Logical Nihilism Suggests Evidential Nihilism

Liam Kofi Bright

Abstract: Logical nihilism is the view that all claims of the form A logically entails B are false. I argue that if this is true its consequences (if you will excuse the pun) cannot be limited just to philosophical logic, but it would undermine all presently accepted analyses of evidence. I.e. if logical nihilism is true it suggests that evidential nihilism is true, nothing is evidence for any hypothesis. I end by suggesting that this suggestion may be welcomed as part of a reappraisal of the task of epistemology, if logical nihilism is accepted.

The role and status of logic in our cognitive lives is a matter of the first importance for philosophy. Judging by our own pedagogical habits we seem to agree that it is the organon of our field, as it is one of few near universally taught tools we impart to students. And in any case our theories of logic, and especially logical consequence, encode what may be our most primitive or bedrock epistemological principles. If we cannot rely on the truth preserving inferences encoded in a consequence relationship, where can we even begin in our inquiries?

Logical nihilism has recently been defended by Gillian Russell (2017a, 2018). Logical nihilism is the view that, for any sentences or propositions A, B, it is not the case that $A \vDash B$, where $\vDash$ is read as denoting logical entailment. (Note: the thesis is taken to hold also for propositions, thoughts, or any other entities purported to stand in logical entailment relationships with each other.) In this brief note I shall not be exploring the reasons for this view, but suffice it to say that the claim is roughly that for $\Gamma \vDash B$ to hold there has to be an exceptionless logical law that where every sentence in Γ is true then so too is B – but in fact no such exceptionless laws exist, and hence for all Γ and B it is not the case that $\Gamma \vDash B$. For an explanation and discussion of this argument see (Wyatt & Gillman 2021). As might be expected from the centrality of logic in our lives, I will suggest that if logical nihilism is granted then a quite thorough rethinking of corer epistemic notions would be required.

The central conceit of this paper turns upon the following argument schema. Let X denote a theory of evidence. Examples of this sort of theory will be given below, but broadly this is a theory which specifies what relationship propositions (or theories, or sentences, or...) have to stand in such that one can be evidence for the other. The argument schema I am concerned with is:

1. Logical nihilism is true.

2. If X is true, then if there is any E, T, such that E is evidence for T then there are some A, B, such that $A \vDash B$.

3. Hence if X is true there are no E,T, such that E is evidence for T.

I.e. if logical nihilism is true, then according to many theories of evidence there is no evidence. Note (2) does not require that evidence itself be propositional or stand in deductive relationships, all it requires is that where evidence for a theory exists some claims must be logically deducible. Nor does this argument rely on the contentious claim that logic is itself epistemically normative (e.g. Field 2015 vs Russell 2017b). Folk who are not logical nihilists, at least, should be able to recognise this as a semantically valid argument schema. The question is whether there is any X that would make (2) true.

Theories of Evidence

Most theories of evidence are at least one of probabilistic, contrastive, or explanatory. Probabilistic theories analyse "E is evidence for T" as meaning some appropriately specified probabilistic relationship holds between E and T. Contrastive theories hold that "E is evidence for T" is true just in case E rules out or renders less likely some set of salient alternative theories to T. And explanatory theories hold that "E is evidence for T" is true when E, having been observed, is appropriately explained by T. Theories of evidence within these classes tend to make schema (2) true.

Think, for instance, of probabilistic theories, the family of theories of evidence wherein one E is evidence for T relative to background knowledge K iff $P(T|E\&K) > P(T|K)$ – that is, E raises the probability of T relative to K (Climenhaga 2017a, 71). But note that $P(T|E\&K) > P(T|K)$ is true only if $\vDash P(T|E\&K) > P(T|K)$. Or, perhaps, letting Γ be a description of the space and the distribution of priors, then $\Gamma \vDash P(T|E\&K) > P(T|K)$. This is for the simple reason that probability theory is a mathematical theory like any other, dependent upon establishing theorems relating propositions of interest. And to say of a claim that it is a mathematical theorem is simply to say that it admits of a sound deductive proof from accepted mathematical claims, which is to say it is a logical consequence of some premises of interest. Letting Δ include both whatever axioms one works from and Γ, then at the least, therefore, $\Delta \vDash P(T|E\&K) > P(T|K)$. If this latter did not hold then one has not in fact established the probabilistic claim one purports to base one's evidential analysis upon. The result of any such modification in the present case would be that the "probability" used in stating the claim about evidence would no longer be that of mathematical probability theory. But many of the defences of "probability" playing something like this role in the theory of evidence depend upon it having the features of mathematical probability (e.g. Pettigrew 2016 — see also Christensen 2004).

But even if one wished to reject this general claim about the relationships of mathematical theorems to logical consequence, there are reasons peculiar to probability theory itself that suggest logical consequence relationships must hold for it to do its intended work. Suppose, to the contrary, that one wanted to allow that $P(T|E\&K) > P(T|K)$ can be true even if it is false that $\vDash P(T|E\&K) > P(T|K)$. After all, presumably the logical nihilist still wants to allow that some claims are true despite the fact that typically A is true only if $A \vDash A$. Might not this case be analogous? No. It is not just incidental that probability theory relies on mathematical theorems - rather, that probability theory has desirable properties for a theory of evidence often itself relies on particular entailment claims holding. For instance, if $A \vDash B$, then $P(B|A) = 1$, which implies that logically equivalent propositions have and give the same probabilities. Proofs of probabilistic theorems then standardly rely on this and the assumption that two propositions are logically equivalent. You can't derive that $P(A) = P(A\&B) + P(A\&{\sim}B)$, for example, unless you assume that A is logically equivalent to $(A\&B)v(A\&{\sim}B)$. However the logical nihilist may go about disentangling other claims from their purported inferential roles, in the case of probabilistic theories of evidence this could only be done at the cost of cutting away the grounds for thinking them good evidential theories in the first place.

Very similar arguments go for contrastive and explanatory theories of evidence. Suppose evidence is that which renders one theory the best of a bunch by telling against contextually salient rival theories. Very often the act of "telling against" a theory is either cashed out in probabilistic terms, in which case the above consideration applies. Or where it is not it is just directly phrased in terms of simply being logically inconsistent with the other theories (e.g. Williamson 1997, 727). Logical inconsistency is typically defined or understood in tandem with claims about negations or incompatible propositions being entailed (Restall 2015, Kürbis §4.2). Hence schema (2) would have to hold. Finally, consider theor-

ies of evidence that tie a proposition's evidential status to its ability to explain some pertinent data (Climenhaga 2017b). These theories rely on notions of explanatory relevance, the sense in which T bears on E as a potential explanation thereof (Lundberg 2021, 561). To flesh this out theories of explanation often either involve probabilistic relationships holding at some point, or some other deductive entailment relationship holding among claims (Woodward 2014). These theories of evidence will hence often, when fully spelled out, satisfy premise (2).

And just as with probability theory it shall more be difficult to disentangle theories of evidence from claims that logical nihilists are bound to reject. It is not just a quirk of probabilistic theories of evidence that their argumentative support will be eroded by the modifications required to render it compatible with logical nihilism. The same goes for any explanatory theory of evidence that relies on probabilistic or deductive relationships to explain the connection of evidential relevance. Similar argumentation can be given for evidential theories that stress its contrastive role. It is not an incidental feature of theories of incompatibility that they appeal to entailment relationships at some point. These logical relations were supposed to explain why it was that E being incompatible with T's contextually salient rivals boosted our confidence in T. The logical incompatibility, bound up as it is with our notions of logical consequence, was supposed to be what made the theory work. Without being able to rely on pertinent entailments it is not clear what the key contrast consists in. In all these theories the fact that some deductive relationship holds between some claims is important to their own justificatory story.

To summarise, logical nihilism interferes with our theories of evidence in two ways. First, for some theories of evidence they just directly analyse evidential relations in terms which require logical consequence relations to hold. For instance if I say that E is evidence for T just in case it entails a contradiction if combined with salient rival theories to T. Second, for some of evidential theories, the justification for the relationship analysed being viewed as an evidential relationship in particular requires a theorem to hold. It is the impossibility of claims which entail contradictions being simultaneously true which explains why we can treat E as evidence for T in the contrastive vase. Logical nihilism thus suggests evidential nihilism, and by its own lights it could do no stronger.

A Sceptical Sketch

I have not addressed whether this should be viewed as a reductio of logical nihilism. For what it is worth, I do not think it is. Most conservatively, one could see the above as a call for those sympathetic to logical nihilism to develop a theory of restricted domains wherein consequence relationships are truth tracking. As Russell notes, logical nihilists can agree that instances of an inferential schema happen to be truth conducive even while it is not everywhere valid (Russell 2017a, 126). A logical nihilist with a theory of evidence that apparently satisfies (2) may thus want to argue that in all instances wherein their theory needs $\Gamma \vDash B$ to hold it is there truth preserving.

Such a response would no doubt be a challenging and worthy technical project for the logical nihilist looking to recover a traditional theory of evidence. But I fear it would miss out on the opportunity provided to engage in deeper reflection. When one countenances logical nihilism one is invited to consider a quite different way of living our epistemic lives. Theories of evidence which satisfy (2), even when they are apparently fallibilist or not too demanding, still relied at some point on some exceptionless relationship holding among certain propositions. Logical nihilism asks us not to rely on such exceptionless relationships, for they are liable to disappoint us. If we are to take on board the lessons of nihilism we shall have to accustom ourselves to living in a world that can't be trusted to give us anything more than defeasible heuristics.

Logical nihilism, and from it evidential nihilism, can be seen as the first steps in a programme to "humanise epistemology" by embracing a truly thoroughgoing fallibilism (Wiredu 1995). What has been exposed is that our core concepts relied on something grander than what we have any right to from our human scale. Even humble everyday ideas like that of evidence turned out to presuppose, when thoroughly examined, exceptionless generalities of a sort it is not ours to take for granted. Rather than being seen as a reductio for the logical nihilist, or a technical challenge to recapture our traditional theories of evidence in a nihilist framework, we might instead see evidential nihilism as an opportunity to craft concepts appropriate for a duly humbled inquirer.

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