Making Sense of Logical Pluralism[*]

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Some philosophers of logic are what has come to be called *logical monists*. They favor one logic as the correct logic. Some monists favor classical logic; others favor different non-classical logics. Some other philosophers of logic are *logical pluralists*. Logical pluralists insist that there are different equally correct logics.[1] The debate between monists and pluralists is one of the most central debates in contemporary philosophy of logic. But in this paper, I ask: what might the monism/pluralism debate be, such that it is worth having? My conclusions will mostly be negative. Rhetorically, my focus will be on logical pluralism. I ask which pluralist thesis might be worth our philosophical attention. But the problems in making sense of pluralism are of course equally problems regarding making sense of the alternative, monist position.

While my focus will be on theses in the philosophy of logic, many of my considerations will in fact be general. Toward the end I will briefly stress how they generalize.

1. Introduction: the liar paradox

The themes I wish to bring up regarding logical pluralism are neatly introduced by consideration of the liar paradox – the paradox which, in one well-known form, concerns what to say of a sentence L that says of itself that it is not true. Suppose first that L is true. If it is true, then what it says is the case really is the case. What L says is that L is not true. So L is then not true. Since from the supposition that L is true we can conclude that L is not true, the supposition is incorrect. So L is not true. But if L is not true, what it says is the case is the case after all. But if what a sentence says is the case indeed is the case, it is true. So L is true. But then we have concluded both that L is true and that L is not true. Contradiction.

[1] Among monists can be mentioned Dummett (see e.g. 1975), Priest (2006, 2008), and Williamson (2013, forthcoming). Among pluralists can be mentioned Beall and Restall (e.g. 2006), Carnap (1934, 1950) Shapiro (2014), Hjortland (2017), and Bueno and Shalkowski (2009).

There are various purported solutions to the liar paradox. But rather than focusing on them I will turn to a metaquestion: what sort of problem is the liar paradox to begin with? Let me outline some different projects that each can be seen as a project of dealing with the paradox.

The mapping project. The liar paradox *can* be thought of as merely a problem concerning the *expressive limitations* of various *possible languages*. The classic result here, what is sometimes called *Tarski's theorem*, says that in no language which can talk freely about its own expressions are both the property of being true, conceived of as satisfying the T-schema[2], and the classical truth functions expressible. This theorem serves as a starting point for one project related to the liar: much formal work on the liar has in effect been devoted to the question of how *close* we can get to expressing these things. For example: taking a language which can talk freely about its own expressions and in which the classical truth-functions can be expressed, how close can a predicate of this language come to satisfying the T-schema?

The actual language project. A second project is that of figuring out what our *actual* language is like in relevant respects. What can be and is expressed in our actual language?

The normative project. A third project is that of figuring out what the best kind of language – for some particular theoretical purpose – is like. As per what was said in connection with the mapping project, we cannot have all we might have wanted. We cannot have classicality, unrestricted self-reference and a truth predicate satisfying the T-schema. But of the languages we can have, which is the best?

The three projects are obviously different. Complete success in carrying out the mapping project only involves mapping out what sorts of possible languages there are. That does not by itself amount to carrying out the actual language project: that of figuring out what our actual language is like. Moreover, even having successfully carried out these two projects, one can go on to ask the different question of which language is best (for some particular purpose). Answering that question is the normative project.

All three projects described are on the face of it linguistic, and it can hence seem to be presupposed that dealing with the liar paradox is a linguistic project. This is apt to provoke the protest that a theorist dealing with the liar need not be engaged in a linguistic project but can for example be engaged in the metaphysical project of

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[2] A predicate satisfies the T-schema if the result of substituting that predicate for the schematic "T" in the schema *s is T iff p* is a valid schema, where for "s" a sentence of the object language is substituted and for "p", the metalanguage translation of that object language sentence is substituted.

figuring out *what truth is*. But although I have presented the distinctions between different projects in linguistic terms, the distinctions survive being transposed into a metaphysical key. When we seek to investigate what the property truth is, what property or properties do we investigate? One possibility is: all broadly truth-like properties. (This corresponds to the mapping project.) Another is: the property that is ascribed by the ordinary predicate "true". (The actual language project.) Yet another is: the most theoretically significant truth-like property. (The normative project.)

Regarding the mapping project, I will assume that regardless of the details concerning what possible languages there are, surely it will be true that there is a plethora of possible languages, some rather fundamentally different from each other. Consider some prominent purported solutions to the liar paradox that have been proposed. There is the dialetheist solution, centrally involving the idea that there are some truths of the form "p and not p". There are various 'gappy' solutions, which involve refusal to accept "p or not p" in full generality. Without being a friend of either solution one can say that the friends of these solutions describe possible languages. There are languages where "not" functions the way the dialetheist believes our "not" works, and languages where "not" functions the way the gap theorist believes our "not" works. Generally, whether or not a given purported solution works as a solution – and here one question is what it is to solve the paradox – one can think that the purported solution accurately describes some possible language. (I will get back to issues in this vicinity later, and discuss some relevant complications.)

One natural suggestion regarding what it is to *solve* the liar paradox is to say that it centrally involves accounting for how our language works. As already mentioned, completion of the mapping project does not immediately yield such an account. It does not tell us where on the map our language is. This brings us to the actual language project. The first thing to stress about this project is that it is not clearly of great philosophical interest. What is the general, philosophical interest of the fact that the truth predicate or negation operator we happen to employ works a particular way, if there are other ways for such devices to work? This would be of general philosophical interest if there were only one way for such a device to work. But by what I said in connection with the mapping project, that is not so. Already the different purported solutions to the liar show that there are different ways for such devices to work. Points about how our actual truth predicate or negation operator work would also be of general philosophical interest if they were somehow privileged over other truth predicates and negation signs: if they were better than the alternatives along some relevant dimension. Perhaps they are. But they need not be,

and the actual language project is not itself concerned with whether they are.[3]

I say this as someone who has been involved in the actual language project.[4] My own view, the details of which need not detain us, is that our actual language is in a certain way inconsistent, and this is what accounts for the paradoxicality of the liar reasoning. My view involves saying something theoretically surprising about natural language: that language could be inconsistent in this way is something many theorists would be inclined to deny. Compare two other accounts of the liar paradox in the literature, different from mine but similar in a relevant respect. According to Anil Gupta and Nuel Belnap's revision theory of truth , the liar paradox shows how some natural language expressions are governed by rules of revision (by contrast with ordinary rules *of application*).[5] Michael Glanzberg has argued that the liar paradox shows that natural language displays a certain kind of context-sensitivity different from the kinds of context-sensitivity ordinarily recognized.[6] Each of these accounts claims that the best account of the liar involves saying that natural language functions in ways one might have thought is not possible. These accounts then have general significance: they show something more general than that our language happens to work some particular way or other. But arguably, for the general philosophical significance they have, it suffices that they describe possible languages.

Doubts about the significance of the actual language project point us toward the normative project. The normative project – what is the best type of language like? what is the best truth predicate like? the best negation? – promises to have the significance that the actual language project lacks. But it also invites further, potentially difficult questions: best for what? in what way?

Inching closer to the topic of pluralism, note that one could invoke the rhetoric of "pluralism" in connection with each of these projects. Focusing on the mapping project, there is a pluralist thesis, *mapping pluralism*, which says simply that there are the different possible languages mentioned, perhaps adding that they are all legitimate objects of theoretical investigation. As for the actual language project, there is the view that our thoughts and practices – whatever it is that determines what language we speak – does not determine uniquely which of all the possible languages it is that we speak. It is then not determinate which language we

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[3] Compare Carnap (1963), p. 1003. In the main text I make general pronouncements about philosophical significance, without pausing on the theoretical question of what exactly makes for philosophical significance. This is a difficult question. But briefly: just because some property is picked out by one of our expressions does not mean that it is metaphysically or normatively important.

[4] See, e.g., my (2002).

[5] Gupta and Belnap (1993).

[6] Glanzberg (2001).

speak. In principle, it could be indeterminate as between some rather different languages which one it is that we speak. (Perhaps it is indeterminate whether we speak a language correctly described by the dialetheist or a language correctly described by the gappy theorist.) This can be seen as a kind of pluralism: call it *indeterminacy pluralism*. Turning to the normative project, there are a number of different views on this issue that can be described as pluralist. First, there is the view that different languages (truth predicates, etc.) are best for different purposes. Call this *purpose pluralism*. Second, there is the view that even given some particular purpose, perhaps some canonical purpose, different languages serve that purpose equally well. Call this *goodness pluralism*.

For reasons given above, in connection with my remarks about the three different projects, I have doubts about the significance of most of these possible forms of pluralism. Mapping pluralism seems rather trivially correct. No doubt there are interesting questions about the extent of the space of possible languages, but that there are importantly different possible languages in the way sketched cannot be in serious doubt. Purpose pluralism likewise seems rather trivially correct. The truth of indeterminacy pluralism may be up for grabs. But my doubts about the philosophical significance of the relevant project, the actual language project, extend to this particular view on how actual language works. The one potentially interesting pluralist view is goodness pluralism. But as it stands, goodness pluralism amounts to a promissory note. Without an adequate account of what the canonical purpose in question is supposed to be it is hard to see what exactly goodness pluralism amounts to.

2. Logical pluralism

Thus far I have talked about pluralism, and I have talked about languages with different logics. But I have not yet related my discussion to the debate over logical pluralism actually found in the literature. Let me now begin doing that. There are two different kinds of logical pluralist theses that are discussed, and it will be worth distinguishing between them, even though in the end my points about each will be the same. There is *Carnapian pluralism*, going back to Carnap (1934), which focuses on the logical expressions themselves, the connectives and the quantifiers. The Carnapian stresses the existence of languages where the logical expressions work differently: contrasting, e.g., one possible language where they have classical meanings with one where they have intuitionistic meanings. Then there is *Beall-Restall pluralism*, defended in e.g. Beall and Restall (2006), which by contrast focuses on logical consequence or validity and in some way or other stresses that

there are different notions of validity. Beall-Restall pluralism has been more centrally discussed in recent years. (I will use "Beall-Restall pluralism" as a label for every pluralism of this latter kind, even if Beall and Restall's own brand of pluralism in fact involves other specific views.)[7]

I outlined four different types of pluralism above. One can combine each type of pluralism with either a Carnapian focus on the logical connectives themselves, or with a Beall-Restall focus on validity. All in all, we get eight varieties of pluralism.

Start with Carnapian pluralism. One type of Carnapian pluralist can say that there are some languages where the connectives behave classically, some where they behave intuitionistically, some where they behave paraconsistently, etc. This would be mapping pluralism, trivial for the reasons indicated. (Although, again, opinions can differ about the exact extent of the space of possible languages.) Another Carnapian pluralist can say that it is indeterminate how our connectives work. Yet another Carnapian pluralist can say that there are the possible languages that mapping pluralism says there are, and different ones among these languages are best for different purposes. Finally, a Carnapian pluralist can say, focusing on some canonical purpose, that different possible languages are equally good for that purpose. This latter thesis is the most interesting type of pluralist thesis, but raises the question: what might some suitable canonical purpose be?

The same distinctions can be drawn in the case of Beall-Restall pluralism. A mapping pluralist thesis of this kind says that there are different validity properties. An indeterminacy pluralist thesis of this kind says that our concept of validity is indeterminate. Beall and Restall themselves say some different things (and below I will complain about this), but one thing they commit themselves to is indeterminacy pluralism. Much of their discussion is centered on the following thesis:

Generalized Tarski Thesis: An argument is valid$_x$ if and only if in every case$_x$ in which the premises are true, so is the conclusion.[8]

From this one supposedly gets to pluralism, because the meaning of "case" is, they claim, unsettled. (This is what is indicated by the subscript "x" in the statement of the thesis.) Given different ways of settling what "case" means one arrives at different notions of validity. A claim they make is that our "valid" is indeterminate among

different such notions.9 This is a kind of indeterminacy pluralism. They could have made only the weaker claim that there are different possible concepts of validity corresponding to different possible meanings of "case" without making an indeterminacy claim: they could have said that we determinately employ one of these notions of validity even if there are these different possible notions of validity to employ. They would then have subscribed to mapping pluralism without subscribing to indeterminacy pluralism. Other types of Beall-Restall pluralism would be that different notions of validity are best suited to different purposes – the relevant form of purpose pluralism – and that even focusing on some canonical purpose there are different notions of validity equally well suited to the task.

There are some central lessons to be drawn from these discussions of Carnapian pluralism and Beall-Restall pluralism. First, there is a variety of importantly different logical pluralist theses – a plurality of logical pluralisms, if you will. Second, when it comes to a number of pluralist theses there is reason to doubt their philosophical significance, whether because they are trivially true or because what they speak to is too bound up with our contingent situation to have the kind of interest that is supposed to attach to philosophical theses. Third, the most promising form of pluralism as far as significance is concerned, goodness pluralism, depends for its content on the identification of a canonical purpose.

In substantive discussion to follow, I will discuss two theoretical issues further. First, I will discuss some issues that arise in connection with the attempt to put more flesh on the bones of goodness pluralism. Second, I will revisit the issue of mapping pluralism. Perhaps I was too quick above when saying that there are various possible languages of the kind indicated. (More specifically: the vague "of the kind indicated" hides some problems. What kind, exactly?)

But before I turn to this discussion, I wish to relate my above remarks on forms of pluralism to the actual discussion of logical pluralism in the literature.

3. The debate in the literature

Even though I related to Carnapian and Beall-Restall pluralism in the foregoing, I have so far related only very little to the actual logical pluralist literature. In this section I will relate to the logical pluralism debate as it has been conducted by showing how a number of claims in this debate relate to what I have been discussing so far.

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9 Beall and Restall (2006, pp. 26-35) also think that any admissible precisification of "valid" would have to satisfy criteria of necessity, normativity and formality: logic must be normative and formal, and the conclusion must be necessitated by the premises.

Gillian Russell begins her *Stanford Encyclopedia of Philosophy* entry on logical pluralism (2013) by saying that logical pluralism is the thesis "that there is more than one correct logic", and immediately goes on to ask what this in turn means. She says that some specifications "result in versions of logical pluralism that seem relatively anodyne: if any formal system can correctly be called a 'logic', and to call one 'correct' is to say that it has a use, then it seems clear that there can be more than one correct logic given that, say, linear logic has computing applications, and intuitionistic logic is useful in constructive mathematics". This echoes my point that the purpose pluralist thesis – the thesis that different logics are best for different purposes – is uncontroversially true.[10]

Russell goes on to suggest, on the positive side, that "a correct logic is a complete and accurate specification of the relation of *logical consequence* on a set of truth-bearers", and that pluralism should be understood as the claim that there could be more than one correct such specification. But what is it to give a complete and accurate specification of the notion of logical consequence? Is it to specify the notion of logical consequence *that we employ*? This is the actual language project, and above remarks in connection that that project apply. Or is it to specify the *best* logical consequence-*ish* relation? That is the relevant kind of normative project. Russell is not explicit about what project is at issue; perhaps legitimately so since her article is an overview article.

When laying out the pluralist view he defends, Stewart Shapiro (2014) says, "One of the main motivations for the present, eclectic orientation to logic, developed in subsequent chapters of this book, is to show how a wide variety of theories, studied by mathematicians whose credentials can hardly be challenged, are legitimate".[11] One wonders: how can it be at all reasonably denied that different theories with different logics are legitimate topics of mathematical study? Shapiro is talking about either mapping pluralism or purpose pluralism, depending on what he means by "legitimate", and on how, more precisely, we choose to talk about mapping pluralism and purpose pluralism. Shapiro never gets into what exactly legitimacy amounts to. If all Shapiro means is that these theories are worthy *objects of study*, one can see this as mapping pluralism. Insofar as he stresses that the theories have *uses*, it is purpose pluralism. Either way, the pluralism is of a kind I have earlier deemed trivial.

Ole Thomassen Hjortland (2017) approvingly describes a pluralist view according to which different languages, suited for different purposes, have negation signs working differently, one validating the relevant form of double negation

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[10] Also, e.g., Cook (2010) emphasises this point in his survey article on logical pluralism.
[11] Shapiro (2014), p. 38.

elimination and the other not. This is a kind of purpose pluralism.

Graham Priest (2006) employs a comparison with pure and applied geometry, and says about logic:

> If one is asking about pure logics, then, pluralism is uncontentiously correct. Plurality is an issue of substance only if one is asking about applied logics. In this case, there is the potential for rivalry, and whether one should be a monist or a pluralist about this rivalry is a question that must be faced.

> Let us turn, then, to applied logics. The first thing to note here is that pure logics can be applied for many purposes...And again, it is clear and uncontentious that different pure logics may be appropriate for each application...Plurality is, then, an interesting issue only when we have one particular application in mind.[12]

That pluralism is uncontentiously correct "if one is asking about pure logics" echoes what I have said about mapping pluralism. What Priest says about canonical applications relates to the point, in connection with goodness pluralism, that when one asks which logic is best, one must ask: best for what?

But when Priest later goes on to discuss the canonical application of a pure logic, his discussion suggests that he thinks of it as centering on the question: which logic do we actually employ (or what is the logic of "the vernacular", our actual language). He stresses that the canonical application of a logic is in the *analysis of reasoning* and then says that we reason in the vernacular, and goes on to discuss how to fashion translation schemes between pure logics and what goes on in the vernacular. He thinks that insofar as the classicist and the intuitionist disagree, they disagree about whose pure logic provides the most faithful account of reasoning in the vernacular. For Priest, then, the relevant project is the actual language project. The kind of pluralism that would be at issue is indeterminacy pluralism.

Beall and Restall (2001) quote Peirce saying "as long as reasoning does not lead us astray, the whole purpose of logic is fulfilled", and take this point to form the basis of an objection to logical pluralism – the point of the objection being that the correct logic is one using which we will not be led astray.[13] They respond by noting that "[b]eing led astray is relative to some fixed direction", and reason that different purposes to which different logics may be put are analogous to directions.[14] They

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[12] Priest (2006), p. 195.
[13] Beall and Restall (2001). This article predates their (2006) book-length defense of logical pluralism but contains a more involved discussion of the issue of normativity.
[14] Ibid.

conclude,

> So, even if the whole purpose of Logic is to avoid being led astray, there seems to be more than one logic that may arise given this purpose. One must stay on the right path, to be sure, but there's certainly more than one path along which one might trek. For this reason, the Peircean objection seems to lose force.[15]

Their claim seems to be that because different logics are best for different possible purposes, logical pluralism is correct. That would be purpose pluralism, and again to stress, this seems like a pretty trivial pluralist thesis.

As brought up already above, Beall and Restall tend to focus on

> Generalized Tarski Thesis: An argument is valid$_x$ if and only if in every case$_x$ in which the premises are true, so is the conclusion,

From this thesis one supposedly gets to pluralism, because the meaning of "case" is unsettled. The point about the actual unsettledness of "case" is relevant if one is concerned with the actual language project, and is concerned to emphasize indeterminacy pluralism.

Indeterminacy pluralism is different from purpose pluralism. One could well be a purpose pluralist without being an indeterminacy pluralist. Beall & Restall's point about different purposes – different paths one might trek – is a point relating to purpose pluralism. To see how the considerations come apart, note that there may be paths one might trek not corresponding to any sharpening of "case"; there may in principle be sharpenings of "case" not corresponding to any reasonable path to trek. More tellingly, even if "case" were perfectly determinate there could be different paths one might reasonably trek; and even if, somehow, one unique path was rationally ordained, our "case" could be indeterminate.

A similar tension is evident in Shapiro (2014), who both states his pluralist thesis in terms of what is mathematically legitimate (a normative issue, of sorts) – see the earlier quoted passage – and in terms of what sharpenings of our actual notions that there are.[16] There can be mathematically legitimate logic-ish theories whose consequence relations do not correspond to any sharpenings of the intuitive notion of logical consequence; and there can in principle be mathematically

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[15] Ibid.

[16] This is something that recurs, but see e.g. Shapiro (2014), p. 25: "there are different, mutually incompatible articulations or sharpenings of the intuitive notion or notions of logical consequence".

illegitimate theories whose consequence relations do correspond to such sharpenings. What is an available sharpening of our intuitive notion of logical consequence is an importantly different question from what is a consequence relation of some mathematically legitimate theory.

4. Goodness pluralism

If the most interesting form of pluralism is goodness pluralism, then we need to attend to the question of the relevant purpose of logic. We need to identify something as the, or at least *some*, central purpose to which logic is put and ask whether there is a unique logic that is best for that purpose. About this there can be sensible debate.

But what might the relevant purpose be? Start with the suggestion: *how we ought to reason*. But what does the "ought" mean here? If we understand it as an all things considered ought, one needs to worry about seemingly irrelevant things. Consider, for example, quick but dirty rules: rules of reasoning that are not reasonable candidates for being valid but which are simple and tractable and work well enough pretty much all the time. It can reasonably be argued that we ought all things considered to employ such rules. But it seems odd to take this consideration to show that the relevant system of quick but dirty rules comprise the correct logic in the sense at issue.

Even if there is some interesting debate to be had over which possibly quick but dirty rules are all things considered best to use in reasoning, stressing the significance of that possible debate does not do much to vindicate the actual debate over pluralism, for that debate in a principled way tends to abstracts away from such practical issues. (Compare: there may be a reasonable debate to be had about which logic is *aesthetically* superior. Again this would not do much to vindicate the actual debate over pluralism. For any debate over which logic is aesthetically superior would be removed from the actual concerns of philosophers of logic.)

Moreover, if different logics are best for different purposes, as per the purpose pluralism which I have urged is trivial, then it is for that reason simply false that there is one logic such that we always all-things-considered ought to reason using that: it depends on the situation at hand.

What else might we try? How about "how we *logically* ought to reason" or "how we *epistemically* ought to reason"? Start with the former of these suggestions. One concern here is about informativeness: If we wonder about the purpose of logic, being told that it is about reasoning logically is not much help. Another problem is that in the context of mapping pluralism of the Carnapian kind – the view that there are different languages with different logics – one may think that when one employs

an intuitionistic language one ought logically to reason intuitionistically, when one employs a paraconsistent language one ought logically to reason paraconsistently, etc. Appeal to "epistemically ought" faces similar problems. "Epistemically" sounds more helpful than "logically", but it is only moderately helpful as there are different possible epistemic goals.[17] There is also, again, the question of employment of quick but dirty rules. Such employment can serve central epistemic goals such as acquiring many true beliefs, but I suspect many philosophers of logic would not take this to be immediately relevant to the question of which logic is the right logic.

What if one focuses on the purpose of *truth-preservation*? That is, the purpose at issue is that of reasoning in a way that preserves truth. Whatever in the end its fate, this suggestion is better. Let me first discuss, and set aside, some possible objections to it. After that, I will bring up the concern I will focus on. This concern is general

First, lots of inferences that are not logical are necessarily truth-preserving. (Consider: from ___ is water to infer: ___ is H_2O.) This shows that appeal to truth-preservation does not work to demarcate the logical from the non-logical. But questions about the extent of logic are orthogonal from which logic is correct. Having demarcated, on independent grounds, the logical from the non-logical one can have arrived at (e.g.) the conclusion that both first-order intuitionistic logic and first-order classical logic are properly classed as logics: and one can then go on to ask whether one of them is uniquely correct, in whatever sense is deemed to be at issue. How the demarcation is effected is not our present concern; all that is important for present purposes is that it is a separate issue.

Second, one might be concerned that a relevance logician will be likely to agree that non-relevant classical inferences preserve truth but still have objections to classical logic, on the ground that some classical inferences fail a criterion of relevance. But this concern need not detain us. All we are concerned with is whether there is some canonical purpose of logic such that a reasonable monism/pluralism can be had over whether some unique logic best serves that purpose. Even if the particular purpose we are now considering is such that debate over serving that will not take into account prominent motivations for relevance logic, that is not itself a problem. (Though one might wish to ask: is there another reasonable monism/pluralism debate such that these motivations are prominent when it comes to that debate?)

Third, appeal to truth-preservation seems to make more sense in the context

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of a debate over Beall-Restall pluralism than in the context of a debate over Carnapian pluralism. The reason is this. When we are considering the Carnapian issue, we are simply considering different languages with logical expressions behaving differently. And where one logic will characterize what is truth-preserving in one language, another logic will characterize what is truth-preserving in another language, and so on. But then there will be no non-trivial question over which unique logic does best when it comes to truth-preservation: different logics will preserve truth for different languages. By contrast, when it comes to Beall-Restall pluralism, we can ask which precisification of "case" yields a characterization of validity such that validity tracks truth-preservation. (However, I will shortly revisit these tentative conclusions about Carnapian pluralism and Beall-Restall pluralism.)

Fourth, Hartry Field (2009, 2015) has prominently argued, using appeal to semantic paradoxes, that validity cannot be understood as truth-preservation. But even if validity cannot be truth-preservation, the question of how a relation of truth-preservation works is of independent interest. As Field himself notes, capturing truth-preservation can still be a desideratum, even if, due to paradox, this desideratum cannot be fully met.[18] And again, all I am concerned to find is one central purpose such that one can have an interesting debate over whether some unique logic best serves that purpose.

Taking the points from the preceding paragraph at face value, one can think that appeal to truth-preservation points the way to some philosophically significant debate over goodness pluralism. But there are complications to take into account.

We need to take into account the possibility of truth pluralism. Truth pluralism as it tends to be discussed is the idea that different truth predicates are suitable for different discourses. Call this *discourse pluralism*.[19] (One can be a discourse pluralist also regarding logic, holding that different logics are appropriate for different discourses. I turn to this in the next section.) But there are different possible kinds of truth pluralism. One is that different kinds of truth predicates are best suited to different tasks. (E.g.: it is sometimes said that we need a disquotational truth predicate for some tasks and a substantive truth predicate for other tasks.) This is purpose pluralism, regarding truth. Another is that – even bracketing the pluralism just pointed to – there is no unique best truth predicate but different ones are equally

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[18] Field (2009), p. 356.
[19] See Wright (1992), Lynch (2009) and the essays in Pedersen and Wright (2013). There are further distinctions to be drawn between different forms of discourse pluralism. One kind says that there is a generic truth property applicable to truth bearers from all discourses, only that this property has different realizers; another denies that there is such a generic truth property and says that there only are the different truth properties, specific to different discourses. See, e.g., Lynch (2009) for discussion.

apt (for all tasks, or for some given task). This is goodness pluralism, regarding truth.

These two latter forms of truth pluralism are the most relevant in the context. Purpose pluralism regarding truth seems to me trivially correct for the same reason purpose pluralism regarding logic is. Assessment of goodness pluralism regarding truth faces the same problems as assessment of goodness pluralism regarding logic: what purpose?

Relating this back to appeal to truth-preservation, it presents complications for seeing the purpose of logic as codifying principles of truth-preservation, for we face the question of: preservation of truth *in what sense* of truth? This question seems about as difficult as our original question.

This point relating to truth and truth-preservation generalizes in an obvious way. For any way of spelling out a purpose of logic in terms of being or preserving some property F, one can ask: do we mean "F" in the ordinary sense, or do we mean "F" in the sense of the best "F"-predicate?

In his important (2009), Hartry Field centrally relates to normative questions having to do with epistemic goals when making a case for a form of logical pluralism. He says, "it isn't obvious that there need be a uniquely best logic for a given goal, much less that we should think of one logic as 'uniquely correct' in some goal-independent sense", suggesting both that a form of pluralism is vindicated if there is not a uniquely best logic for a given goal, and if there is no uniquely best logic in a goal-independent sense.[20] For Field, the pluralism is explicitly tied to an antirealism about epistemic normativity: a view on which there are no objective epistemically normative facts.[21]

The claims about there not being a "unique best logic for a given goal" and about there not being a logic that is correct "in some goal-independent sense" are obviously independent.

The former point is independent of any sort of antirealism about epistemic normativity. Normative antirealists of all stripes can agree that there are objective facts about what means bring about what goals, and how. Moreover, the talk about goals here invites exactly the same sorts of questions as those I have brought up regarding goodness pluralism. How might we identify some central epistemic goal for logic helpfully enough that one can have a sensible debate over which logic best meets?

Turn then to the second claim, about there not being a uniquely correct logic in a goal-independent sense. This may sound as if it gets at an interesting

[20] Field (2009), p. 356.
[21] Field (2009), p. 354.

monism/pluralism dispute: the monist affirms that there is uniquely correct logic in a goal-independent sense and the pluralist denies this, and this all is linked to whether one can be a realist about epistemic normativity or not. But there are complications. Suppose there are objective normative facts, including objective epistemically normative facts, contrary to Field's antirealism. This is not sufficient for Field's monist opponent: for different logics could have different positive epistemic property, in such a way that no logic is "uniquely correct". When speaking about what is uniquely correct, Field's monist opponent would have to also think that there is only one positive epistemically normative property and a unique logic has that, or perhaps that some positive epistemically normative property overrides all other such properties. In other words, the relevant opponent would have to have a rather extreme view. Mere realism about epistemic normativity does not cut it. A more reasonable monist opponent would only focus on whether there is a unique best logic for a given goal.

5. Discourse pluralism

One idea that has not yet come up in the present discussion is that of whether different logics are appropriate for different domains of inquiry. Perhaps there are different domains of inquiry such that where one logic is appropriate to that domain, another logic is appropriate to that domain. This is discourse pluralism regarding logic.[22]

One familiar way in which it could be held to be so is if classical logic is held by someone who is otherwise an intuitionist to be appropriate for when we are dealing only with what is guaranteed to be decidable, or held by someone who is otherwise a paraconsistentist to be appropriate for when we are dealing only with what is guaranteed to be consistent. But this, I take it is generally agreed, is not pluralism in any interesting sense: even logical monists agree that when one deals with certain restricted issues, a different logic could be adequate.[23]

So for appeal to different domains of inquiry to amount to an independent inroad into questions about logical pluralism, it must not simply be that one logic is the default logic and some other logic appropriate when we are dealing only with a restricted domain. The idea would have to be that different domains are simply *different* in such a way different logics are appropriate to them, but no logic has the status of default logic.

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[22] See, e.g., Bueno and Shalkowski (2009).
[23] Compare e.g. Field (2009), p. 244.

One may think that trivially some logic has that status, since the default logic could be held that obeys the principles, whichever they are, that hold in every domain. But if that "default logic" is too weak or gerrymandered, it can be retorted that it does not qualify as a logic. (One can easily see this degenerating into a debate about labels: where one theorist sees a very weak default logic, another sees an absence of default logic, and instead logical pluralism.)

A more fundamental question concerns what it is for a logic to be "appropriate" for a domain to begin with. And once we pay attention to this, then it is clear that the appeal to domains of inquiry does not amount to any theoretical progress. For the same questions can be asked now as before. One way (corresponding to concern with how our actual language works) for a logic to be appropriate to a domain is for it to be the one we actually employ when dealing with that domain of inquiry, or for it to be the logic of the fragment of our language which we employ when dealing with that domain of inquiry. Going down this route, we face the questions faced by the actual language project, and actual language pluralism. Another way for a logic to be appropriate to a domain is for it to be the *best* logic to use for that domain. If we ask this then we are engaged in the normative project.

6. The logic of the book of the world

We are looking for reasonable ways of construing the monism/pluralism debate, focusing on goodness pluralism as the most interesting form of pluralism. Are there constructive suggestions found in the literature?

One possibility – suggested by Ted Sider's (2011) discussion – is that there among the possible meanings there are, are some that are especially fundamental, or natural, or structural, or joint-carving, in something like the sense introduced by Lewis (1983, 1984) and later discussed e.g. by Sider himself. A debate over which logic is the right logic can be understood as one concerning which meanings for logical expressions (if any) have this privileged status, however it is best construed. This is a possibility, provided one accepts the underlying ideology. One apparent limitation of this way of construing the issue has to do with the fact that it lends itself more easily to capturing the question of whether Carnapian pluralism is true. Sider's view is that the fundamental language contains some logical expressions, but it does not contain metalogical expressions. Logical expressions are indispensable in a way that metalogical expressions are not.

I think that so long as the ideology of joint-carving is accepted, and expressions of the relevant kind can be joint-carving (one possibility is that only predicates are apt to carve at joints) – and I won't here attempt to weigh in on either

issue – Sider identifies one issue about which one can have a monism/pluralism debate.

It is a further question whether the possible debate Sider identifies really relates to the concerns that tend to animate philosophy of logic. In his discussion, Sider tentatively defends that it is the classical logical expressions are joint-carving. A consideration adduced in favor of this is that the phenomena that might push us away from classical logic – Sider primarily considers vagueness and the semantic paradoxes – centrally involve the use of expressions of a kind that, he thinks, we anyway will not have in the fundamental language. But this means that the way Sider thinks about what is the right logic – as the question of the logic of the fundamental language – involves setting aside such questions as those about the interaction between logical expressions and the truth predicate. This is not immediately a criticism. He may be right that some logical expressions are fundamental, but semantic expressions are not. The point remains that under these assumptions, the question of what the logic of the fundamental language is will be somewhat removed from the debates that logicians and philosophers of logic are engaged in.

7. Back to mapping pluralism

My discussion has been carried out against the background of mapping pluralism. I have urged that even if there can be reasonable debate about what possible languages there are, the claim that there is a plurality of languages with different logics (as per mapping pluralism of the Carnapian kind) or a variety of consequence relations (as per mapping pluralism of the Beall-Restall kind) should be completely uncontroversial.

Might this be resisted? Focus on Carnapian pluralism, and consider the following argument. Suppose my language is classical. Then insofar as I can make sense of languages with other logics I do so by translating the relevant expressions of other languages into my own. For example, I can understand the intuitionist's "p or q" as "p is provable or q is provable".[24] But logic is generally supposed to be *topic-neutral*, and given the translation of the intuitionist's language into my language, the intuitionist's supposed logical truths are about something specific, namely the provability of propositions.[25]

The conclusion of this piece of reasoning is that even if there is something like an "intuitionist language", the "intuitionistic logical expressions" of this language are

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[24] With intuitionism understood the way standard since Heyting. See van Atten (2009).
[25] There are good questions about how best to understand topic-neutrality. I will raise independent questions about the argument here presented: for our purposes we can assume for argument's sake that what is assumed about failure of topic-neutrality is correct.

not properly logical, for they fail the criterion of topic-neutrality. Insofar as the reasoning can be generalized, it could be used to yield the conclusion that although there is a plethora of possible languages, only languages of one kind – e.g. classical languages – contain logical expressions that genuinely are logical. And so mapping pluralism is false.

The reasoning just presented obviously relies on promissory notes, for example that what goes for intuitionism generalizes in the way needed for the argument to work. But suppose for argument's sake that these pieces of speculation are correct.

A limitation of this argument is that it seems to work only regarding Carnapian mapping pluralism; Beall-Restall mapping pluralism remains unscathed. Still, what it says about Carnapian pluralism may be of interest.

One response to the argument is: Even if the only translation of the connectives of some non-classical language into some given kind of classical language involves translating them in such a way that topic-neutrality is not preserved, can one not envisage a language with both classical and non-classical connectives? In general, can one no take the alien connectives at face value (and resist any suggestion that a translation abandoning topic-neutrality is faithful to the meanings of the alien connectives, even if extensionally correct)?[26]

Another response, similar in spirit, is to say that while it is true that any translation of the alien connectives into my actual language involves taking them not to be topic-neutral, I can fully well recognize that the same goes for any translation of my connectives into the alien language: so there is no neutral way of assessing different connectives for topic-neutrality.

A quite different concern about mapping pluralism takes as its point of departure the observation that the discussion of, and motivation of, mapping pluralism above was a bit careless. It was urged above that various purported solutions to the liar paradox may accurately describe certain possible languages, whether or not they correctly model our actual language. But what exactly is the content of that claim? Distinguish between two different sorts of claims that could be made on behalf of an, in some sense, dialetheist language. One is that the language (supposed in other respects to be like English) functions in such a way that some sentences of the form "p and not p" are true, and some sentences of the form "p is true and p is false" are true. Another claim is that the language contains sentences

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[26] In the specific case of intuitionism, there is the Harris argument which on the face of it seems to rule out that there can be a language with both classical and intuitionistic connectives. See Harris (1982). Even if this is so, this in the first instance only applies in the case of intuitionism.

that are both true and false. The former claim is rather more innocuous than the latter. Indeed, if our actual language is not dialetheist, it seems that there is no way we could correctly make the latter claim about any possible language.

As against my contention that mapping pluralism is trivial, it could be objected that so long as only the innocuous, former kind of claim holds of the possible supposed dialetheist languages, there is a clear sense in which no language really is dialetheist. Moreover, the point generalizes beyond dialetheism. Assuming our language is classical, the same goes for any other kind of supposed possible non-classical language.

But while these reflections show that one must be more careful about the nature of the possible languages there are – and that the above considerations in favor of mapping pluralism are way too quick – there is a limit to how much they show. Even if the possible supposedly dialetheist language does not contain sentences that are both true and false, in *our* sense of "true" and "false", it can still contain sentences that are both "true" and "false", where the "true" and "false" used are alternative concepts of truth and falsity. Compare above remarks relating to pluralism about truth. It could of course be that our actual notions of truth and falsity in some sense are the only possible notions of truth and falsity that there are, or that they are along some crucial dimension better than other possible notions of truth and falsity. But barring that, a possible dialetheist language could contain sentences that are both "true and false", not in our sense of "true and false" but in the sense of some other, equally worthy notions of truth and falsity. Questions like these are hard to make passably clear. But unclear though such questions may be, it seems like such questions cannot be simply evaded in debates over logical pluralism. They come up in connection with goodness pluralism, and they come up in connection with mapping pluralism.

8. Once again, more generally

I have focused on philosophy of logic, and the specific issue of logical pluralism. A number of distinctions have been drawn, and perhaps the most important is that between the actual language project and the normative project. Once this distinction is clearly drawn, questions relating to the normative project seem more worthy of philosophical attention. But with the normative project clearly in focus we have to ask questions like: best logic for what purpose? best truth predicate for what purpose? These questions are difficult and underexplored. I have here been concerned to emphasize the difficulties.

Logical pluralism – my explicit topic – is a contentious doctrine. But the

problems regarding making sense of logical pluralism are equally problems regarding making sense of logical monism.

Moreover, the issues are in fact very general. The distinction between the actual language project and the normative project is general and has nothing to do with logic or truth. Questions like those I have raised can be raised in many areas of philosophy. Many philosophical questions are *what is the nature of X* questions. And with respect to these questions issues like the above arise. Take knowledge as an example. We use some notion of knowledge. The philosophical question *what is the nature of knowledge?* is often in effect construed as: what is (the relation picked out by) our concept of knowledge. That is a kind of actual-language question. One may reasonably be somewhat skeptical of its significance: what is so philosophically significant about the concepts we happen to employ and what they pick out. It cannot be blithely assumed that the actual concept of knowledge happens to be the best to use for the purposes to which it is put? Maybe there is a concept *knowledge** that is in the relevant sense better. But then questions about how best to construe this normative question arise. Preferable in what respect? Perhaps *epistemically* preferable. But what does this mean? I won't get into what may be said about this. Maybe there are satisfactory answers. The suggestion is not that the issues will play out in the same way in the different cases – or that the questions raised will be equally problematic in all cases – but only that the same sorts of issues arise.

REFERENCES

Beall, JC and Greg Restall: 2001, "Defending Logical Pluralism", in Bryson Brown and John Woods (eds.), *Logical Consequence: Rival Approaches*, Hermes, Stanmore, pp. 1-22.

Beall, JC and Greg Restall: 2006, *Logical Pluralism*, Oxford University Press, Oxford.

Bueno, Otavio and Scott Shalkowski: 2009, "Modalism and Logical Pluralism", *Mind* 118: 295-321.

Carnap, Rudolf: 1934, *Logische Syntax der Sprache*, Julius Springer, Wien. English translation *Logical Syntax of Language*, London: K. Paul, Trench, Trubner & Co. (1937).

Carnap, Rudolf: 1963, "Kaplan on Value Judgments", in P.A. Schilpp (ed.), *The Philosophy of Rudolf Carnap*, Open Court, La Salle, Illinois, pp. 999-1013.

Cook, Roy: 2010, "Let a Thousand Flowers Bloom: A Tour of Logical Pluralism", *Philosophy Compass* 5: 492-504.

Dummett, Michael: 1975, "The Philosophical Basis of Intuitionistic Logic", in H.E. Rose and J.C. Shepherdson (eds.), *Logic Colloquium '73 Proceedings of the Logic Colloquium*, vol. 80 of *Studies in Logic and the Foundations of Mathematics*, North Holland, Amsterdam, pp. 5– 40.

Field, Hartry: 2009, "Pluralism in Logic", *Review of Symbolic Logic* 2: 342-59.

Field, Hartry: 2015, "What is Logical Validity?", in Colin Caret and Ole Thomassen Hjortland (eds.), *Foundations of Logical Consequence*, Oxford University Press, Oxford, pp. 33-70.

Glanzberg, Michael: 2001, "The Liar in Context", *Philosophical Studies* 103: 217-51.

Gupta, Anil and Nuel Belnap: 1993, *The Revision Theory of Truth*, MIT Press, Cambridge, MA.

Harris, J.H.: 1982, "What's so Logical About the "Logical" Axioms", *Studia Logica* 41: 159-71.

Hjortland, Ole Thomassen: 2017, "Anti-Exceptionalism About Logic", *Philosophical Studies* 174: 631-58.

Lewis, David: 1983, "New Work For a Theory of Universals", *Australasian Journal of Philosophy* 61: 343-77.

Lewis, David: 1984, "Putnam's Paradox", *Australasian Journal of Philosophy* 62: 221-36.

Lynch, Michael: 2009, *Truth as One and Many*, Oxford University Press, Oxford.

Pedersen, Nikolaj and Cory Wright (eds.): 2013, *Truth and Pluralism: Current Debates*, Oxford University Press, Oxford.

Priest, Graham: 2006, "Logical Pluralism", in *Doubt Truth To Be a Liar*, Oxford University Press, Oxford, pp. 194-210.

Restall, Greg: 2002, "Carnap's Tolerance, Language Change and Logical Pluralism", *Journal of Philosophy* 99: 426-43.

Russell, Gillian: 2013, "Logical Pluralism", in Ed Zalta (ed.), *Stanford Encyclopedia of Philosophy*, http://plato.stanford.edu/entries/logical-pluralism/.

Shapiro, Stewart: 2014, *Varieties of Logic*, Oxford University Press, Oxford.

Sider, Ted: 2011, *Writing the Book of the World*, Oxford University Press, Oxford.

van Atten, Mark: 2009, "The Development of Intuitionistic Logic", in Ed Zalta (ed.), *Stanford Encyclopedia of Philosophy*, https://plato.stanford.edu/entries/intuitionistic-logic-development/.

Williamson, Timothy: 2013, *Modal Logic as Metaphysics*, Oxford University Press, Oxford.

Williamson, Timothy: forthcoming, "Semantic Paradoxes and Abductive Methodology", in Bradley Armour-Garb (ed.), *Reflections on the Liar*, Oxford University Press, Oxford.

Wright, Crispin: 1992, *Truth and Objectivity*, Harvard University Press, Cambridge, Massachusetts.