

Background ●○○	Vignette #1: Deductive Logic ○○○○	Vignette #2: Inductive Logic ○○○○	References
<ul style="list-style-type: none"> ● In a 2004 manuscript, John MacFarlane [9] investigates various <i>bridge principles</i> linking logic and epistemology. ● Specifically, he investigates principles of the general form: (BP) If $\Gamma \models p$ (i.e., if the argument from Γ to p is <i>valid</i>), then (normative claim about believing (members of) Γ and/or p). ● MacFarlane’s idea was to (a) try to articulate plausible instances of (BP), and then (b) <i>use</i> these (BP)’s to get traction on various (vexed) debates about the nature of validity. ● If this could be made to work, then (or so one of the central hopes was) perhaps it could generate reasons for logicians (of some stripes) to <i>revise</i> their logical principles. ● Today, I will try to articulate a dilemma for the application of MacFarlane-style (BP)’s in the service of trying to provide <i>classical</i> logicians with reasons to revise their logical beliefs. ● I will also explain why Goodman’s [6] argument against (Carnapian) <i>inductive</i> logic faces a similar dilemma. 			
Branden Fitelson		A Dilemma for “Epistemic Arguments” Against Classical Logic	
			2

Background ●○○	Vignette #1: Deductive Logic ○○○○	Vignette #2: Inductive Logic ○○○○	References
<ul style="list-style-type: none"> ● I will, for the sake of today’s arguments, grant that logic is “normative for thought” in at least the following sense: (NL) If S believes that p and (then) S becomes convinced that there is a <i>sound</i> argument <i>against</i> p, then this puts pressure on S to revise their belief that p. ● I will take (NL) as common ground between the classical and non-classical logician. Moreover, I will assume that (NL) can be applied to both logical and non-logical p’s. ● The disagreement about deductive logic (Vignette #1) I’ll discuss today will have to do with the nature of <i>validity</i>. ● I will be talking about an agent (Gil) who accepts (NL), and who understands “validity” as “necessary truth preservation” (viz., classical deductive validity/entailment). ● Our non-classical (specifically, relevant/para-consistent) logician (Bob) will be trying to convince Gil that there a sound argument against “explosion” (the classical rule). 			
Branden Fitelson		A Dilemma for “Epistemic Arguments” Against Classical Logic	
			3

Background ○○●	Vignette #1: Deductive Logic ○○○○	Vignette #2: Inductive Logic ○○○○	References
<ul style="list-style-type: none"> ● In the second Vignette, I will discuss an analogous dialectic that arises between a classical inductive logician (Rudolf) and a non-classical inductive logician (Nelson). ● Nelson’s goal is like Bob’s. He will try to convince Rudolf that there is a sound argument against a fundamental tenet of Rudolf’s favorite variety of classical inductive logic. ● In both cases, the non-classical logician aims to produce an argument that: (a) the classical logician should accept as sound, and (b) refutes a (central) classical logical principle. ● While the arguments I initially present will seem like straw men, I will argue/suggest/conjecture that there is no way to fix them so that they will satisfy both desiderata (a) and (b). ● Specifically, my conjecture/challenge will be that any argument (along the general epistemological lines pursued by Bob and Nelson) will involve a <i>bridge principle</i> linking logic & epistemology that is either <i>implausible</i> or <i>too weak</i>. 			
Branden Fitelson		A Dilemma for “Epistemic Arguments” Against Classical Logic	
			4

Background ○○○	Vignette #1: Deductive Logic ●○○○	Vignette #2: Inductive Logic ○○○○	References
<ul style="list-style-type: none"> ● Bob offers Gil the following <i>classical reductio</i> of “explosion”: <ol style="list-style-type: none"> 1. If a set of propositions Γ is classically deductively inconsistent, then, <i>for every</i> p, ‘$\Gamma \therefore p$’ is a <i>valid</i> argument. <ul style="list-style-type: none"> ● This is “explosion”, and it is being <i>supposed for reductio</i>. 2. Let \mathcal{B}_S be S’s belief set. <i>For every</i> p, if S knows that ‘$\mathcal{B}_S \therefore p$’ is valid, then it is epistemically permissible for S to believe that p (i.e., for S to <i>come to believe</i> that p).¹ <ul style="list-style-type: none"> ● This is a <i>bridge principle</i> linking logic and epistemology. 3. If S knows that their belief set \mathcal{B}_S is classically deductively inconsistent ($\therefore \mathcal{B}_S$ entails <i>any</i> p), then it is epistemically permissible for S to believe <i>any</i> proposition p. <ul style="list-style-type: none"> ● This follows from premises (1) and (2). 4. <i>Even if</i> S knows their \mathcal{B}_S is classically inconsistent, there are still <i>some</i> propositions that S should <i>not</i> believe (i.e., some p’s that are <i>epistemically impermissible</i> for S to believe). <ul style="list-style-type: none"> ● This is an uncontroversial epistemic principle (next slide). ● <u>Contradiction.</u> And, <i>reductio</i> of (1) complete. Or is it ... 			
Branden Fitelson		A Dilemma for “Epistemic Arguments” Against Classical Logic	
			5

¹This bridge principle falls under MacFarlane’s Cp+k category.

Background ○○○	Vignette #1: Deductive Logic ○●○○	Vignette #2: Inductive Logic ○○○○	References
<ul style="list-style-type: none"> ● Gil agrees that this argument is a <i>valid reductio</i>. ● The question is whether Gil should see this as a <i>sound</i> argument against “explosion”. [Answer: <i>he shouldn't</i>.] ● Gil believes that (4) is true, as he should. <ul style="list-style-type: none"> ● After all, if S knows that p is false, then it is not epistemically permissible for S to believe that p. So, provided only that S has <i>some</i> knowledge, (4) must be true. ● Gil believes that (3) is false, as he should. <ul style="list-style-type: none"> ● Gil believes that <i>if</i> (4) is true, <i>then</i> (3) is false. As such, Gil (reasonably) infers (<i>via modus ponens</i>) that (3) is false. ● So, since Gil knows that (3) follows from premises (1) and (2), Gil will/should see this argument as a sound argument against “explosion” just in case Gil believes that (2) is true. ● But, Gil believes that (2) is <i>false</i> (for epistemic reasons that are <i>independent</i> of “explosion”). So, he does <i>not</i> (and <i>should not</i>) see this as a sound argument against “explosion”. 			
Branden Fitelson A Dilemma for “Epistemic Arguments” Against Classical Logic			6

Background ○○○	Vignette #1: Deductive Logic ○●○○	Vignette #2: Inductive Logic ○○○○	References
<ul style="list-style-type: none"> ● At this point, you’re likely to have the following reaction. ● This argument you’re attributing to Bob is a <i>straw man</i>. Surely, there is a better <i>reductio</i> of “explosion” out there. ● I don’t think so (at least, not along “epistemic lines”). ● Bob’s (Cp+k) bridge principle (2) is <i>independently implausible</i> (see [9, p. 9]). Maybe he just needs a better (BP)? ● I conjecture Bob will <i>inevitably</i> face the following <i>dilemma</i>. <p>(†) <i>Any</i> bridge principle (2)/(2') will be <i>EITHER</i></p> <p>(a) <i>implausible</i> [and for reasons <i>independent</i> of “explosion”], OR</p> <p>(b) <i>too weak</i> for a <i>classically valid reductio</i> [with (1) + (4)/(4')].</p> <ul style="list-style-type: none"> ● All the bridge principles in MacFarlane’s survey [9] seem to satisfy (†). And, I suspect that (†) is relevant to MacFarlane’s abandonment of his “logical adjudication” project in [9]. ● Also, I think (†) is at the heart of Harman’s skepticism in [7]. 			
Branden Fitelson A Dilemma for “Epistemic Arguments” Against Classical Logic			7

Background ○○○	Vignette #1: Deductive Logic ○●○○	Vignette #2: Inductive Logic ○○○○	References
<ul style="list-style-type: none"> ● More generally, the challenge I am offering to Bob is the following. I’m looking for an argument like this. <ol style="list-style-type: none"> 1. Classical logical principle \mathcal{L}. <ul style="list-style-type: none"> ● Note: \mathcal{L} is being <i>supposed for reductio</i>. 2. Bridge principle connecting logic and epistemology. <ul style="list-style-type: none"> ● Note: this bridge principle should be (a) <i>not independently implausible</i> (independently of worries about \mathcal{L}), and (b) <i>strong enough</i> to render this <i>reductio classically valid</i>. 3. Epistemic consequence of (1) and (2) that <i>contradicts</i> (4). <ul style="list-style-type: none"> ● Note: Gil should be able to (classically, competently) deduce this epistemic consequence (3) from (1) and (2). 4. Independently plausible epistemological assumption. <ul style="list-style-type: none"> ● Note: this should be an (independently plausible) epistemological assumption that (classically) <i>contradicts</i> (3). ● My worry (†) is that (<i>generally</i>) there will be no way to formulate (2) and (4) so as to yield an argument that Gil should see as a sound argument against principle \mathcal{L}. 			
Branden Fitelson A Dilemma for “Epistemic Arguments” Against Classical Logic			8

Background ○○○	Vignette #1: Deductive Logic ○○○○	Vignette #2: Inductive Logic ●○○○	References
<ul style="list-style-type: none"> ● Once upon a time, there were advocates of inductive logic. ● Hempel [8] defended a theory of the confirmation relation, which was meant to be an inductive-logical relation. ● Hempel’s theory is implausible (for various reasons — some of which I think <i>he</i> would have conceded [4]), so I won’t discuss “reductios” of Hempelian confirmation theory. ● Rather, I will take Carnap (Rudolf) to be our proponent of classical inductive logic [1]. ● For Rudolf, confirmation is a three-place relation between evidence E, hypothesis H, and background corpus K. <ul style="list-style-type: none"> (*) E confirms H, relative to K iff $\text{Pr}(H E \ \& \ K) > \text{Pr}(H K)$, where $\text{Pr}(\cdot \cdot)$ is an “inductive-logical” probability function. ● Nelson’s “grue”-<i>reductio</i> [6] of (*) will <i>not</i> depend on which probability functions are counted as “inductive-logical”. ● I explain Nelson’s <i>reductio</i> in detail elsewhere [3]. Here, I’ll present a condensed rendition of Nelson’s “grue” argument. 			
Branden Fitelson A Dilemma for “Epistemic Arguments” Against Classical Logic			9

Background ○○○	Vignette #1: Deductive Logic ○○○○	Vignette #2: Inductive Logic ○○●○	References
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- Let $Gx \stackrel{\text{def}}{=} x$ is green, $Ox \stackrel{\text{def}}{=} x$ is observed (for the first time) prior to t , and $Ex \stackrel{\text{def}}{=} x$ is an emerald. And, define “grue” as:

$$Gx \stackrel{\text{def}}{=} x \text{ is grue} \stackrel{\text{def}}{=} Ox \equiv Gx.$$
- Consider the following two universal generalizations
 (H_1) All emeralds are green. $[(\forall x)(Ex \supset Gx)]$
 (H_2) All emeralds are grue. $[(\forall x)[Ex \supset (Ox \equiv Gx)]]$
- And, consider the following instantial evidential proposition
 $(E) Ea \ \& \ Oa \ \& \ Ga$
- Now, suppose S is in a “grue context” C_G such that S already knows that Oa (since t is far in the future).
- Finally, consider the following “bridge principle” linking logic (confirmation) and epistemology (evidential support):
 $(\text{RTE}) E$ evidentially supports H for S in C iff E confirms H , relative to K , where K is S 's total evidence in C .
- Now we're ready to examine Nelson's *reductio* of (\star) .

Branden Fitelson	A Dilemma for “Epistemic Arguments” Against Classical Logic	10
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Background ○○○	Vignette #1: Deductive Logic ○○○○	Vignette #2: Inductive Logic ○○●○	References
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- Nelson offers Rudolf the following *classical reductio* of (\star) .
 1. E confirms H , relative to K iff $\text{Pr}(H \mid E \ \& \ K) > \text{Pr}(H \mid K)$.
 - This is (\star) , and it is being supposed for *reductio*.
 2. E evidentially supports H for S in C iff E confirms H , relative to K , where K is S 's total evidence in C .
 - This is the B.P. [(RTE)] linking logic and epistemology.
 3. The agent S who is assessing the evidential support E provides for H_1 vs H_2 in C_G already knows that Oa , and so Oa is part of S 's total evidence in C_G [i.e., $K \models Oa$].
 - This is part of the set-up of the “grue” context C_G [2].
 4. If $K \models Oa$, then—*c.p.*— E confirms H_1 relative to K iff E confirms H_2 relative to K , for **any** function $\text{Pr}(\cdot \mid \cdot)$.
 5. Therefore, E evidentially supports H_1 for S in C_G if and only if E evidentially supports H_2 for S in C_G .
 6. E evidentially supports H_1 for S in C_G , but E does *not* evidentially support H_2 for S in C_G .
- Contradiction. And, *reductio* of (\star) complete. Or is it ...

Branden Fitelson	A Dilemma for “Epistemic Arguments” Against Classical Logic	11
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Background ○○○	Vignette #1: Deductive Logic ○○○○	Vignette #2: Inductive Logic ○○●○	References
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- (6) is Nelson's intuition about the evidential relations in C_G . One could question this, but I'll suppose Rudolf accepts it.
- (5) follows from (1)–(4). So, we can proceed to (4).
- (4) is (*ceteris paribus*) a theorem of probability calculus.
 - The *c.p.* clause needed is $\text{Pr}(Ea \mid H_1 \ \& \ K) = \text{Pr}(Ea \mid H_2 \ \& \ K)$, which is typically assumed (and Rudolf accepts it for C_G).
- (3) is a kosher stipulation in Nelson's setup (*pace* [2]).
- (2) is the bridge principle linking inductive logic (confirmation) and epistemology (evidential support).
- Rudolf will/should see this as a *sound reductio* of (\star) just in case he will/should believe that (2) is true.
- But, Rudolf should *not* believe that (2) is true.
 - There are *independent reasons to reject* (2). Most notably, Glymour's *old evidence problem* [5].
- Conjecture: (\ddagger) any B.P. will be implausible *and/or* too weak.

Branden Fitelson	A Dilemma for “Epistemic Arguments” Against Classical Logic	12
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Background ○○○	Vignette #1: Deductive Logic ○○○○	Vignette #2: Inductive Logic ○○●○	References
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Branden Fitelson	A Dilemma for “Epistemic Arguments” Against Classical Logic	13
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