtue of a deductive argument is validity. Some arguments are deductive but lack this virtue—they are invalid—and in that way, they are vicious. There are of course many different grammars for deductive logic, including propositional, predicate (unary, as in the

³¹ We might say that the criteria of identity of each logical form is an ideal—something like a Platonic “Form”. What distinguishes deductive, inductive, analogical, and inference to the best explanation arguments from each other are the *ideal forms* of those arguments.

Aristotelian syllogism, n-ary with $n > 1$, modal in propositional and predicate forms, deontic, which builds on modal grammar and is useful for representing Hohfeld relations, action, and many others. As we have seen above (section **), a central argument in *Monge* may be fairly formally represented ("argufied") using a grammar of propositional deductive logic (suitably gerrymandered to account for the deontic-seeming nature of legal argument).

As noted above, *Monge* arguably illustrates one very important type of legal reasoning, inductive specification. But it is well here to offer a more extended account of the way in which Logocratic analysis explains and illuminates reasoning about facts. I present this analysis by anchoring it in a case in which an American court applied a rule of evidence, and, perforce, the fact-finding took place under the aegis of rules of evidence in the context of litigation. Suitably generalized, however, the Logocratic Method explains and illuminates empirical fact-finding in any domain, including that of empirical science and "everyday life."

3.5.6 Using *Knapp v. State* to illustrate Logocratic Analysis of Induction, Inference to the Best Explanation, and the "evidentiary enthymeme"³²

Knapp v. State,³³ is a deeply illuminating common law case from the Supreme Court of Indiana. I use *Knapp* to present and explain basic features of the Logocratic Method that are of perhaps greatest and most immediate use to the evidence analyst, including the idea the basic patterns of induction and inference to the best explanation, my central claim in this essay that *evidence is argument*, and a special type of enthymeme that is of interest to the analyst of reasoning concerning empirical facts.

In *Knapp*, the defendant Knapp had been convicted of first-degree murder for killing a local marshal. In the portion of the opinion that interests us, the court considers the defendant's claim that it was an error for the trial judge to have admitted testimony by one of the prosecution's witnesses, because the testimony was not *logically relevant* (under the state version of the rules for logical relevance—compare Fed.R.Evid. 401).

3.5.7 The Basic Patterns of Inductive Inference and Its Mode-Dependent Virtue

In an *inductive* argument, the truth of the premises cannot guarantee the truth of the conclusion, but when they are well chosen, their truth can warrant belief in the truth of the conclusion to some degree of probability. There are two main varieties of inductive inference: inductive generalization and inductive specification. The *Knapp* case exemplifies both. Here is the core of the *Knapp* court's argument that is of interest to us here:

³² I adapt material on these topics from one of the chapters (Chapter 1) for which I bore central responsibility in **Weinstein, Abrams, Brewer, Medwed, Evidence Cases and Materials** (10th ed 2017).

³³ *Knapp v. State*, 79 N.E. 1076 (Ind. 1907).

As said by Wharton: “Relevancy is that which conduces to the proof of a pertinent hypothesis.” 1 Wharton, Ev. § 20. In [Stevenson v. Stuart, 11 Pa. 307](#), it was said: “The competency of a collateral fact to be used as the basis of legitimate argument is not to be determined by the conclusiveness of the inferences it may afford in reference to the litigated fact. It is enough if these may tend in a slight degree to elucidate the inquiry, or to assist, though remotely, to a determination probably founded in truth.” . . .

We are of opinion that the testimony referred to was competent. While appellant's counsel are correct in their assertion that the question was whether appellant had heard a story to the effect that the deceased had offered serious violence to the old man, yet it does not follow that the testimony complained of did not tend to negative the claim of appellant as to what he had heard. One of the first principles of human nature is the impulse to speak the truth. “This principle,” says Dr. Reid, whom Professor Greenleaf quotes at length in his work on Evidence (volume 1, § 7n), “has a powerful operation, even in the greatest liars; for where they lie once they speak truth 100 times.” Truth speaking preponderating, it follows that to show that there was no basis in fact for the statement appellant claims to have heard had a tendency to make it less probable that his testimony on this point was true. Indeed, since this court has not, in cases where self-defense is asserted as a justification for homicide, confined the evidence concerning the deceased to character evidence, we do not perceive how, without the possibility of a gross perversion of right, the state could be denied the opportunity to meet in the manner indicated the evidence of the defendant as to what he had heard, where he, cunningly perhaps, denies that he can remember who gave him the information. The fact proved by the state tended to discredit appellant, since it showed that somewhere between the fact and the testimony there was a person who was not a truth speaker, and, appellant being unable to point to his informant, it must at least be said that the testimony complained of had a tendency to render his claim as to what he had heard less probable.³⁴

3.5.7.1 INDUCTIVE GENERALIZATION

Inductive generalization involves generalizing from particular instances. The premises of this type of argument report features of the particulars, and its conclusion states a probabilistic generalization that is inferred from those particulars. I offer two examples to illustrate the form of inductive generalization. One is the *Knapp* judge's analysis of logical relevance in the case he was deciding, the other is a simplified example from empirical science (induction is one of the foundations of all empirical scientific reasoning).

³⁴ *Knapp v. State*, 79 N.E. at 1077.

Where	$\alpha_1 \dots \alpha_n$	stands for a set of individual instances
	φ	stands for one property that the individuals $\alpha_1 \dots \alpha_n$ have been noted to possess
	θ	stands for another property the individuals $\alpha_1 \dots \alpha_n$ have been noted to possess

the pattern of inductive generalization is:

- (ε_1) α_1 is both φ and θ (i.e., has both characteristics, φ and θ)
[e.g., Person A made a factual assertion and Person A spoke truly.]
[e.g., Bird A was a swan and Bird A was white.]
- (ε_2) α_2 is both φ and θ
[e.g., Person B made a factual assertion and Person B spoke truly.]
[e.g., Bird B was a swan and Bird B was white.]
- (ε_3) α_3 is both φ and θ
[e.g., Person C made a factual assertion and Person C spoke truly.]
[e.g., Bird C was a swan and Bird C was white.]
- ...
- (ε_n) α_n is both φ and θ
[e.g., Person N made a factual assertion and Person N spoke truly.]
[e.g., Bird N was a swan and Bird N was white.]
- (ε_{n+1}) There were [few or no] observed instances of an α that was φ and was not θ
[e.g., There were few persons who made a factual assertion and did not speak truly—*Knapp*: “even in the greatest liars . . . where they lie once they speak truth 100 times.”]

[e.g., No swans were observed to be non-white.]

Therefore h: [Probably] [**All or Most**] φ 's are θ

[e.g., *Knapp*: Probably, **most** persons who make factual assertions are persons who speak truly.]

[e.g., Probably, **all** swans are white.]

Note that, like all arguments, inductive arguments are arguments consisting of evidence (premises of the argument) and hypotheses (the conclusion of the argument) that the evidence is said to support. Thus, the premises of an inductive argument are evidentiary propositions (the “ ε_i ” in our Logocratic ε -h schema) and the conclusion is a hypothesis that the evidence is offered to support (the “ h_i ” in the Logocratic ε -h schema).

3.5.7.2 INDUCTIVE SPECIFICATION

The other type of inductive inference is *inductive specification*. Instead of reaching a conclusion about a class of individuals, an inductive specification offers a conclusion about one individual, based on a generalization about the classes to which that individual belongs. Again, we illustrate the form of this argument by reference to the two examples offered above.

In the *Knapp* example, the inductive specification is the argument that in the set of all persons—even including that set “the greatest liars”—who made factual assertions, a great many persons spoke truly the vast majority of the time (*Knapp* endorses the claim that the ratio is 100 to 1!); therefore, some individual person D who made a factual assertion (or perhaps the next individual person who will make a factual assertion) is also likely to have spoken truly (or likely will speak truly).

In the swan example, the inductive specification is the argument that a great many (actually, in this example, all) swans were white; therefore, some individual swan was white (or perhaps the next observed individual swan will be white).

Note that inductive specifications are a basic form of argument for making *predictions* based on empirical evidence—predictions, for example, about the next person we encounter who will make a factual assertion, or the color of the next swan we will see. It is in part for this reason that inductive arguments are so fundamentally a part of arguments in empirical science.

The abstract form of an inductive specification argument is this:

(ε_1 through ε_n) α_1 through α_n have all been both φ and θ (i.e., has both characteristics, φ and θ)

[e.g., Person A through Person N all made a factual assertion and spoke truly.]

[e.g., Bird A through Bird N all were swans and white.]

(ε_{n+1}) There were [few or no] observed instances of an α that was φ and was not θ

[e.g., There were few persons who made a factual assertion and did not speak truly.]

[e.g., No swans were observed to be non-white.]

Therefore h: Some individual α_{n+1} [probably] has both φ and θ .

[e.g., Some person (perhaps some person we encounter in the future) who makes a factual assertion probably spoke (or probably will speak) truly.]

[e.g., Some bird (perhaps some bird we encounter in the future) who is a swan probably is white.]

3.5.7.3 THE MODE-DEPENDENT VIRTUES OF INDUCTIVE GENERALIZATIONS AND INDUCTIVE SPECIFICATIONS

Note that the premises of inductive arguments (both generalizations and specifications) cannot provide support for the conclusion that is as strong as the support that the premises of a valid deductive argument provide for its conclusion. Even when all the premises of an inductive generalization are true, and even if the number of such premises is vast, the premises cannot guarantee the truth of the conclusion. Put another way, unlike in a valid deductive argument, it is conceivable that all the premises are true and that the conclusion is false. (In fact, until black swans were discovered in Australia, it had been believed that all swans were white.³⁵)

To assess the virtues or vices of inductive inference, that is, in order to assess the strength of the inferential or epistemic warrant that the premises of an inductive inference provide for the conclusion, one must assess the premises or conclusion according to several criteria. Note that the criteria for virtuous inductive specifications are logically dependent on those for virtuous inductive generalizations, since the specification is an application of the generalization to a specific instance. Many useful articulations of the criteria for a virtuous inductive generalization have been offered, including, for example, this, set of guidelines from a writer on formal and informal argument:

Guidelines for Evaluating Inductive Generalizations

1. Try to determine what the sample is and what the population is. If it is not stated what the population is, make an inference as to what population is intended, relying on the context for cues.
2. Note the size of the sample. If the sample is lower than 50, then, unless the population is extremely uniform or itself very small, the argument is weak.
3. Reflect on the variability of the population with regard to the trait or property, *x*, that the argument is about. If the population is not known to be reasonably uniform with regard to *x*, the sample should be large enough to reflect the variety in the population.
4. Reflect on how the sample has been selected. Is there any likely source of bias in the selection process? If so, the argument is inductively weak.
5. For most purposes, samples based on volunteers, college students, or persons of a single gender, race, or social class are not representative.

³⁵ See Frederick Schauer, *Profiles, Probabilities, and Stereotypes* 8 (2006).

6. Taking the previous considerations into account, try to evaluate the representativeness of the sample. If you can give good reasons to believe that it is representative of the population, the argument is inductively strong. Otherwise, the argument is weak.³⁶

In his similar list, another such writer makes one crucially important addition:

[T]here must be an adequate explanatory relation among the identified characteristics in the premises.³⁷

This is not an exhaustive list of the criteria of inductive vice and virtue. Unlike the theory of other modes of inference (especially, indeed perhaps only, deduction), logicians and epistemologists do not agree on an exclusive and exhaustive set of criteria.

3.5.8 Inference to the Best Explanation: Structure and Mode-Dependent Virtue

3.5.8.1 THE TERMINOLOGY AND IDEA OF INFERENCE TO AN EXPLANATION

The term ‘abduction’ was introduced into the theory of argument by the American philosopher Charles Sanders Peirce. Philosopher Gilbert Harman rebranded the reasoning process Peirce called ‘abduction’ to ‘inference to the best explanation’, and since that time, philosophers, logicians, and other students of the theory of argument have used both terms. In this presentation we shall use the terms interchangeably, and define below precisely what we refer to with these two labels. A successful meta-abduction—*inference to the best explanation of inference to the best explanation*—must have or rely on some cogent conception of the speech-act of explanation. Reasoners offer explanations that take different forms. They sometimes explain *why* something is what it is, sometimes

³⁶ Trudy Govier, *A Practical Study of Argument* 265 (7th ed. 2014).

³⁷ See Steven Barker, *The Elements of Logic* 187 (5th ed. 1994). Barker’s whole list of criteria for a strong induction is:

1. a sufficient number of observed instances in the premises
2. a proper degree of shared characteristics among the identified characteristics in the premises
3. a proper degree of unshared characteristics among the identified characteristics
4. the logical strength of the conclusion (“all,” “some,” “probably,” “very likely” etc.)
5. the explanatory relations among the identified characteristics in the premises

The final criterion is important because of what Nelson Goodman called the “grue” problem, which we can explain concisely as follows (but using an example different from Goodman’s more complex one). In the inductive generalization above to the conclusion ‘all swans are white’, the premises are observations based on experience. *Experientially*, each premise is of an item that is OBSERVED AND SWAN AND WHITE. When we make the inductive generalization, we generalize over the properties of swans and whiteness, to get ‘all swans are white’, but we do not, and should not, generalize over observed and swan, to get ‘all swans are observed’. Why not? A deep part of the reason, to which Goodman and Barker both point, is that we believe that there is an explanatory relation between bird species and bird color, but not between bird species and being observed.

explain *how* something is what it is, by virtue of what, what genealogy it has, and sometimes explain *what* something is.

According to the Logocratic account of abduction, explanations are always offered from and according to the criteria of a *point of view*. One might be said literally to have a point of view, that is, to occupy some position in space that gives one a particular visual vantage. On the forest floor, one might see only trees; from a point atop a mountain, one might see the forest and not only the trees; from a bird's-eye view (say, from an airplane), one might see the shape of a lake; from an astronaut's-eye view, the shape of the earth.

Expertise provides another type of point of view. An expert witness might tell a jury or judge what the facts are from the point of view of a biologist, a chemist, a ballisticsian, a psychiatrist, and so on. One might also identify an institutional or social point of view, the point of view of a particular type of actor in an institutional or other social setting—the points of view, for example, of a legislator, a judge, a lawyer, a citizen, a president, a “bad man,” a parent, a child, a professor, a student.

One might also identify an “enterprise” conception of point of view, and indeed the enterprise conception is, we suggest, the common thread that runs through all the notions of point of view mentioned above, both the more ordinary and the more reflectively philosophical. This point of view might even be understood as the point of view of an enterprise, an enterprise in which particular methods of analysis are chosen both to produce factual judgments and to serve specified cognitive goals. Examples of such enterprises include: systems of legal reasoning (the “legal point of view”); systems of moral reasoning (on a cognitivist account of morality, at least, this yields the “moral point of view”); philosophical reasoning (the “philosophical point of view”); systems of reasoning in support of business objectives (the “business point of view”); the “military point of view”; the “economic point of view”; “the religious point of view”. . . and so on for many other enterprises.

In each use of point of view noted above, the concept of point of view is invoked to justify some claim, either a claim about what we ought to believe (a theoretical claim) or how we ought to act (a practical claim). Note that simply identifying the general point of view of an enterprise does not by itself answer the following question: What are the specific aims of the enterprise for abductive reasoners who recognize themselves as pursuing the same generic enterprise, but who often disagree about what are the proper specific aims of the enterprise? Such disagreements are a principal source (but not the only source) of the difference among theories within an enterprise. It is, for example, a source of disagreement among legal theorists who march under such banners as “Legal Positivism,” “Natural Law,” “Legal Realism,” and “Critical Legal Studies.”

The enterprise conception of point of view, properly supplemented by Laudan's axiological model, can serve to explicate the concept of the "point of view" in its different philosophical uses.³⁸ Generalized from the particular intellectual domain of science, Larry Laudan's axiological model of scientific explanation greatly helps us to explicate the role of viewpoint on the enterprise conception, both in explanation generally and in abduction specifically. The enterprise conception of a point of view posits that an intellectual enterprise that produces distinctive justificatory claims may be dissected into three separate components: factual judgments, the distinctive methods that the enterprise uses to generate those factual judgments, and the distinctive cognitive aims that the methods are chosen to advance and serve. One invokes a point of view to justify some claim. To serve this justificatory function, the point of view is assumed to be a reliable method of achieving the (explicit or implicit) aims of some rational enterprise. The enterprise conception of point of view, supplemented with Laudan's axiological model, allows us to offer an identity criterion for an individual point of view:

The point of view of enterprise E consists of the factual judgments, produced by the methodological rules adopted to serve the axiological goals of E.

According to this criterion, there are a great many logical species of abduction. The list of these types is long, likely, in principle, unending. We here identify some of the domains of abduction that are of particular interest for Logocratic analysis of law—*legal* abduction, *moral* abduction, *logical* abduction, *interpretive* abduction, and *philosophical* abduction (including metaphysical).

3.5.8.2 THE CHARACTERISTIC VIRTUES OF IBE-ABDUCTION

An account of the characteristic virtues of abduction closely tracks the enterprise conception of point of view as elaborated with the help of Laudan's axiological model. A virtuous abduction accurately deploys methods to issue the judgments that are characteristic of that point of view, in turn choosing methods that do a good job of serving the axiological aims. Because the contexts and domains of abductive argument vary so widely, it is not possible to say much that is specific about the virtues of an abductive argument apart from this. However, a deep research project is involved by practitioners of abduction in their respective fields concerning the elements of their respective points of view. They perforce consider and argue about (albeit not usually in these terms) what are, and what should be the axiological goals, methods chosen to serve those goals, and what are the judgments that issue from application of those methods. As Laudan's model makes clear, disagreement among abductive reasoners is possible

³⁸ See generally, L. Laudan, *Science and Values* (1984).

regarding any of the three-part judgment-method-goal triads that comprise a point of view. What is the legal point of view?, What should be the legal point of view? (what are or should be its judgments, methods, and aims)? are questions that occupy much of jurisprudence. However, even among jurisprudential theories as opposed as Legal Positivism and Natural Law, it is clear that legal abduction consists to a very large extent in explanation of whether the criteria of rules are satisfied—even if rules do not (as they cannot) provide a complete explanation of legal outcomes, whether in evidence or in other legal domains.

3.5.8.3 THE FORMAL STRUCTURE OF IBE-ABDUCTION

Inference to the best explanation involves, as its name suggests, inference to an explanation of some fact or set of facts. In this argument, a statement of the phenomenon (or phenomena) to be explained and the putative explanation both appear as premises of the argument and the explanation itself is the argument's conclusion. The fundamental pattern of inference to the best explanation consists in four basic steps, three premises (represented as ' ϵ_1 ', ' ϵ_2 ', ' ϵ_3 ') and a conclusion (represented as ' h '): The generic pattern of inference to the best explanation has this structure:

Premise ϵ_1 : The statement of the phenomenon to be explained, called the *explanandum*.

Premise ϵ_2 : The statement of one or more sets of propositions that could *plausibly* explain the phenomenon to be explained. (One or more "plausible explanation" conditionals Φ_n , of the form, "If Φ_i were true or otherwise warranted in this case, that would explain the explanandum.")

Premise ϵ_3 : The statement asserting, of those propositions or sets of propositions that could plausibly explain the phenomenon (identified and stated in premise ϵ_2), that proposition or set of propositions is the *best* explanation—*as measured by the interests and purposes of the arguer*.³⁹ It is perhaps intuitively

³⁹ A good deal more can be said with precision about the nature of the point of view and its role in IBE. See the discussion in Brewer, "Scientific Expert Testimony and Intellectual Due Process," 107 *YALE L.J.* 1535, 1568–79 (1998). Here an intuitive example may suffice. Suppose one country, which is a signatory to several international treaties, contemplates invading another country. One can evaluate the advisability of that action from several distinct points of view, each point of view being comprised of distinctive kinds of judgments, methods for producing those judgments, and aims served by those methods. The distinct points of view that can be taken in this question of advisability of invasion may cohere and agree one with another, but also may well not. It might be advisable (or ill-advised) from a military point of view, or from a legal point of view, or from a moral point of view. See also R. GIÈRE, *SCIENTIFIC PERSPECTIVISM* 13–15 and *passim* (2006). A competition among points of view about the invasion of the Ancient Island of Melos by the Athenians is trenchantly explored by the ancient historian Thucydides. See

clear that, in inference to the best legal explanation, the interests and purposes of the plaintiff or prosecutor compete with the interests and purposes of the defendant, and thus, in an adversary system, they offer competing legal explanations of events and transactions; one, for example, that the transactions amounted to breach of contract, the other, that they did not. The same dynamic pertains to inferences to the best explanation that are made under the aegis of rules of evidence, the proponent arguing that the proffered evidence is best explained, from a legal point of view, as admissible, the opponent arguing that the proffered evidence is best explained, from a legal point of view, as (for example) hearsay and not admissible. The question of the point of view a judge has, or should have, when offering her own inference to the best legal explanation, is a deep jurisprudential question.

Conclusion h: The statement that this best-among-the-plausible explanations is the explanation the arguer endorses.

3.5.8.4 OF SPECIAL INTEREST TO LEGAL ANALYSTS: INFERENCE TO THE BEST LEGAL EXPLANATION

IBE is extremely common, nay, ubiquitous in legal analysis, including analysis under rules of evidence. Every time a legal analyst explains a set of facts from a legal point of view—e.g., are the facts of this transaction best explained as contract, or as tort, or as the crime of murder; or is the proffered evidence logically relevant, or conditionally relevant, or hearsay, or character evidence—that analyst uses the argument pattern of inference to the best *legal* explanation. And when the factfinder (judge alone, or judge plus jury) finds those facts that are material to a substantive law claim, the factfinder uses inference to the best *legal-factual explanation*.⁴⁰

THUCYDIDES, HISTORY OF THE PELOPONNESIAN WAR BOOK 5 § 89 (Benjamin Jowett trans., 1883) (Athenian envoys to Melian representatives, “[I]nto the discussion of human affairs the question of justice only enters where the pressure of necessity is equal, and that the powerful exact what they can, and the weak grant what they must.”).

⁴⁰ Different domains have different methods for assessing facts more precisely. There are, among many others, legal facts, logical facts, physics facts, biological facts, and possibly moral facts (which can be explained whether one is a moral realist or a moral relativist). This understanding of facts is given sustained theoretical defense in N. Goodman, **Ways of Worldmaking** (1978) (see especially Chapter VI “The Fabrication of Facts”). By the phrase ‘legal facts’ we refer to what evidence jurists sometimes call a “material fact” or “operative fact.” It is especially important to distinguish domains of factual claims because the methods for establishing putative facts are distinctive in those distinctive domains. Our brief discussion of inference to the best explanation will help to explain this point. An example in one well known case reveals that what is “in fact” a “chicken” for the purposes of a contract may well differ from what a chicken is for the purposes of ornithology. See the well-known case of *Frigalment Importing Co. v. B.N.S. International Sales Corp.*, 190 F. Supp. 116 (Friendly, J.), a dispute about the meaning of “chicken” in a contract putatively for that commodity. Among the many definitions canvassed by one of the parties’ witnesses, is “Chicken is everything except a goose, a duck, and a turkey. Everything is a chicken, but then you have to say, you have to specify which category you want or that you are talking about.”

As we will see again with analogical arguments, there are ways in which one mode of logical inference can play a role *within* another, and inference to the best legal explanation is one such instance. At some point in an inference to the best legal explanation, the Logocratic analyst seeks to explain the facts of a given case (or hypothetical) by determining what legal rules *might* apply to the fact pattern, and then determining the outcome of the application of the rule to the fact pattern. One of the most likely successful representations of the application of rules to potential facts is as a possible deductive argument.⁴¹

Another way we may understand the role of deduction within inference to the best legal explanation is that the analyst *explains the fact pattern from a legal point of view*.⁴² Thus, for example, when Justice Gillett in *Knapp* reasoned his way to the best legal explanation of the prosecutor's proffer of the doctor's testimony about how the old man in question died, he used an application of the rule for logical relevance to offer a *deductive* argument to determine that this proffered evidence was logically relevant. In so doing he used his application of the deductively applicable rule for logical relevance to conclude that, because the requirements of the rule were in fact satisfied by the facts of the case before him ('satisfied' here means that there was sufficient evidence for the fact, under the appropriate burden of persuasion), the best explanation of the proffer of evidence by the prosecutor is that the proffer was, from a legal point of view, logically relevant. In effect, that is, the justice reasoned that, because the requirements of the rule of logical relevance (*evidence is relevant if and only if evidence conduces to the proof of a pertinent hypothesis*) were satisfied, an argument from that rule would be the best explanation of the prosecutor's proffer of evidence.

We can also present the role of deduction within legal abduction using *Knapp* as illustration in a more formal way, using the formal IBE pattern we have just identified. In *Knapp* the proposition to be explained from a legal point of view is the prosecutor's proffer of evidence ϵ_1 offered to support the hypothesis h_1 , and h_1 , in turn, serves as an evidentiary proposition ϵ_2 offered to support the h_2 (the "ultimate issue" in the case—note that there is a chain of arguments, from ϵ_1 to h_1 which then in turn serves as premise ϵ_2 to h_2). Note also that the explanandum, the item to be explained in *Knapp*, and as is typical of inferences to the best legal explanations in reasoning with evidence rules, is *an evidentiary-enthymeme*. In *Knapp* Justice Gillett's task was to explain *from a legal point of view* the prosecutor's proffer of ϵ_1 offered to prove h_2 .

⁴¹ This is because the role of reasoning with rules in legal abduction is so often best represented as deductive reasoning, see the discussion in Brewer, Exemplary Reasoning, *infra* note 14, at 999–1003.

⁴² For extensive analysis of the concept of "point of view" and its role in inference to the best explanation, see Brewer, "Scientific Expert Testimony and Intellectual Due Process," 107 *Yale L.J.* 1535, 156–81 (1998).

[Abstract form of IBE-Premise ε_1]

Premise ε_1 Statement of proposition to be explained in IBE, the “explanandum,” abbreviated “ Θ ”

[IBE Premise ε_1 in example of *Knapp*]

Premise ε_1 the prosecutor proffers an evidentiary-enthymeme, seeking to have evidence ε_1 admitted, in order to prove h_1 and then from there to prove h_2 . This proffer calls for the trial judge to explain the proffer from a legal point of view—is ε_1 offered for h_1 (logically) relevant or not (or does it fit some other definition of admissibility/excludability, such as hearsay, character, privilege, etc.)

evidentiary enthymeme proposition ε_1

The prosecutor’s proffer of testimony by the doctor that the old man, whom defendant claimed to have heard died of a beating at the hands of the decedent, died of natural causes and not from a beating

evidentiary enthymeme proposition h_1/ε_2

Defendant **did not act in** self-defense fearing for his life

evidentiary enthymeme proposition h_2

Defendant committed first-degree murder

[Abstract form of IBE-Premise ε_2]

Premise ε_2 Statement of a proposition Φ_1 such that, if Φ_1 were true, Φ_1 would be a plausible explanation of the explanandum Θ

[IBE Premise ε_2 in example of *Knapp*]

Plausible-explanation proposition Φ_1

If the prosecutor’s evidence ε_1 proffered to support h_1 was *logically relevant* (‘logically relevant’ is our contemporary term) to h_1 , *that would plausibly explain this evidence from a legal point of view.*

[Comment: this is a statement of a proposition that Justice Gillett thinks could plausibly explain the explanandum (which, recall, is the

prosecutor's evidentiary-enthymeme). In *Knapp* Justice Gillett discusses only one proposition that he thinks is a plausible explanation of the prosecutor's proffer, namely, that the prosecutor's evidence ε_1 proffered to support h_1 was *logically relevant*. In order to determine whether this explanation is the best explanation, Justice Gillett must see whether the criteria of the rule for logical relevance are satisfied on the facts before him. This is where deduction plays a role *within* inference to the best legal explanation.]

[Abstract form of Premise ε_3 of inference to the best legal explanation:]

Premise ε_3 Statement of a proposition Φ_i such that, Φ_i is the best explanation of all the plausible explanations of explanandum Θ

[IBE Premise ε_3 in example of *Knapp*]

That the prosecutor's evidence ε_1 proffered to support h_1 *was* logically relevant to h_1 is the best explanation of all the plausible explanations of the explanandum (the prosecutor's proffer of doctor's testimony offered to address defendant's self-defense claim), by virtue of this valid *deductive* argument:

Premise ε_1 evidence is relevant **if and only if** evidence conduces to the proof of a pertinent hypothesis

Premise ε_2 the prosecutor's evidence conduces to proof of a pertinent hypothesis

Conclusion h the prosecutor's evidence is relevant

[Comment: Justice Gillett did determine that the prosecutor's proffer did meet the requirement of the rule for logical relevance. Justice Gillett offers this deductive argument as part of his resolution of the case by admitting the prosecutor's proffered evidence. What we've now added to our understanding is that his deductive argument was an important step within his inference to the best legal explanation.]

Note that some IBE inferences can fairly be represented as having as much force as valid deductive inferences. Consider, for example, how one can explain how it is that a pawn in chess can appear on the same column as a pawn on the same "team" (color). The answer, that one pawn on that team "captured" an opposing piece, or that the move was *en*

passant, is an application of deductively applicable rules of chess. Other IBE explanations have only as much force as the inductive specifications on which they rely. Thus, in some IBEs the premises provide incorrigible evidence for the truth of their conclusions (as in the chess explanation, and when IBE is used, as it indeed is, in mathematical and logical reasoning), and sometimes only probabilistic warrant (probability less than 1). Whether inferences to the best *legal* explanation, in which legal rules play such an important role (as we just observed), also have the force of deductively applicable rules is a nice and important jurisprudential question.⁴³

3.5.9 Analogical argument and Its Mode-Dependent Virtues

Analogical argument is a centerpiece of reasoning from precedent, a dominant mode of reasoning in Anglo-American law.⁴⁴ Very often judges and lawyers argue that a precedent case is (or is not) relevantly similar to a case under consideration in some particular ways that are of interest to the reasoner. Analogical arguments also appear in arguments made in the course of evidence litigation. Sometimes these are arguments from precedent, as in common law evidentiary reasoning, but sometimes analogical arguments are used for other purposes, including when a statutory, regulatory, or constitutional provision is the principal source of law.

Analogical arguments always involve a comparison of two or more selected items -- it can be many more than two -- "target" items, on the one hand, and "source" items, on the other. Reconstructing any enthymematic argument, including analogical arguments, requires a *fair interpretation* of the text in which the argument is presented (judicial decision, lawyer's brief). Analogical arguments always involve picking out what are judged to be *relevant* characteristics of those selected items. Some of the relevant characteristics are known to be shared ("shared characteristics"), some of them are not known, at the start of the argument, to be shared, but one *infers* that they are shared ("inferred characteristics"). The basic pattern of analogical argument is always this: on the basis of some shared relevant characteristics, one infers that the "target" item has an additional characteristic that the source item is known to have.

In order to have rational cogency, arguments by analogy operate by *discovering in a process of abduction* ("inference to the best analogical explanation" or "analogical abduction" – I return to this point below, see section 3.5.9.3), articulating, and then applying a *rule* that links the presence of the shared characteristic to the inferred characteristic (the "analogy-warranting rule.") Thus there is always an implicit rule guiding the inference to inferred characteristics from relevant shared characteristics --

⁴³ For a discussion of relevant considerations on this issue, see Brewer, "On the Possibility of Necessity in Legal Argument: A Dilemma for Holmes and Dewey," 34 *John Marshall L. Rev.* 9 (2000).

this is the "analogy-warranting rule." There must also always be a justification of this rule (an "analogy-warranting rationale") if the analogy is to be successful – that is, a virtuous instance of analogical argument. The rule can be deductively applicable, when the analogical arguer is committed to it as a true universal generalization, or it can be applicable by defeasible modus ponens, when the rationale relies in inductive generalizations. Note that in the argument template offered below, two possible patterns are offered for the analogy warranting rule; what the actual rule (and thus what the logical structure of the rule) is in a given analogical argument depends, of course, on the particular argument.

3.5.9.1 STRUCTURE OF ANALOGICAL ARGUMENT:

- (1) $x_1, x_2, x_3 \dots$ have F, G, H, . . . [sources and shared characteristic]
- (2) y has F, G, H, . . . [target and shared characteristic]
- (3) x_1, x_2, x_3 also have N [inferred characteristic]
- (4) analogy warranting rule:
 - one option: Anything that has F, G, H also has N
 this deductively structured analogy warranting rule allows
 deductive modus ponens
 - another option: Some things that have F, G, H also have N [AW rule]
 this inductively structured analogy warranting rule allows
 defeasible modus **ponens**
- (5) Therefore, y has N [conclusion: target has inferred characteristic]

3.5.9.2 ILLUSTRATION OF ANALOGICAL ARGUMENT IN *MONGE*

The *Monge* case offers a tidy and illuminating example of an argument enthymeme that is fairly, formally represented as an analogical argument. The argument enthymeme appears thus:

Plaintiff sued for breach of an employment contract for an indefinite period of time. The employer has long ruled the workplace with an iron hand by reason of the prevailing common-law rule that such a hiring is presumed to be at will and terminable at any time by either party. . . . When asked to reexamine the long-standing common-law rule of property based on an ancient feudal system which fostered in a tenancy at will a relationship heavily weighted in favor of the landlord, this court did not hesitate to modify that rule to conform to modern circumstances. *Kline v. Burns*, 111 N.H. 87. . . ; *Sargent v. Ross*, 113 N.H. (1973).

The law governing the relations between employer and employee has similarly evolved over the years to reflect changing legal, social and economic conditions. In this area '(w)e are in the midst of a period in which the pot boils the hardest and in the process of change the fastest.' . . . Although many of these changes have resulted from the activity and influence of labor unions, the courts cannot ignore the new climate prevailing generally in the relationship of employer and employee.⁴⁵

In what we might call the ontology of analogy, here are the elements of Justice Lampron's analogical argument:

Items compared, "source" for the analogy, and target

- x: source cases, involving landlords-tenants
- y: target case, involving at-will employee Olga Monge

Shared characteristic:⁴⁶

- F: was a case in which a "long-standing common law rule" is heavily weighted to give one party substantial power over another

Inferred characteristic

- G: the common law rule may be modified to "conform to modern circumstances," to "reflect changing legal, economic, and social conditions"

Argument:

- (1) x has F
- (2) y has F
- (3) x also has G
- (4) ?? All things that have F have G
[deductive commitment in the analogy-warranting rule?]

?? Some things that have F have G

[inductive commitment in the analogy warranting rule?]

Therefore,

- (5) z is G

Analogy-warranting rationale? A fully virtuous argument by analogy—one that has all of the characteristic virtues of an argument by analogy—also has either an explicit or fairly easily discernible *analogy-warranting rationale*, which offers a justification for the analogical arguer's endorsement of the analogy-warranting rule. Specifically, this

⁴⁵ *Monge*, 316 A.2d at 551.

⁴⁶ In representing analogical arguments the grammar of first-order predicate logic is most useful.

justification is an explanation of why one may infer the presence of the inferred characteristic of the analogy from the presence of the shared characteristic.⁴⁷ In *Monge*, Justice Lampron offers no easily discernible analogy-warranting rationale for his analogy-warranting rule, and in this respect the analogical argument does not have all the virtues one seeks and finds in a fully virtuous analogical argument. Moreover, were what seems to be his analogical warranting rule given general application – as a precedent from a supreme court would be presumed to license – the rule would make a great deal of existing law unstable, since so very many rules of law are longstanding and heavily weighted to give one party substantial power over another. We would be surprised to find a the supreme court of New Hampshire being willing to accept this level of instability. Perhaps the *Monge* court was insufficiently attentive to the consequences of the analogy it seemed to be endorsing.

3.5.9.3 THE SPECIFIC PATTERN OF INFERENCE TO THE BEST ANALOGICAL EXPLANATION

Inference to the best *analogical* explanation shares the four-step pattern of the more general inference to the best explanation, but it is tailored to the specific task of enabling the reasoner (the justices in the *Monge* example), to *explain the pattern of relevant similarities (or differences)* between the source of the analogy (the precedent case involving landlords and tenant in *Monge*) and the target (the case involving Olga Monge). In a distinct step within analogical argument, the reasoner must fashion a *rule* that *plausibly* links the possession of some shared characteristic(s) to the possession of the inferred characteristic, and in that way explain the pattern of relevant similarity (or difference). Recall from the discussion of inference to the best explanation (section 3.5.83.5.8) the structure of IBE:

- Premise ε_1 : The statement of the phenomenon to be explained (the “explanandum”) is the *target* of the analogy, about which some question is present for the analogical arguer. .
- Premise ε_2 : A statement of one or more sets of propositions that could *plausibly* explain the phenomenon to be explained. This amounts to identifying whatever number of plausible analogy warranting rules the analogical reasoner thinks might explain the pattern of similarity and difference.

In inference to the best *analogical* explanation, the reasoner’s task is to *explain the pattern of relevant similarity (or difference, for reasoning by disanalogy) between the source(s) and target* of the analogical (or disanalogical) inference. To perform this task, the analogical reasoner *explains* to himself what the relevant characteristic is by

constructing a *rule* in which some shared characteristic is antecedent and the additional characteristic is consequent. The analogical reasoner, the in *Monge*, Justice Lampron, may fashion more than one plausible hypothesis in the second step of his inference to the best analogical explanation, and *each hypothesis takes the form of an analogy-warranting rule that might provide the warrant for the inference from possession of the shared characteristic to possession of the inferred characteristic.*

One plausible (in Justice Lampron's view) analogy-warranting rule in *Monge*:

Plausible hypothesis:

If it is the case that

if a legal rule has the shared characteristic is a longstanding rule that is heavily weighted to give one party substantial power over another then that rule has the inferred characteristic is may be changed to conform to modern circumstances

then that would plausibly explain the pattern of relevant similarity between the landlord tenant case precedent (source for the analogy) and the Olga Monge's case (target for the analogy).

In *Monge*, Justice Lampron seems not to have considered any other analogy warranting rule that he considered to be plausible, but often in analogical reasoning there are several that are plausible, and part of the task of analogical abduction (inference to the best analogical explanation) is to select from among those that are plausible, which is the best explanation (from the reasoner's point of view).

In every analogical; an indefinite number of other characteristics, also shared by the source and target, are *not* plausible bases for the explanation of the pattern of relevant similarity and difference. This fact about analogical arguments makes the step within analogical argument of analogical abduction crucial to the rational cogency of analogical argument. In *Monge*, for example, the following are not plausible identifications of the shared characteristics that would license the inference of the inferred characteristic ("may be changed to conform to modern circumstances"):

Shared Characteristic₁: applies to human persons

This would yield the analogy-warranting rule: "If it is the case that if a legal rule has the shared characteristic *applies human persons*, then that legal rule has the inferred characteristic *is may be changed to conform to*

modern circumstances”—the same pattern pertains to the analogy-warranting rule that would result from each of the additional shared characteristics listed below, and none of them seems plausible as explanations of the pattern of similarity and difference.

Shared Characteristic₂: governs objects that have bodies

Shared Characteristic₃: governs objects that can be counted

Shared Characteristic₄: governs objects that can be represented in three-dimensional space

Premise ε_3 : The statement asserting, of those propositions or sets of propositions that could plausibly explain the phenomenon (identified and stated in premise ε_2), that proposition or set of propositions is the *best* explanation—as measured by the interests and purposes of the arguer. In *Monge*, as we've noted, Justice Lampron settled on the this plausible explanation (so he regarded it) as the *best* explanation of the pattern of similarity between the source case of landlord-tenant law and target case of *Olga Monge*:

Conclusion of Justice Lampron's analogical abduction:

If it is the case that

if a legal rule has the shared characteristic is a longstanding rule that is heavily weighted to give one party substantial power over another then that rule has the inferred characteristic is may be changed to conform to modern circumstances.

then that would *best* explain the pattern of relevant similarity between the landlord tenant case precedent (source for the analogy) and the *Olga Monge's* case (target for the analogy).

3.5.9.4 MODE-DEPENDENT VIRTUES OF ANALOGICAL ARGUMENTS

What are the characteristic virtues of an analogical argument, the features that make such an argument as strong as an analogical argument can be? The main criterion of virtue comes from powerful work done by philosopher Paul Grice, who showed that the communicative exchanges operate under a powerful presumption, namely, that speakers and authors behave in accord with a cooperative principle: “Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged.”⁴⁸ Argument, including analogical argument, is a type of communicative exchange to which

⁴⁸ Grice, "Logic and Conversation," in 3 *Syntax and Semantics: Speech Acts* 46 (P. Cole and J. L. Morgan eds., 1975).

both authors-speakers and readers-listeners apply the interpretive presumption that the author-speaker is obeying the cooperative principle. Specifically for analogical argument this means that fully virtuous analogical (and disanalogical) arguments communicate sufficiently clearly what are the: sources, targets, shared characteristics (analogy), unshared characteristics (disanalogy), analogy-warranting rule, and disanalogy-warranting rule. No less important is a vital additional virtue for analogical and disanalogical arguments: that there is a cogent and compelling analogy- or disanalogy-warranting rationale, appropriate for either deductively warranting contexts or inductively warranting contexts.⁴⁹

3.6 *Logocratic Analysis of Reasoning about Empirical Fact-finding*

3.6.1 What exactly is evidence?

The proponent of an item of evidence is the person proffering the evidence and seeking to have it admitted for consideration by the fact-finder. The opponent of an item of evidence is the person seeking to exclude the opposing party's proffered evidence from consideration by the fact-finder. In *Knapp* the prosecutor was the proponent and defendant Knapp was the opponent. The disputed item of evidence was testimonial evidence by a physician regarding how an old man (who apparently had been identified in the trial proceedings) had died. The prosecutor proffered this testimony in the context of defendant Knapp's argument for self-defense, in which the defendant claimed that he had heard—from whom, he could not say—that his victim (the marshal whom he had shot and killed) had beaten this old man to death. The prosecutor sought to have the physician testify that the old man had died from senility and alcoholism and that there were no bruises or marks on his person when he died. The evidence was deemed relevant, and admissible, by the trial judge, and that ruling was on appeal in the *Knapp* case.

So one disputed item of evidence in *Knapp* was testimonial evidence by the prosecution witness. But what exactly is evidence? As a philosopher might put this question, what is the *ontology* of evidence—what kind of entity is it? Is it a *thing*, an object like a knife or a fingerprint or a blood sample or a bloody glove? Is it an *action*, such as running away from the scene of a crime (see, e.g., *Allen v. United States*, 164 U.S. 492, 499 (1896) (flight by the accused is competent evidence having a tendency to establish guilt))? Is it all of these, none of these? Here we can learn from *Knapp*. Consider this passage from the opinion:

⁴⁹ The distinction between deductively warranting contexts or inductively warranting contexts is discussed in Brewer, *Exemplary Reasoning*, supra note **, at 983–1017.

The state was permitted, on rebuttal, to prove by a physician, over the objection and exception of the defense, that the old man died of senility and alcoholism, and that there were no bruises or marks on his person. Counsel for appellant contend that it was error to admit this testimony.

Clearly the prosecutor sought to use the physician's testimony as evidence. How is it that the physician's testimony could be *evidence* at all? What might *Knapp* teach us as we seek to answer this question?

When evidence enters the process of *reasoning*—it is *propositional* and *argumental*. The *Knapp* prosecutor calls the physician as a witness to provide testimonial evidence that is in a condensed form of *argument*. We can fairly represent this argument, in the abbreviated form in which it likely occurs to the prosecutor and judge, as follows:

evidentiary proposition ε :	<i>the physician testified that the old man died of senility and alcoholism and that there were no bruises or marks on his person when he died</i>
hypothesis h:	the old man died of senility and alcoholism and there were no bruises or marks on his person when he died

The prosecutor claimed (in effect) that the evidentiary proposition ε *provides a good reason for the factfinder to infer* that the conclusion, hypothesis h, is true (or sufficiently likely to be true to be believed). This simple example illustrates something deep and important about the concept of evidence itself, namely, *evidence is argument*. Thus we may frame the argument conception of evidence.

3.6.1.1 ARGUMENT, AND THE ARGUMENT CONCEPTION OF EVIDENCE

Two basic claims comprise the argument conception of evidence. First, all argument consists of sets of propositions that stand in a particular relation. Second, all evidence is argument.

Let's consider the first claim. In explaining the concept of "relevancy" in evidence law jurist George F. James, says:

Relevancy, as the word itself indicates, is not an inherent characteristic of any item of evidence but exists as a relation between an item of evidence and a proposition sought to be proved.⁵⁰

⁵⁰ James, "Probability and the Law," 29 *Cal. L. Rev.* 689 (1941).

Following James (and slightly adapting his point for our purposes), we will find it useful to speak about evidence as a *relation* between two kinds of propositions:

(i) an *evidentiary proposition*, which we will label ‘ ϵ_i ’ (the subscript ‘i’ indicates some number in a series, because not infrequently more than one item of evidence will be at issue in evidence litigation)

and

(ii) a *hypothesis proposition* (‘hypothesis’ for short) for which evidentiary propositions are offered, which we will label ‘ h_i ’

In order to make arguments about evidence we must, as it were, *convert objects and events into propositions*. Thus, one might say:

(1) “The knife found at the scene of the crime that had the defendant’s fingerprints on it is evidence that the defendant stabbed the victim.”

Proposition (1) suggests that there is a *relation* between an *object* (the knife with the defendant’s fingerprints on it) and a *proposition* (the defendant stabbed the victim), namely, that the *object* is related to the *proposition* by being evidence for the truth of the proposition. James, in the quotation above, speaks this way. There’s nothing wrong with that way of speaking. But when judges and lawyers claim that some object (e.g., a knife with fingerprints) or an action or event (e.g., a person’s running away when police come to his house) is evidence for some proposition (the person whose fingerprints were on the knife committed the stabbing; the person who ran from the police was guilty of the crime whose culprit the police were seeking), those judges and lawyers are actually “propositionalizing” the object or action or event. That is, they are claiming that *the fact that* the knife found at the scene of the crime had the defendant’s fingerprints on it is evidence for the hypothesis that the defendant committed the stabbing. And *facts* are propositions.

Thus, we would represent proposition (1), in our Logocratic framework, as

ϵ_1 The knife found at the scene of the crime had the defendant’s fingerprints on it

h_1 The defendant committed the crime

In *Knapp*, the contested item of evidence was testimony. The prosecutor offered the testimony of the doctor (evidentiary proposition ϵ_1) as evidence that what the doctor stated (hypothesis h_1) was true.

Let’s now bring in a definition of the term ‘argument’ that can help us deepen our observation that evidence is argumental. An argument is a *relation* between two sets of propositions. One set is called ‘premises’. We may label the whole set of premise

propositions ‘E’ and we may label each individual premise $\varepsilon_1, \varepsilon_2, \varepsilon_3, \dots \varepsilon_n$. The other set is called ‘conclusions’. We may label the whole set of conclusion propositions ‘H’, and we may label each individual conclusion $h_1, h_2, h_3, \dots h_n$. The relation that the premise-set E stands in toward the conclusion-set H is the relation *is offered to, or can be taken to, provide warrant for*. We can describe the type of support that premises are offered to provide for conclusions in two ways. One is that the premises provide *inferential support* for the conclusion. Here we say that if the premises are true (or otherwise warranted), they provide support for *inferring the conclusion*. Another way to describe this support is that the premises provide *epistemic support* for the conclusion. Here we say that if the premises are *believed*, they provide support for *believing* the conclusion.

There is thus a deep conceptual connection between the concept of evidence and the concept of argument. There is what we may call a chiasmic relation⁵¹ between evidence and argument: just as all evidence involves argument, so also all argument involves evidence. For logic itself is the study of the different modes of logical inference that different kinds of arguments display, and an argument’s *mode of logical inference* (or, synonymously, its *logical form*) is *the evidential relation between the argument’s premises and its conclusion*.⁵²

Let’s use *Knapp* to illustrate this relation of evidence and logic. One of Justice Gillett’s arguments may be fairly represented as an application of the rule for logical relevance (in a style not uncommon for common law writing of the time, the Justice presents a few different versions of the rule for relevance, of which this is one; compare Fed.R.Evid. 401⁵³):

- ε_1 “Relevancy is that which conduces to the proof of a pertinent hypothesis.”
 ε_2 Testimony by prosecution witness physician “conduces to the proof of a pertinent hypothesis”
 therefore

⁵¹ Chiasmus is a trope with the pattern

A	B
B	A

as in the quip, “In every generation there are both more neurons and new morons.” If one connects with a straight line the A term (phoneme “mor-”) with the B term (phoneme “new”) the result is an “X” shape, Greek letter Chi, hence “chiasmus,” “X-ness.”

⁵² See also B. Skyrms, **Choice & Chance** 4 (1966) (“Logic is the study of the strength of the evidential link between the premises and conclusions of arguments.”).

⁵³ That rule (rule enthymeme) reads:

Evidence is relevant if:

- (a) it has any tendency to make a fact more or less probable than it would be without the evidence;
 and
 (b) the fact is of consequence in determining the action.

h: Testimony by prosecution witness physician is relevant.

In the Logocratic Method we label the premises of an argument with ‘ $\varepsilon_1, \varepsilon_2, \dots \varepsilon_n$ ’ precisely to let the symbol ‘ ε ’ mark the fact that *the premises of any argument are evidence for the conclusion of the argument*. Why? Because, as we have defined ‘argument’, the premises of an argument provide inferential (or epistemic) support for the conclusion. If one believes that premises ε_1 and ε_2 are true (or otherwise warranted), then one has good reason to infer (or to believe) the conclusion h is true (or otherwise warranted) as well.

3.6.1.2 ENTHYMEME OF SPECIAL IMPORTANCE FOR EVIDENCE ANALYSTS: EVIDENTIARY ENTHYMEMES AND UNDERLYING EVIDENTIAL CLAIMS

As I’ve noted, Logocratic analysis is designed to handle the familiar problem in the evaluation of non-formal legal arguments they are most often *enthymematic*. And recall that an enthymeme is a *sentence* (including rules) or a *set of sentences* (the set may have one or more members) whose *logical structure* is not *explicit*. More specifically, we may say that an *enthymeme* is any rule or argument whose logical form is not explicit in its “natural habitat”—that is, in its original mode of presentation, for example, in a judicial opinion, a lawyer’s brief, a regulation, or a statute. I have illustrated both rule and argument enthymemes in the *Monge* case, and will not repeat that kind of analysis here, for *Knapp* – though that case does provide an additional clarifying example.⁵⁴

What I do think it useful here to explicate – and this is, I hope, value-added over my earlier discussion of rule and argument enthymemes using the *Monge* case – is an enthymeme, and reasoning therewith, that operates pervasively in empirical fact-finding. And here again *Knapp* provides a clear example.

One special type of argument-enthymeme is worth special treatment, because it has been found to be of great value for analysts of fact-finding reason who use the Logocratic Method. It is called the *evidentiary enthymeme*. I introduce this concept by observing that reasoners with evidence (whether legal doctrinal evidence or evidence in one of the innumerable other domains in which reasoning with evidence occurs) very often single out one item of “evidence” (and use that term) that is offered for and claimed to be linked to one specified hypothesis. Thus, reasoners with evidence might speak and reason about cloudy skies as evidence that it is likely to rain, about a statement in a newspaper as evidence for the truth of one or more propositions in the newspaper (this is a type of testimony), about the evidence of smoke as an indication of fire, about the evidence of a frown on a friend’s face as evidence of the friend’s disapproval or unhappiness. The

⁵⁴ See the discussion of rule and argument enthymemes in *Knapp* in **Weinstein, Abrams, Brewer, Medwed, Evidence Cases and Materials** (10th ed 2017), pp. **.

reasons for this selective focus in evidentiary claims are likely related to the context in which an evidentiary judgment is made and reported.⁵⁵

As these examples indicate, we seem to tend to frame evidence as a relation between two individual propositions, one evidentiary proposition ('it is cloudy out') and one hypothesis proposition ('it is likely to rain'). It is not inaccurate to frame evidence this way, but it is importantly incomplete. And we can explain the incompleteness by asking - - as we did of the *Knapp* prosecutor's testimonial evidence -- what do we think actually constitutes the *evidence* for the hypothesis in these and other instances of evidence and hypothesis?

The answer is twofold. First, we believe that the first proposition ('it is cloudy out') stands in the relation *is evidence for* the second proposition ('it is likely to rain'). But we have also observed that this relation "is evidence for" is a relation of *argument*, since an argument is defined as a premise set and a conclusion set such that the former stands in the relation *is offered to provide support for* to the latter.

Here is another way to think about the examples just presented. Each of these pairs of propositions is an *argument*, which we might represent in this way:

	Argument 1
premise $\epsilon 1$	the sky is cloudy
[therefore]	
conclusion $h 1$	it will (or might) rain
	Argument 2
premise $\epsilon 2$	the newspaper states P [some proposition]

⁵⁵ Computer scientist John R. Josephson argues for a claim that is closely related to the one we offer in the text:

When we conclude that data D is explained by hypothesis H, we say more than just that H is a cause of D in the case at hand. We conclude that among all the vast causal ancestry of D we will assign responsibility to H. Commonly, our reasons for focusing on H are pragmatic and connected rather directly with goals of producing, preventing, or repairing D. We blame the heart attack on the blood clot in the coronary artery or on the high-fat diet, depending on our interests. We can blame the disease on the invading organism, on the weakened immune system that permitted the invasion, or on the wound that provided the route of entry into the body. I suggest that it comes down to this: the things that will satisfy us as accounting for D will depend on what we are trying to account for about D, and why we are interested in accounting for it; but the only things that count as candidates are plausible parts of the causal ancestry of D according to a desired type of causation.

John R. Josephson, "Smart Inductive Generalizations are Abductions," in **Abduction and Induction Essays on their Relation and Integration** (P. Flach and A. Kakas eds., 2000) (emphases added).

[therefore]

conclusion h2

P is true

Argument 3premise ε_3

there is smoke

[therefore]

conclusion h3

somewhere in the vicinity of
the smoke, there is fire**Argument 4**premise ε_4

my friend is frowning

[therefore]

conclusion h4

my friend disapproves [or is
unhappy, etc.]

Each of these pairs is what we may call an *underlying evidential claim*, and we have represented four such claims:

Underlying evidential claim that corresponds to Argument 1

The fact that the sky is cloudy is evidence that it will (or might) rain

Underlying evidential claim that corresponds to Argument 2

The fact that the newspaper states P is evidence that P is true

Underlying evidential claim that corresponds to Argument 3

The fact that there is smoke is evidence that somewhere in the vicinity of the smoke, there is fire

Underlying evidential claim that corresponds to Argument 4

The fact that my friend is frowning is evidence that my friend disapproves [or is unhappy, etc.]

As suggested above, we tend to frame statements about evidence in these relatively simple individual underlying evidential propositions, which are themselves, we may now observe, *a type of enthymeme*. More specifically, they are *argument-enthymemes*. This brings us to our second main point. What makes these *argument-enthymemes*, and not complete arguments, is that we usually judge that the evidentiary proposition (ε_1 , ε_2 , ε_3 , ε_4 in the examples above) *is evidence for the hypothesis* (h_1 , h_2 , h_3 , h_4 in the examples above, respectively) by virtue of additional propositions we have not explicitly stated, but which operate in the background of our reasoning (or, if we are not the proponents of the evidence, which the proponent of the evidence invites us to supply). Thus, in each of the four simple evidentiary enthymemes above, something like the following additional premises will very likely operate in the reasoning that is used or invited by the proponent

of the evidence to help make the simpler evidentiary proposition provide evidential, argumental support for the conclusion.

Argument 1—argument-enthymeme “argufied” by supplying likely unstated but assumed premise, labeled here “ ϵ_0 ”

ϵ_0 cloudiness is (likely) a sign of rain

ϵ_1 the sky is cloudy

h_1 it is likely to rain

Argument 2—argument-enthymeme “argufied” by supplying likely unstated but assumed premise, labeled here “ ϵ_0 ”

ϵ_0 articles in this newspaper [or perhaps, articles by this reporter] are reliable

ϵ_2 the newspaper states P [some proposition]

h_2 P is likely true

Argument 3—argument-enthymeme “argufied” by supplying likely unstated but assumed premise, labeled here “ ϵ_0 ”

ϵ_0 smoke is a sign of fire in the vicinity of the smoke

ϵ_3 there is smoke

h_3 somewhere in the vicinity of the smoke, there is fire

Argument 4—argument-enthymeme “argufied” by supplying likely unstated but assumed premise, labeled here “ ϵ_0 ”

ϵ_0 a frown is a sign of disapproval [or unhappiness, etc.]

ϵ_4 my friend is frowning

h_4 my friend likely disapproves [or is unhappy, etc.]

It is hard to overstate the ubiquity of the operation of unstated premises in our informal reasonings about evidence, whether we ourselves are the proponents of evidence and are the ones who frame an evidentiary claim, or we are instead evaluators of evidential claims made by proponents other than ourselves, in which case we are invited to supply the unstated premises. Indeed, we may frame a proposition central to the Logocratic analysis of evidentiary claims and evidentiary arguments: *Every assertion that some evidentiary propositions $\epsilon_1 \dots \epsilon_n$ support some hypotheses propositions $h_1 \dots h_n$ relies on argument, either explicit (this is non-enthymematic evidence) or implicit (this is enthymematic evidence).*

Consider some additional examples of evidentiary enthymemes and the assumed or invited unstated propositions that operate to enable the explicit evidentiary proposition to provide evidential, argumental support for the hypothesis:

Solomonic evidentiary wisdom⁵⁶

- ϵ_0 [Only?] the natural mother of a baby would refuse to sacrifice the baby's life instead of giving up possession of the baby
- ϵ_1 woman A chooses not to have baby cut in two in a custody battle
- h woman A is the natural mother

Union Paint and Varnish Co. v. Dean, 137 A. 469 (R.I. 1927)⁵⁷

- ϵ_0 paint cans of the same brand, bought from the same store six months earlier, will likely have the same qualities of fitness
- ϵ_1 paint can A, bought six months earlier from the store, had defective paint
- h₁ paint can B (unopened), bought six months later, from the same store, had defective paint

Morgan's Love Letter

- ϵ_0 A person who loves the wife of another man has some motive to kill the other man⁵⁸
- ϵ_1 X wrote Y's wife a love letter
- h₁ X killed Y

Sherrod v. Berry, 856 F. 2d 802 (7th Cir. 1988)

- ϵ_{0-1} A person who suddenly reaches into his coat while sitting in his car with two policemen pointing guns at the car is likely to have a weapon in his coat
- ϵ_{0-2} A person who has no weapon is unlikely to reach suddenly into his coat while sitting in his car with two policemen pointing guns at the car
- ϵ_1 The search of the deceased (shot by the officer while the deceased was in the deceased's car) revealed that he had no weapon
- h₁ The officer "acted reasonably in the circumstances," namely, in self-defense

3.7 Mode-independent Logocratic Virtues

We have examined briefly the mode-dependent virtues of logical forms, those virtues that are specifically characteristic of deduction, of induction, of analogy, and of abduction. There are also Logocratic virtues that are *independent* of the logical form. These are virtues of arguments that apply to all arguments, including, of course, evidential arguments, regardless of their logical form. These virtues of arguments are, more

⁵⁶ See **Old Testament**, 1 Kings 3:16–28. For an interesting assessment of this evidentiary enthymeme, see LaRue, "Solomon's Judgment: a Short Essay on Proof," 3 **Law, Probability and Risk** 13 (2004).

⁵⁷ This example is discussed in James, "Relevancy, Probability and the Law," 29 **Cal. L. Rev.** 689, 692 (1941).

⁵⁸ This example is from is from E. Morgan, **Basic Problems of Evidence** 185–88 (1961). Morgan himself represents the argued evidentiary enthymeme into a more complex series of linked arguments. See discussion in Brewer, "Logocratic Method and the Analysis of Arguments in Evidence," 10 **Law, Probability and Risk**, 175, 198–201 (2011).

specifically, types of *strength* (virtue) or *weakness* (vice): strength (or weakness) understood as *instrumental efficacy for achieving one or another (or some combination) of three goals or purpose*. We refer to these three types of mode-independent strength (or weakness) as *internal*, *dialectical*, and *rhetorical*.

3.7.1 Internal (also can be referred to as, "inferential" or "epistemic") strength or weakness

One logical-form independent goal-purpose for argument is to use argument to infer conclusions from premises in such a way that the argument is *internally strong*, in the sense that *if* the premises of the argument are true, then they provide strong support for the conclusion of the argument. (Or, we could equally well say, if the premises are the argument are believed, they provide strong support for believing the conclusion of the argument; this is what we mean by the phrase 'epistemic strength'. And we could also equally well say, if the premises are the argument are true, they provide strong support for *inferring* the conclusion of the argument; this is what we mean by the phrase 'inferential strength'.)

For example, in the argument below, we can assess the "inferential strength" or the "epistemic strength" or the "internal strength" that the two premises ε_1 and ε_2 provide for the conclusion h.

ε_1	All men are mortal.
ε_2	Socrates is a man.
	therefore
h	Socrates is mortal.

This is a type of argument—which we have identified above as a *valid deductive argument*—in which the internal (inferential, epistemic) is as strong as possible. Put another way, in this argument, whenever all the premises (ε_1 and ε_2) are true, it is not conceivable that the conclusion (h) is false. (Try to confirm this for yourself.) There cannot be any stronger warrant than the internal warrant (or "inferential warrant"—the inferential support that the premises provide for the conclusion, or "epistemic warrant"—the extent to which one should *believe* the conclusion if one also believes the premises) that these premises of this argument—and this type of argument (valid deductive argument) provide for its conclusion. Internal (inferential, epistemic) strength is only one of three important measures of an argument's strength or weakness. Another is *dialectical* strength (or weakness).

3.7.2 Dialectical (also can be referred to as "external") strength or weakness

A *dialectic* of arguments is a *competition* among arguments. Recognizing that dialectical strength (or weakness) is a type of strength (or weakness) distinct from internal (inferential or epistemic) strength allows us to make further distinctions among dialectical competitions of arguments. There can be:

(i) **external competition among arguers**, as for example in litigation, when there is competition of prosecutor or plaintiff against a defendant, or when, on a multi-judge panel, there is competition of majority and dissenting judges.

(ii) **internal competition within an arguer**, as for example when a judge or lawyer debates the pros and cons of a legal argument (or when a philosopher does likewise with philosophical arguments—compare Socrates in Plato's dialogue *the Apology*: "[T]he greatest good of man is daily to converse about virtue and all that concerning which you hear me *examining myself and others*, and . . . the life which is unexamined is not worth living." (38A) (emphasis added)).

(iii) **formal competition of arguments (and arguers)**, guided by formal rules, as for example in litigation (*rules of evidence and procedure may be very usefully understood as rules that guide the formal competition of litigants' and judges' arguments*) or in various scholastic debate competitions.

(iv) **informal competition of arguments (and arguers)**, guided by informal rules, as for example in philosopher Socrates's debates with his interlocutors in the Socratic "elenchos" (Ancient Greek term for cross-examination).

3.7.3 Rhetorical strength or weakness

The third measure of strength (or weakness) of an argument is its *rhetorical* strength (or weakness). In Part 2 of his treatise RHETORIC, Aristotle defines 'rhetoric' as follows:

Rhetoric may be defined as the faculty of observing in any given case the available means of persuasion. This is not a function of any other art. Every other art can instructor persuade about its own particular subject-matter; for instance, medicine about what is healthy and unhealthy, geometry about the properties of magnitudes, arithmetic about numbers, and the same is true of the other arts and sciences. But rhetoric we look upon as the power of observing the means of persuasion on almost any subject presented to us; and that is why we say that, in its technical character, it is not concerned with any special or definite class of subjects.⁵⁹

In accord with this definition, we may say that rhetoric is the attempt by a source rhetor to persuade a target audience to accept a proposition or set of propositions. Legal arguers, including judges, lawyers, and law students (as well as arguers in many other settings) seek not only to offer arguments that are internally strong and dialectically strong (strong

⁵⁹ ARISTOTLE, RHETORIC 7 (W. Rhys Roberts trans., 2010).

in competition with other arguments), but also are *persuasive* to one or more target audiences.

Some of the most famous decisions in the U.S. Supreme Court's history have been arguments that were dialectically weaker (in that they were dissenting Justices' opinions, which, by definition, lost the dialectical competition with the majority justices' opinion) but were rhetorically strong for target audiences of subsequent generations of judges and lawyers. One may cite, for example, Justice Harlan's dissent in *Plessy v. Ferguson*⁶⁰ and Justice Holmes' dissent in *Lochner v. New York*.⁶¹

In the specific area of evidence litigation, judicial opinions offer a good deal of evidence of their effort to offer arguments that are rhetorically strong (while *also* internally and dialectically strong). Some of this evidence is in the form of rhetorical devices like metaphors and other figures of speech that judges use, as for example in Justice Thurgood Marshall's final opinion (a dissenting opinion) as a full sitting Justice in *Payne v. Tennessee*, 501 U.S. 808, 844 (1991) (Marshall, J., dissenting). In that opinion, Justice Marshall used reasoning by analogy to challenge the majority's argument attempting to justify overturning two Supreme Court precedents that were then only two and four years old. Though he lost the dialectical competition with the majority (by definition, since this was a dissenting opinion), his opinion had clear evidence of an effort to make a rhetorically strong appeal:

Power, not reason, is the new currency of this Court's decision-making. Four Terms ago, a five-Justice majority of this Court held that "victim impact" evidence of the type at issue in this case could not constitutionally be introduced during the penalty phase of a capital trial. . . . By another 5-4 vote, a majority of this Court rebuffed an attack upon this ruling just two Terms ago. Nevertheless. . . today's majority overrules Booth and Gathers and credits the dissenting views expressed in those cases. Neither the law nor the facts supporting Booth and Gathers underwent any change in the last four years. Only the personnel of this Court did. . . . In dispatching Booth and Gathers to their graves, today's majority ominously suggests that an even more extensive upheaval of this Court's precedents may be in store.

⁶⁰ 163 U.S. 537, 559 (1896) (Harlan, J., dissenting) ("Our constitution is color-blind, and neither knows nor tolerates classes among citizens. In respect of civil rights, all citizens are equal before the law. The humblest is the peer of the most powerful. The law regards man as man, and takes no account of his surroundings or of his color when his civil rights as guaranteed by the supreme law of the land are involved. It is therefore to be regretted that this high tribunal, the final expositor of the fundamental law of the land, has reached the conclusion that it is competent for a state to regulate the enjoyment by citizens of their civil rights solely upon the basis of race. . . . In my opinion, the judgment this day rendered will, in time, prove to be quite as pernicious as the decision made by this tribunal in the Dred Scott Case.").

⁶¹ 198 U.S. 45, 74 (1905) (Holmes, J., dissenting).

Id. at 844.

3.7.3.1 DEFEASIBILITY AS A STRENGTH-VIRTUE AND WEAKNESS-VICE IN AN ARGUMENT: VITAL FOR UNDERSTANDING EVIDENTIARY ARGUMENTS

I conclude this presentation of the Logocratic Method with an explanation of one additional feature of arguments that is vital for a complete understanding and mastery of arguments in evidence (and other domains): the property of *defeasibility*. And we shall suggest that this property is simultaneously a weakness-vice of arguments (since in a defeasible argument true or warranted premises cannot provide incorrigible evidence for the truth or warrantedness of the conclusion) and a virtue, the virtue of flexibility of adapting one's judgments about the world to new information.

Recall that, on our evidential conception of the discipline of logic, logic studies the evidential relation between the argument's premises and its conclusion. An argument from premises to a conclusion is *defeasible* if and only if the argument is one in which it is possible that the addition of some premises to the argument's original premises can undermine the degree of evidential warrant that the original premises provide for the conclusion.⁶²

Of the four modes of logical inference we have examined, valid deductive inferences are always indefeasible (they are never defeasible). Inductive arguments, whether generalizations or specifications, are always defeasible. Some analogical arguments are defeasible, others are indefeasible (some are offered in which the analogical warranting rationales belong to deductive systems), and likewise some abductive arguments are defeasible, others are indefeasible (some offer explanations of deductive phenomena, in which the explanatory system belong to deductive systems).

Reasoning about facts in evidence involves both inductive inference and inductively-informed inferences to the best explanation, and thus are always defeasible.

4 The End: Logocratic conclusions about the relations of evidence and argument

I am now in a position to return to the four theses I identified at the start of this paper, and to point out where and how I have tried to establish them.

4.1 *(Thesis 1) the concept of evidence as best explained as argument, that is, as two sets of premises, one of which (called 'premises') is claimed by an arguer (actual or imagined) to provide warrant for another set (called 'conclusions').*

⁶² A more formal definition of 'defeasible' is this: An argument from premises ε_1 - ε_n to conclusion h is defeasible if and only if the argument is one in which it is possible that the addition of some premise(s), ε_{n+1} , to ε_1 - ε_n , can *undermine the degree of evidential warrant* premises that ε_1 - ε_n provide for h .

This idea is already present in my Logocratic explanation of the nature of argument in which I regard the premises of an argument as *evidence* for the argument's conclusion, with different patterns of evidential support as the defining features of the four modes of logical inference, deduction, induction, analogy, and abduction (inference to the best explanation). See section 3.33.3. The idea is also clearly advanced in my Logocratic explanation of the nature of reasoning with empirical fact-finding as the reconstruction of *evidentiary enthymemes* into a fair formal representation of the arguments that those enthymemes abbreviate. See sections 3.4.2, 3.6.1.2. And I argue the point directly in my discussion of the Logocratic conception of evidence. See section 3.6.1.

4.2 (Thesis 2) Without loss of explanatory power, other conceptions of evidence, in law, philosophy, and "everyday life," can be recast in terms of evidence as argument; further, for many conceptions of evidence, this recasting will not only lose no explanatory power, it will gain some.

The full Logocratic machinery of the enthymeme, the four modes of inference, the ideas of rule-enthymeme and rulification, argument-enthymeme and argufication, does, I maintain, allow one to recast any claim of evidence as evidentiary enthymeme into a fair formal representation of its corresponding argument, in one or another of the four modes of inference. This, I further maintain, is true for evidence claims made in litigation under the aegis of doctrinal rules of evidence, in empirical science, in religion, in practical reasoning, including reasoning in everyday life. See section 2. As noted at the start of this essay, my Logocratic conception of evidence as argument is an *asserted support* conception (see section 2), in which one does not make the *warrantedness* of an evidentiary claim (most of which will be evidentiary enthymemes) a necessary condition of evidence, but instead defers the assessment of how *good* (virtuous) an evidentiary claim is until one gives a fair formal representation of the evidentiary claim into an argument, and then, and only then, assesses the strength or weakness, the virtue or vice of that claim *as* an argument. Further, that assessment of virtue or vice must be sensitive to the different possible types of virtue or vice that concern the evidentiary analyst in a given context: internal or inferential virtue or vice, dialectical virtue or vice, or rhetorical virtue or vice. See section 3.7.

I hope that I've provided enough reason to support my claim that it can now be established in its admitted breadth with a burden of proof on the dialectical opponent (see section) of this claim. I'm ready to continue to engage that dialectical combat (for the concept of dialectical competition of argument, see section 3.7.2).

4.3 (Thesis 3) Corresponding to the claim that evidence is argument, there are types of evidence that correspond to four types of argument (which I shall explain, more precisely, as "modes of logical inference"). Specifically, corresponding to deductive argument is deductive evidence, to inductive argument is inductive

evidence, to analogical argument is analogical evidence, and to abductive argument is abductive evidence.

I've presented and argued for the explanatory utility of this framework directly in sections 3.3 and 2.5.

4.4 (4) *The list of four types of argument (modes of logical inference, "modes" for short) is exhaustive, and although each of the four modes is irreducible to any other, there are complex patterns of interaction and intersection among some of them, such as, induction and deduction can play a role within either analogical argument or abductive argument.*

I've explained the interactions that are possible within modes of logical inference, such as, the operation of deduction within inference to the best legal explanation (see section 3.5.8.4), the operation of either induction or deduction within analogical argument (see section 3.5.9), and the operation of inference to the best explanation also within analogy (see section 3.5.9.3). The interanimated operation of one mode of inference within another may seem to be, but is not, inconsistent with the claim that each of the four modes is irreducible to any other. This is so, I believe, because a mode of inference is best understood and a *multi-step process* – usefully analogized, perhaps, to the "hypothetico-deductive" model of scientific reasoning. So, for example, one step in the overall pattern of argument by analogy involves identifying, *by means of analogical abduction*, a *plausible* explanation of the pattern of similarity and difference between (possible) sources and targets, and then settling on a *best* explanation thereof, in the logical form of an analogy warranting rule. And a separate step in overall analogical reasoning involves application of that rule by means of modus ponens (if the reasoner is committed to the idea that the analogy warranting rule is deductively applicable) or defeasible modus ponens (if the reasoner is committed to the idea that the analogy warranting rule is an inductive generalization). Far from threatening the independence of each mode of inference, this dynamic interaction and intersection of argument, seldom noticed, is yet another confirming instance of the power and suppleness of basic human reasoning capacity.

Finally, regarding the claim of irreducibility of one mode to another, I have mentioned – sufficiently, I hope, for current purposes, albeit briefly – that claims one often encounters about induction and abduction, that one is reducible to the other are wrong and that their wrongness is illustrated by the following fact. Abduction operates within contexts of explanation in which the explanations offered, though they demonstrably have the form of abductions, have as much epistemic security – that is, as much *internal strength* (see section 3.7.1) – as a valid deduction, which has the highest possible degree of internal strength. This is clear, for example, from the operation of abduction within the context of mathematical and logical reasoning (and see also the example I offer of an explanation of a pattern of pieces in chess, arrived at through legal moves, see section 3.5.8.4.

Here ends my longish journey of interacting and intersecting explanations (philosophical abductions) of the nature of evidence and of argument. Thanks for your attention, and I look forward to your questions, comments, and challenges.