

What Do Deviant Logicians Show About the Epistemology of Logic?

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Received: 25 February 2014 / Accepted: 2 September 2014 / Published online: 22 October 2014
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Abstract What I will call “the deviant logician objection” [DLO] is one line of attack against the common and compelling tenet that our justification for logical truths is grounded in our understanding of their constituent concepts. This objection seeks to undermine the possibility of any deep constitutive connection, in the epistemology of logic (and also beyond), between *understanding* and *justification*. I will consider varieties of the deviant logician objection developed by Horwich (2000, 2006) and by Williamson (2006, 2008). My thesis is that while the deviant logician objection falls short of proving that this traditional tenet must be rejected, nonetheless it serves to bolster some important refinements.

Keywords Epistemology · Logic · A priori · Williamson

1 The Target of the Deviant Logician Objection: Justification via Understanding

Our primary focal issues here fall within the epistemology of logic: What is our justification for our knowledge of logical truths? I will use conjunction elimination—the inference from a conjunction to one of its conjuncts—as my stock example of a pattern of inference which is safely known to be valid:

$$[\&E] \frac{\Phi \& \Psi}{\therefore \Phi}$$

Hence, any specific instance of [∧E] counts as a safely known logical truth. Some of the perennial questions within the epistemology of logic are due to the sense that such knowledge exhibits a remarkable *immunity to counterexample*: i.e., it is not just that I have yet to encounter a situation in which a conjunction failed to entail one of its conjuncts (which would be remarkable enough, to be sure), but, further, there is the atavistic intuition that such a scenario would be both epistemically inconceivable and metaphysically

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impossible. And hence, questions about the epistemology of logic are entangled with some rather large philosophical issues, such as a priori knowledge and necessary truth.

Even further, the epistemology of logic is distinctively harder than other variants of this already difficult problem of accounting for this sense of immunity to counterexample, because of the *basicness* of logic. Thus, consider G. Russell's:

When an engineer argues that a bridge will stay up for 100 years using mathematics and physics, she is not expected to *also* show that mathematics and physics are correct. Similarly, justifications in physics often assume mathematics and logic, and justifications in mathematics assume logic. But when giving a justification for logic, to what are we allowed to appeal? (2013: 5)

It is lonely at the bottom.

One might endorse skepticism about logical truths and simply deny that we attain knowledge of logical truth. Another possible tack is a view variously called “naturalism” (by its proponents such as Quine (1951), Devitt (2011)) or “radical empiricism” (by its opponents such as Bonjour (1998)), which holds that there is no difference in kind between our justification for logical truths and our justification for empirical knowledge. (The web of belief is seamless, according to Quine's central metaphor.) I will not pursue the question of whether naturalism (in this sense) can avoid collapse into skepticism; it suffices for present purposes to point out that such naturalists must forgo any claims of immunity to counterexample, for the case of logical truth (or indeed for any other case). That is, *even if* such naturalists can explain how we are justified in taking instances of [&E] to be logically true, they can provide no account for how that justification differs in kind from some of our ancestors' extremely well-supported beliefs which we now count as false (such as “All swans are white”). For this reason, many judge naturalism to be an inadequate epistemology of logic.

The set of philosophical views which rejects both skepticism and naturalism about logical truth (i.e., which hold that we can attain knowledge of logical truths, and that this knowledge does exhibit this aforementioned immunity to counterexample) is vast and varied. The target of the deviant logician objection is a tenet which is held in common by many of these diverse views—namely, that logical truth is one of a privileged and circumscribed sort of case in which there is a deep, constitutive connection between *understanding* and *justification*. To illustrate, compare the following pair:

[1] Squares have four sides.

[2] Neptune has four moons.

For both cases, grasp of the meanings of the constituent bits affords an understanding of what would have to be the case for the sentence to express a truth. However, for the case of [1], grasping of the meanings also and thereby *justifies* the belief that what it expresses is true. Not so for [2], in which case understanding it does not come remotely close to providing justification for believing that what it expresses is true. Even though I know exactly what [2] means, I have no idea as to whether or not it is true, whereas it is far from clear that a correlative claim could coherently be made about [1]. Hence, [1] is a (putative) example of this (alleged) privileged connection between *understanding* and *justification*: To understand [1] is *thereby* to be justified in believing it to be true.

This alleged connection between understanding and justification is quite central to philosophy, both historically and conceptually. (Indeed, on some conceptions of the discipline, it is the very essence of philosophy as distinct from other theoretical enterprises, and so, for example, Anselm's ontological argument, Descartes' *cogito*, and Kant's synthetic a priori are all instances of, or variants on, this general strategy of yielding justification from understanding.) However, the [UJ] connection is perhaps most strongly evident in the case of logical truths, such as instances of [&E]. (Surely, the claim that one who understands "&" is *thereby* justified in believing an instance of [&E] to be a logical truth is safer than Anselm's claims about what is entailed by understanding the concept of God!) According to this approach to the epistemology of logic, one's justification for holding that [&E] is a valid pattern of inference is grounded in one's grasp of what "&" means. (Alternatively, holding that [&E] is immune to counterexample is a necessary condition for competence with the concept of conjunction.) Again, versions of this understanding-based epistemology of logic are rather ubiquitous—for example, variants can be found in the work of both Leibniz and Hume, and instances of it are recently developed as a version of "rationalism" by Peacocke (2000, 2004, 2011) and as a version of "empiricism" by Boghossian (1997, 2000, 2011).

Given both the prevalence of this approach to the justification of logical truth, and the sense that logical truth is perhaps the most viable case of this core [UJ] connection, the deviant logician objection threatens to wreak considerable havoc in the house of philosophy. For the claim pressed by the proponents of the DLO is precisely that even here in the pristine confines of pure logic, understanding falls decidedly short of affording justification. (And see Williamson (2008) for a sustained attempt to draw out sweeping, revisionary meta-philosophical conclusions from the DLO.)

As a final preliminary, I should sketch (at least a little bit) what makes for "deviance" in logic. There is general consensus as to what constitutes "standard" or "classical" logic, fundamental tenets cementing the foundation of the enterprise, which hold constant from Aristotelian categorical logic through (and beyond) modern propositional and predicate logic. Core here are the Law of Excluded Middle and the Law of Non-Contradiction:

$$\begin{aligned} \text{LEM} &: \Phi \vee \sim \Phi \\ \text{LNC} &: \sim (\Phi \& \sim \Phi) \end{aligned}$$

Deviant logics are those which transgress such standard, classical tenets. Thus understood, deviant logics are hardly a novel phenomenon: the idea that LEM is subject to counterexample (for future contingents, say, or conditionals with a false antecedent) was fairly prevalent throughout Ancient and Medieval philosophy. However, the monolithic status of standard, classical logic is more drastically under siege in the current era than at any previous time. Intuitionist logics, many-valued logics, and fuzzy logics are some fairly well-known, fairly recently well-developed logics which categorically reject LEM. Many contemporary theories of vagueness also reject LEM. There are paraconsistent logics which develop the idea that rejecting LNC is the best way to handle the semantic paradoxes (e.g., "This sentence is false"), among other phenomena, and quantum logics also reject LNC. In these liberal times, it is even

fairly common and plausible to work with different logics for different purposes, in different contexts.¹

Of course, in logic (as in life), deviance has its price. Perhaps most notably, one cannot have proof by contradiction (aka. indirect derivation, *reductio ad absurdum*) without LEM, and many pillars of both logic and mathematics have as yet only been proved in this way. Before getting back to our main themes, I will quote Quine's statement of the (open-minded but just barely so) orthodox party line on this question:

[L]et us not underestimate the price of deviant logic. There is a serious loss of simplicity,² especially when the new logic is not even ... truth-functional ...
[T]he price is perhaps not prohibitive, but the returns had better be good. (1970: 86)

2 Some Specific Developments of the Deviant Logician Objection

The primary target of the DLO, then, is this general category of views which ground justification for logical truths in understanding their components:

[UJLT]: our justification for logical truths is grounded in our understanding of their constituent concepts

The strategy is to undermine [UJLT] by offering counterexamples to the following putative corollary:

[UJLT corollary]: two competent agents who share the same understandings of logical primitives could not coherently disagree as to whether something constructed out of commonly-shared primitives counts as a logical truth³

To the extent that one can motivate the notion of disagreement about what ought to be counted as logical truths, among those with a shared understanding of the meanings of the constituent primitives, one thereby motivates skepticism that understanding could suffice for justification.

Now, one possible line of response to the DLO would be to question whether [UJLT corollary] really is entailed by [UJLT]. However, for present purposes, I will concede the corollary. *Prima facie*, it seems that proponents of [UJLT] must classify any disagreement as to whether something ought to count as a logical truth as ultimately stemming from one of the following two sources: (i) at least one party falls short of a competent, comprehensive grasp of one of the relevant concepts or (ii) at least one of the relevant concepts is ambiguous, understood in different senses by the different parties. (In referring back to these, I will call (i) “the incompetence option” and (ii) “the ambiguity option.”)

¹ Cf. Haack (1974) for a canonical taxonomy of deviant logics; cf. Beall and Restall (2006) for a case in favor of this kind of logical pluralism.

² Not to mention some other good old Quinean virtues like elegance and fecundity!

³ Williamson's version of what I am calling [UJLT corollary] is: if something is a logical truth, then assenting to it is a necessary condition for understanding it.

All versions of the DLO, then, argue that there can be disagreements about logical truth which involve neither incompetence nor equivocation. One version of the objection can be found in Horwich (2000: 158–9, 2006: Ch 6), focused on disputes between an intuitionist and a classical logician about whether instances of LEM should be counted as logical truths. I take it that it would not be remotely satisfying for a defender of [UJLT] to avail of the incompetence option—i.e., to just insist that the intuitionist ipso facto lacks a competent grasp of the classical concepts of negation or disjunction. To the contrary, the intuitionist challenge presupposes a grasp of those concepts and rejects some of their relatively unpalatable consequences.

A defender of [UJLT] might attempt to take refuge in the ambiguity option—i.e., the idea that, as a result of their disagreements about what ought to count as valid, the intuitionist ends up with distinct concepts of negation, disjunction, etc. However, this option too encounters some complications. For example, the ambiguity objection does not seem to be strong enough to quell the worry. What resources does the classical logician have to handle an intuitionist who obstinately insists, in the face of the ambiguity objection, “NO! I mean exactly what you do by the terms ‘negation’ and ‘disjunction’?” Nothing, it seems, but the fallback to the incompetence option, which we already found to be wanting.⁴

So, what does Horwich’s deviant logician show? Does reflection on the intuitionist challenge to classical logic show up something deeply suspicious about [UJLT], and, more generally, about the alleged core [UJ] connection?

Versions of the DLO are developed more thoroughly by Williamson (2006: §2, 2008: Ch.4). Williamson argues that logically competent agents can even have unequivocal, informed, engaged disagreements about whether something of the form “All As are As” is an instance of a logical truth. For example, there are (sophisticated, considered) reasons to worry about the relations between existential import and truth-conditions—i.e., to hold that any statement that purports to refer to “A”s can only be true if there exist As (in the relevant context). To the extent skepticism about the existence of As can be motivated, then we can imagine someone with (sophisticated, considered) reservations about whether a particular instance of “All As are As” should be counted as a logical truth. (E.g., Is “All unicorns are unicorns” a logical truth?) Again, the incompetence and the ambiguity options do not have much promise to handle all possible dissenters (and Williamson offers many arguments to that effect).⁵

Another example developed by Williamson concerns the logic of vagueness. Many theories of vagueness posit truth-value gaps. To the extent that one can motivate the claim that “A” is vague, to proponents of such a theory, then, again, we can imagine someone whose considered judgement is to balk at whether a particular instance of “All As are As” (e.g., “All tall people are tall”) should be counted as a logical truth. Again,

⁴ Actually, the ambiguity option might have some real purchase in this case. One could argue that “ $\sim\Phi$ ” or “ $\Phi \vee \Psi$ ” literally means something different for an intuitionist, as opposed to a classical logician. (Thanks to Wayne Myrvold for pressing this case in the discussion period after I gave a version of this talk.) To the extent that this is so, then this points to a rather clear difference between the DLOs of Horwich and of Williamson. This would undermine the promise of Horwich’s DLO to support any drastic conclusions about [UJ] connections.

⁵ As Flanagan (2013: 346–7) documents, multiple authors have tried to answer Williamson’s challenge in one (or both) of these ways, but in Flanagan’s (and my) assessment, that will not do. As Williamson (2009: 135; 2011: 499) insists, this is a case of “theoretical disagreement,” not equivocation or incompetence.

Williamson argues that neither the incompetence nor the ambiguity option can save [UJLT] on this front.

At the same time, Williamson holds (as do I) that any statement of the form “All As are As” is a logical truth. Hence, Williamson believes he has provided counterexamples to [UJLT corollary]—i.e., logically competent agents who understand instances of logical truth, but yet do not assent to them. So, then: Does the DLO show that there can be no deep constitutive connection between *understanding* and *justification*, even in the relatively straightforward case of logical truth? Does the DLO prove, a fortiori, that *nothing* can have the status such that assenting to it is a necessary condition for understanding it? ⁶

3 What is the Constitutive A Priori?

I will argue that there is an approach to a priority (of which knowledge of logical truths is a key case in point) which is well-equipped to meet the DLO, safely within the confines of [UJLT]. Hence, rather than forcing us to reject [UJLT], the DLO bolsters the case in favor of certain independently motivated refinements to traditional conceptions of a priority. The refinements in question have to do with the notion of the constitutive a priori [CAP], a broadly neo-Kantian orientation on the notion of a priority developed by such figures as Reichenbach (1920), Wittgenstein (1921, 1953), Pap (1946), and Carnap (1951) and whose contemporary proponents include Friedman (1992, 2000, 2008), Railton (2000, 2003), and Stump (2003, 2011).

Though the core idea is Kantian in spirit, it self-consciously departs from some elements of Kant’s view. Many point to Reichenbach (1920) as the earliest explicit development of the constitutive a priori.⁷ Reichenbach alleges that Kant uses “a priori” in two distinct senses—on the one hand, to mean necessary and eternal, and on the other hand, to mean constitutive of the concept of the object of knowledge—and goes on to sketch a conception of a priority which rejects the former but retains the latter. The driving idea is to preserve many core elements of the concept of a priority, while jettisoning certain other of its traditional associations (such as necessity or infallibility). There is no entailment from ‘constitutive a priori’ to eternally or necessarily true, though (as we will see) there does remain a clear sense of immunity to counterexample.

Many traditional approaches to a priority regard a priori knowledge as essentially involving a special sort of content (i.e., self-evident grasp of superfacts, which glow with luminous certainty). However, proponents of the contingent a priori take a priority to be also essentially a matter of status, not just of content. A priority must be understood not as marking off some queer kinds of objects of knowledge, but rather as indicating a special role, function, or status attached to certain tenets. To call something a priori is to say something about the role which it plays in the relevant

⁶ As for [E], Williamson (2008: 95) concedes that it may “have the best chance” as far as candidates for [UJ] connections go, but argues that even it is subject to competent, unequivocal dissent. However, his putative counterexamples (p.96) are relatively weak and problematic. (Cf. Boghossian (2011), Peacocke (2011) for discussion.) In my opinion, he does a much better job of motivating counter-instances for “All As are As,” and they are enough to force a challenge to [UJLT].

⁷ Cf., e.g., Coffa (1991: Ch.10), Friedman (2000: 370).

framework. The a posteriori beliefs are those that the agent treats as being subject to the tribunal of experience; the a priori beliefs are subject to a higher court.

Consider, for example, an agent who sincerely avows the universal generalization that *every event has a cause*.⁸ Further questions might arise as to the precise status of this belief—for example, is this a regulative rule for the agent, the so-called “principle of sufficient reason” (i.e., any conceivable event *must* have a sufficient cause), or is it rather an inductive generalization (i.e., as far as I know, every event observed to date by any credible observer has had a sufficient cause)? One way to test is to present the agent with a putative counterexample: say, an alleged uncaused event in the quantum void. To the extent that the agent responds with categorical denial—i.e., there *has to be* a sufficient cause there, whether or not anyone has yet detected it—that indicates that this is an a priori regulative rule. If, in contrast, the agent is willing to defer to scientific experts on the matter, and to withdraw or qualify the original universal generalization, then that shows that it was all along an a posteriori inductive generalization. Thus, ‘a priori’ does not simply apply to the content of a belief, but, rather, also essentially has to do with its status, or its role in the relevant, operative framework.

On this orientation, a priority must be understood as relative, in a certain sense—e.g., to a linguistic framework for Carnap (1951), to a language game for Wittgenstein (1953), to a theory in Friedman’s (2000) explicitly neo-Kantian take on this same core idea. (I will stick with the term “frameworks.” My usage is general, such that distinct language games, theories, or etc., constitute different frameworks). However, this relativity stops well short of skepticism (i.e., dismissing the very idea of immunity to counterexample as folly). A priority is revisable, on this orientation, though to make such a revision is a much more drastic matter than revising beliefs that lack this status. To revise the a priori is to change the framework. So, constitutive a priority is a kind of framework-relative immunity to counterexample.

To cite a couple of examples from Carnap (1951), that there are numbers is a constitutive a priori principle of the framework of elementary arithmetic, and that there are ordinary physical objects is a constitutive a priori principle of the framework of folk physics. Considered internally, from within the frameworks, such principles have the status of immunity to counterexample—they are treated as simply not being subject to possible disconfirmation. They are rather constituent elements of the rules of the game, without which various pertinent sorts of questions could not be asked, or conjectures could not be tested.⁹ Carnap proceeds from this point to dismiss many traditional philosophical questions—e.g., “Yes, but do numbers, or physical objects, really exist

⁸ This is based on an example discussed by Railton (2000: 178).

⁹ The influence here of Wittgenstein (1921) is palpable. Consider 5.473 “... In a certain sense, we cannot make mistakes in logic”, 5.4731: “... What makes logic a priori is the impossibility of illogical thought”. Some things have the status of conditions for the possibility of intelligible discourse; to change them is to change the framework of discourse itself. (Alternatively, compare what it would be like to reject the following two claims:

[1] Squares have four sides.

[2] Neptune has four moons.

The latter would be easy and relatively inconsequential, but the former would involve a change of framework. The meaning of “Neptune” would preserve unscathed, but not so for “square”!

mind-independently?—as mistaken pseudo-questions, conflation of the crucial distinction between internal questions (within the framework) and external questions (about the framework). However, while the constitutive a priori is essentially connected to this notion of the framework-relativity, it need not take on any such positivistic meta-philosophical theses.

And note well the clear sense of revisability here. Framework-relative a priority does not involve supernatural grasp of luminously certain, eternal superfacts. Since frameworks are themselves organic entities which are subject to change, what counts as a priori changes accordingly. The frameworks of mathematics and of folk physics, to continue with Carnap's examples, do evolve over time, with the attendant consequence that which principles get treated as having this status of immunity to counterexample—as conditions for the possibility of asking clear questions and posing testable hypothesis—also change over time. For example, it was once justifiable a priori that negative numbers have no square root (for the product of no number times itself could be a negative number). However, our current framework now includes the imaginary number i , defined as the square root of -1 . And note that the introduction of i can hardly be compared with the discovery of another moon orbiting Neptune. It rather constituted a change in the rules of the game.¹⁰

Further illustrations of the constitutive a priori, as well as arguments in favor of the indispensability of the notion in accounting for scientific progress (contra a prevalent brand of Quinean naturalism) are assembled by Pap (1946), Friedman (1992, 2000, 2008), and Stump (2003, 2011), among others. Pap's (1946) driving idea is that every scientific theory is built on fundamental principles which must be treated as unassailable for the purposes of framing testable hypotheses, but nonetheless there is nothing necessary or eternal about which principles are so-treated. Friedman (2000) develops some specific examples along this vein in considerable detail. For example, in the case of Newton's scientific advances, certain principles underlying the calculus have to be treated as a priori in order to even formulate, let alone test, Newton's laws of motion, and in turn, Newton's theory of gravitation could not even be intelligibly formulated without taking the laws of motion as a priori, as not subject to empirical disconfirmation. Friedman describes the epistemological upshot of this (and other) episodes in the history of scientific progress thusly:

What characterizes the distinguished [*a priori*] elements of our theories is ... their special constitutive function: the function of making the precise mathematical formulation and empirical application of the theories in question first possible. (2000: 377)

That which is constitutive a priori plays a certain kind of structuring, regulative role in the framework. It is woven into its basic fabric. According to Pap, Friedman, and Stump (among others), the unassailability of some such assumptions is presupposed by

¹⁰ Here, compare Peacocke's (2000, 2004) notion that certain beliefs are meaning-constituting. The cases under discussion of all squares having four sides and all conjunctions entailing their conjuncts are good examples. (Compare, for example, the remarks about the meanings of "square" vs. "Neptune" in note 9.) I will come back to this notion of "meaning-constituting" again below, closely related as it is to our ongoing notion of [UJ] connections.

the very idea that any specific thing is clearly and intelligibly subject to empirical disconfirmation.

The specific details of this constitutive a priori can vary—for Wittgensteinians, the crucial distinction is that between rules and propositions (i.e., between the rules of the game and the moves made according to those rules); for Carnapians, the key distinction is between the pragmatic and conventional criteria which define a framework and the things which then become sayable or decidable within that framework; etc. And note well that this is not merely a bifurcated, twofold distinction. Many diverse contingent factors affect the evolution of frameworks, which are often re-evaluated, revised, and updated, in more or less drastic ways. We often encounter complex situations to which multiple distinct frameworks may be simultaneously applicable, and the relations between these distinct frameworks can be multi-faceted and dynamic. Framework evolution can only be framed as a neat narrative in hindsight.¹¹

Note also that, even despite this stress on status as opposed to just content, obviously not all contents are equally suited to such a status. For example, I will argue that [∧E] is much better-suited for a priority than LEM, and examples of contents mistakenly treated by others as being immune to counterexample are not hard to find (e.g., “White males are intellectually superior,” “Bad things happen in threes,” “All that happens is for the best, ultimately, because it is God’s will”). The evaluation of frameworks as more or less reasonable, based on differences among the contents which are taken to be a priori, has clear appeal both within and beyond its promise to help make sense of the notion of scientific, political, and philosophical progress.

In any case, getting back to deviant logicians and [UJ] connections, the core idea here is that a priority (which includes our focal notion of logical truth as a distinctive sub-case) should be understood not as marking off some queer kinds of objects of knowledge, but rather as indicating a special status attached to certain basic tenets. To call something a priori is to make a claim about the kind of basic, structuring, regulative role which it plays in the relevant framework.

4 What Does a Proponent of the Constitutive A Priori Have to Say to the Deviant Logician Objection?

Proponents of CAP hold that it is an important lesson of the mid-twentieth-century modal epistemology—a legacy of Wittgenstein, Carnap, and others—that such notions as a priority are comprised of two distinct, separable factors. A priority depends on both intrinsic content and place in a framework. If we appreciate this point, then the fact that two competent agents could unequivocally agree about something’s intrinsic content, while attaching different statuses to it, is no knock-down challenge to core [UJ] connections. Horwich’s and Williamson’s challenges pose no more of a problem for [UJLT], for proponents of CAP, than does the fact that two agents might agree that every event has a cause, and yet for one of them, this is an a priori regulative rule while for the other, it is an a posteriori inductive generalization.

¹¹ See especially Railton (2000, 2003) for discussion of just how messy a comprehensive CAP picture needs to be.

In other words, for proponents of CAP, there are at least two separable factors which constitute “shared understanding”—i.e., sameness of content and sameness of status. Hence, the CAP offers proponents of the [UJ] connections a principled defense from the DLO. For it offers a way to articulate and develop the intuition (which is no doubt motivating the authors mentioned in note 5) that deviant logicians do not in fact instance a “shared understanding” of the basic tenets of standard logic (as is demanded by any notion that the DLO undermines [UJLT]). So, even if their grasp of the content is identical, their attaching different (and deviant) status to that content undermines their promise to afford counterexamples to [UJLT].

Consider again the intuitionist challenge to LEM. LEM is a fruitful simplifying element of many branches of logic, but there are deep and ancient reasons to countenance counter-instances. This situation is completely amenable to a CAP-style explanation. There are external (instrumental, conventional, pragmatic, etc.) questions about what we want from a logic. Again, these days it is even fairly plausible and common to work with different logics for different purposes and contexts, where the appropriate external questions vary from case to case. For some of these external questions, simplicity and fecundity will receive a high ranking, and LEM has proven to be expedient toward those ends. For other external questions, comprehensiveness and integrity may trump simplicity and fecundity, and, accordingly, the putative counter-instances to LEM may be judged to be decisive.

The important point for present purposes is that intuitionism is a distinct framework from classical logic, as befits its different answers to external questions about logic. Hence, for proponents of CAP, that the LEM is a standard, classical logical truth (i.e., derivable as a theorem in frameworks which adhere to the traditional answers to external questions about logic) while being invalid within intuitionist logics is no serious challenge to the core, constitutive [UJ] connections. Common understanding demands the sharing of both status and content, not just of content. Since, accordingly, the understanding of LEM varies between intuitionists and classical logicians, it is unsurprising and inconsequential that its justifiability (or lack thereof) does too.

Given certain aims and interests, it is reasonable to take LEM as a priori (i.e., like the principle of sufficient reason in some frameworks, simply not subject to empirical counterexample).¹² However, when it comes to [UJ] connections, there is little to be said in favor of the claim that assenting to LEM is a necessary condition for understanding it. Contrast this with [&E], where this tight [UJ] (or meaning-constituting) connection is unshakably evident (despite Williamson’s audacious effort mentioned in note 6). Espousers of [UJLT] can and should treat LEM and [&E] differently, because of this clear difference.

What about Williamson’s deviant logicians? Again, proponents of CAP should take the moral to be that foundational questions about the relevant framework are conceptually prior to what turns out to be constitutive a priori within any specific framework. Williamson’s deviant logicians are, like the intuitionist, working within a non-standard framework, which rejects certain canonical answers to external questions about logic.

¹² Indeed, within propositional logic, one might take the LEM and LNC to implicitly define the term “proposition.” (The price of that move is that “There will be a sea battle tomorrow” or “Erin is tall” might fail to express a proposition.)

One exceedingly complex challenge stemming from the development of deviant logics is that it is difficult to judiciously and comprehensively settle external questions about logic; nonetheless, a CAP-style defense of the core [UJ] connections relies only on the crucial distinction, in the epistemology of logic, between internal and external questions, not on any specific answers to the external questions.

Distinct logics of vagueness (say) will countenance disjoint sets of logical truths. It is not a trivial matter to decide which logic of vagueness one ought to prefer, all things considered, but constituent [UJ] connections are a separate matter. Once we have settled, however tentatively, what we want from a logic of vagueness, we will accordingly settle on answers to the appropriate external questions. In due course, there will issue framework-relative logical truths, such that justification for them is grounded in understanding them. One is, of course, free to deviate, but one thereby changes the framework.

Hence, proponents of a CAP-style approach need not take the DLO to have undermined the core [UJ] connections, because they can explain how it is that deviant logicians do not share an understanding of the relevant tenets with their classical opponents. For example, there is a clear sense in which an intuitionist and a classical logician do not instance a “shared understanding” of LEM—even if (contra note 4) they semantically associate exactly the same content with the formula “ $\Phi \vee \sim\Phi$.” Likewise, while I concede that the prospects are dismal for dismissing Williamson’s deviant logicians (pertaining to “All As are As”) on grounds of incompetence or ambiguity, still these cases instance such different orientations with respect to external questions about logic, and attendant differences in status as to instances of “All As are As,” that proponents of CAP should hold that these are not instances of “shared understanding”—again, as the DLO needs them to be.

5 Conclusion

What deviant logicians show about the epistemology of logic, then, is that proponents of understanding-based accounts of justification for logical truths are well-advised to endorse the constitutive a priori. There is a distinctive notion of a priority (of which logical truth is a distinctive case in point) which is well-equipped to meet the deviant logician’s challenge.

The key step in any version of the DLO is to argue that there can be disagreements about logical truth between competent agents who share the same understandings of logical primitives. However, if we concede that a priority depends on both intrinsic content and place in a framework, then the fact that two competent agents could unequivocally agree about something’s intrinsic content, while attaching different statuses to it, is neither surprising nor disturbing. If logical truths are constitutive a priori truths, two competent agents could unequivocally agree about something’s intrinsic content, while attaching different statuses to it. Hence, then, the DLO need not be taken as affording counterexamples to [UJLT].

To treat something as a priori, as simply not possibly subject to empirical disconfirmation, is to mark off a certain content as having a certain privileged status. I have been using [&E] as a case where the intrinsic content all but guarantees the special modal status, but such meaning-constituting cases (cf. note 10) are relatively rare. The

case of LEM helps to illustrate what a daunting job it is to get from [&E] to a comprehensive epistemology of logic, let alone to a comprehensive account of a priori justification. For now, though, the moral is that for proponents of the constitutive a priori, the possibility of a deep constitutive connection between *understanding* and *justification* in (and beyond) the epistemology of logic survives the challenge of the deviant logician.

What the prevalence of deviant logics show is not that the core [UJ] connections are completely untenable, but rather that it is untenable to approach the notion of “logical truth” as if it designates a monolithic block of eternal superfacts.

Acknowledgments This research is supported by a Standard Research Grant from the Social Sciences and Humanities Research Council of Canada, whose support I gratefully acknowledge. Versions of this paper were presented to the Memorial University Philosophy Colloquium, the Canadian Philosophical Association, and Logic & the Philosophy of Science III in Bogota, Columbia. I thank the participants in those sessions for their helpful feedback.

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