What Is Logical Pluralism?

Manuel Bremer
University of Düsseldorf, Germany

www.mbph.de
Introduction

- Within the philosophy of logic there has been an old debate about strengths and weaknesses of so-called ‘deviant‘ logics, as compared to standard logic. With the development of a multitude of many-valued and modal logical systems and the various ways they can be employed in various fields of philosophy, linguistics and computer science, former “deviant” logics have become well accepted.

- Nowadays we seem to have a new and almost contrary debate about whether there is any universal logic at all or only a multitude of systems: logical pluralism. But what does logical pluralism claim? In this paper one prominent version of logical pluralism is the main target of further questions. Greg Restall’s and J.C. Beall’s pluralism defends both standard and non-standard logics.
Content

- some short remarks on the contrasting idea: universalism

• Part 1. What Logical Pluralism Better Not Be To Be of Interest (a.k.a. “the in some parts almost clear part”)

• Part 2. Inquiries into Restall’s and Beall’s Logical Pluralism (a.k.a. “the in most parts less than clear part”)
The Alternative to Pluralism: Conceptions of Universal Logic

- As a rough sketch of the contrasting position sometimes appealed to:
- From the point of view of some versions of philosophy (e.g. ‘transcendental philosophy’) universalism is often taken as the outmost generality of philosophical theories (of language in general, mind in general, knowledge in general and the ‘conditions of their possibility’).
- Roughly: The mind of a person has a structure and philosophy (maybe in a wide reflective equilibrium with the cognitive sciences) re-constructs this structure [some kind of realism about the structure of the mind]. This structure exhibits some features (like: conscious intentionality, temporal duration), involves concepts (like: Causality or Subject-of-conscious-acts), and basic rules/norms (like: providing theories with at least prima facie justifications, and: logic [a one, not many]).
Conceptions of Universal Logic (II)

- Philosophy of this kind needs the logical means to speak universally. Thus philosophy needs a universal logic (i.e. a logic to speak about any topic in general, especially, it seems, about the language one is just using). This logic (because of the prima facie inconsistency of semantically closed languages) supposedly has to be a paraconsistent logic of some kind.

- There are two readings of having a universal logic: weak universal logic and strong universal logic.

- A universal logic might be universal as a paraconsistent logic, i.e. in all fields in which we need a paraconsistent logic.

- Or a truly universal logic can be employed everywhere, supposedly containing a way to distinguish consistent from inconsistent contexts, without loss of proper logical power in comparison to First Order Logic. This may be called the strong universalist program. [found e.g. with Adaptive Logics, LFI-systems, Brady's Relevant logic MC/DJdQ...]

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What Is Logical Pluralism?
General Problems with Logical Pluralism

• Before proceeding to specific proposals for Logical Pluralism several misunderstandings of “Logical Pluralism” have to be held at bay.
• I do not claim that Restall/Beall fall prey to these understandings.
• I suppose the rejection of these (mis-)understandings of Logical Pluralism to be rather uncontroversial, I hope.
• Anyway, if Logical Pluralism meant anything of what is to come now, it is dead born.
General Problems with Logical Pluralism (II)

- If pluralism just means that there are several logical systems, and one may use some specific system of some specific purpose this is compatible with the claim that there is the logic of universal discourse. The many logics may be used where appropriate, and their mere existence has no deeper philosophical impact than the observation that given a specific purpose at hand one may abstract from a lot of things.

- If someone were to say – Restall/Beall-style – that she is a pluralist just because of the parameter $x$ in:

  $$(\text{VAL}) \text{ A sentence is valid}_x \text{ iff that sentence is true in all models}_x.$$  

This would be an appalling case of wrong advertising as models of PC are in no conflict or competition with models of FOL. The mere existence of both PC and FOL does not establish Logical Pluralism in any interesting sense; neither does the existence of PC and modal (propositional) logic.
General Problems with Logical Pluralism (III)

- Some so called ‘deviant logic’ should not be understood as showing that what Negation is is up for grasp, or that there is no real negation. We are free to invent new symbols for new negation related functions, but by this we neither bring a new negation into the world or bring standard negation out of it. There just are a set of truth functional options in the vicinity of standard negation. Deciding to call some other of these “negation” using “¬” does not change Negation, it changes the meaning of some symbols.

- There is no ‘truth by convention’ in the sense that merely stipulating some axioms makes the involved symbols true of the world; giving badly enough chosen axioms these may not be true of the world, or at least not in the intended sense. So one cannot change Negation by fiat. What Negation really is may be a tough question. The whole discussion about negation presupposes that there is some central truth function these different logics try to pin down.
General Problems with Logical Pluralism (IV)

- If pluralism means that there cannot be a *unique* system of universal logic (that is the one best system of doing universal logic) this seems to be a *version of relativism* (and fares no better than relativism fares with respect to any other scientific field).

- Not much better then relativism is what might be called “abstractivism”. Abstracting away from features everything starts to resemble every other thing. In our case: abstracting away from the features of some formal system makes several of them look like ‘spelling out consequence in different ways’. But this is at best insubstantial and usually misleading. Compare: humans communicate and some claim that we ‘communicate’ with automatic doors, obviously everything that is crucial about human communication by language is lost in this abstraction.
General Problems with Logical Pluralism (V)

- Of course one may invent any ‘logic’ one likes as a formal system. This has no impact on the discovery of the logic built into human cognition. One should be a realist not a (semantic) idealist about the existence of logic.

- One understanding of Carnap’s slogan ‘to plan languages’ and his ‘principle of tolerance’ may see Carnap as advocating complete instrumentalism and relativism with respect to linguistic frameworks (cf. Carnap 1933). Extreme conventionalism fails in fixing the set of (proper) logical truths: If a semantic idealist (claiming that truth can be generated by convention) believes that any convention can do, he is subject to the famous “tonk”-counterexample of absurd rules for introducing and eliminating logical connectives. An “or”-like introduction rule with an “and”-like elimination-rule yields “A∧¬A” even for consistent statements A.

- [By the way: notwithstanding his disagreement: Carnap is a kind of idealist]
Some Proposals on Logical Pluralism

• In the last two decades (before Beall's and Restall's book) some general proposals have been put forth for logical pluralism.

• They fail, however, either by neglecting the general criticism just considered or outlining their pluralism in a fashion that is compatible with logical universalism. [I omit discussing them on this occasion (cf Bremer 2007).]
Beall's and Restall's Logical Pluralism

- In the main part I will consider several problems that might be directed at the most comprehensive argumentation for Logical Pluralism so far given:
J.C. Beall and Greg Restall have with their recent book *Logical Pluralism* elaborated on their previous statements on logical pluralism. Their more recent view of logical pluralism as centred on ways of understanding logical consequence may also be criticised, but foremost it seems not at all clear what exactly the doctrine of logical pluralism as opposed to logical monism is supposed to be.

Further on one may question the central arguments given for this supposed logical pluralism.

The main part of this essay therefore tries to come to grips with their doctrine of logical pluralism by highlighting some points that might be made clearer and questioning the force of some of Beall’s and Restall’s central arguments.
A Word of Caution

• I have to confess that maybe my points all suffer from a common defect: I have not grasped what Restall and Beall are up to (somebody else may have).

• For instance: Concerning PC and Relevant treatment of the validity of *ex contradicione quodlibet* they say:

• ‘The upshot: provided that each of the noted sense of “validity” corresponds to an admissible instance of GTT, there are at least two relations of logical consequence (in English), and so logical pluralism follows.’

• What does this say? I do not know! If it says that we *understand* two concepts of consequence, then I agree; but this is irrelevant for their thesis: we *understand* all kinds of bizarre fiction, so what? If it says that speakers of a natural language have at the same time two *incompatible* understandings of logical consequence, then I strongly disagree, and again I do not see that the mere existence of two logical systems has any relation to their point about the *faculties* of natural language speakers.
1. The Common Core Problem: The ‘Obvious Reply’

- Pluralism is said to be different from relativism. So one may not apply the standard reply ‘What about the truth of the claim of relativism?’, but there is a similar problem with logical pluralism. Logical Pluralism is put forth as a claim that is true. All those who are not immediately convinced of the claim by merely understanding it have to be convinced by arguments. These arguments have to be valid, correct and convincing in some sense. What sense is that? It supposedly has to be a sense of convincing valid argument that can be directed at (is understood by) any audience whatsoever. Thus it seems to use the common core of accepted argumentative standards, whatever other logical preferences the different audiences may have. Thus it seems to be the intersection of different (applied) systems of reasoning. That would be some kind of common core logic. There would be nothing pluralistic about this common core. And if the common core is not strong enough it does not deliver the arguments needed to convince everybody of logical pluralism. A strange dilemma for the logical pluralist, it seems.
2. The Formal Common Core Problem

- Further on, logical pluralism is formulated in some language. This language has to be well-defined. Logical pluralism has to be true (simpliciter). The theory language of logical pluralism (the language used as a meta-language when talking about the different ways to spell out being logical) has a logical form. Whatever else may be vague in a language, a sentence has at a given level of specification (say Categorical Grammar vs. First Order Logic vs. Propositional Temporal Logic) one and only one most articulate logical form. At the most comprehensive level (the level which takes all structural elements into account) there is one complex logical form. Given the possession of logical form, some particles/words may be singled out as ‘logical vocabulary’. Thus the theory language of logical pluralism provides us with a logic, namely the logic that goes with its logical vocabulary.
3. The Superior Judge Problem

- Beall and Restall on several occasions claim ‘that there is more than one relation of logical consequence’. These different relations of logical consequence have to disagree on some consequences. Which one them has the last word? In their version of logical pluralism standard logic is only restricted by the other contestants. The three candidates stand in sub/super-logic relations to each other. Is this accidental or are intuitionistic and relevant consequence nothing more than occasional restrictions of the one true logic? In one case of logic clash (discussing Priest’s slippery slope towards dialetheism) standard logic seems to have the last word. The slippery slope towards dialetheism is blocked by invoking ex contradictione quodlibet, but that is the very rule that Priest attacked. If different acceptable logics give different verdicts on what is valid with respect to some field of application much depends on arguments which logic should be applied there. How can we – pluralists! – know the nature of a field of application independently and before we know which logic applies here?
4. The Problem of the Conditional

- Restall and Beall define logical pluralism relative to the *Generalized Tarski Thesis* (GTT) An argument is valid if and only if, in every case in which the premises are true, so is the conclusion.
- Open for a pluralistic treatment, according to Restall and Beall, is the specification of the “cases”. Why only the cases?
- One might argue that (GTT) settles quite a lot by the occurrence of a (bi-) conditional in it. How is the “if” in (GTT) to be understood? In its typical reading (GTT) supports irrelevant consequence statements like *ex contradictione quodlibet*: In case the premises are not true the conclusion need not be true, and thus the argument is considered valid. Such arguments, however, are irrelevant (in the technical sense) and the very arguments to be avoided in paraconsistent logics
4. The Problem of the Conditional (II)

• So one may consider a paraconsistent definition of consequence that reads: (UL4) \[ \Gamma \models A \iff \text{there are models such that all } B \in \Gamma \text{ are true at least, and in case that all } B \in \Gamma \text{ are true at least in a model, then } A \text{ is true at least in that model.} \]

• This definition tries to pin down a reading of “if”, or “in case” respectively, that explicitly excludes the irrelevant instances of a definition of “consequence” (cf. Bremer 2005 on UL4).

• One may doubt whether this is a good or successful move to make for a logical monist or a paraconsistent logician. One may have doubts about paraconsistency in general. Concerning logical pluralism, however, we need another argument why the “if” in (GTT) is save from this kind of controversy or pluralism. Keeping the meta-language, in which (GTT) resides, apart from some applied logic does not sit well with Beall’s and Restall’s mutual preferences for Relevant Logics.
5. The Problem of an Unsettled Concept of Consequence

- Restall and Beall draw an analogy to the *Church-Turing-Thesis* (CTT). The two cases do not have that much in common. According to the (CTT) there is *exactly one intuitive concept of computability* and *Turing-computability* (or recursive functions) spell it out in an exact fashion. The very point of justifying (CTT) is that the different concepts of formal computability that came up with the years (abacus machines, lambda functions ..) are all equivalent. They are *not* different ways to make the intuitive concept precise, in the sense that they agree on which functions are computable and in the sense that each can be translated into the other without loss of computability. If these explications of computability were not equivalent that would be a reason to claim that our intuitive notion of computability is not consistent. In that case one may suppose that the intuitive notion became substituted by one of the technical notions.
5. The Problem of an Unsettled Concept of Consequence (II)

- And if Beall and Restall claim that the different logics are not to be understood ‘to be rival analyses of the one fundamental notion’ this may be taken either as denying the existence of such a fundamental notion – what they do not have in mind – or as denying that there is something beyond technical advantages that singles out one of them.

- If our ‘unsettled notion’ of logical consequence does not do the settling of the right logic we have to turn to some other notions (maybe those of simplicity, general usability ...) to settle the matter. If these notions like general usability or simplicity have a claim to be (meta-)logical concepts themselves, why can’t we use them to decide the matter of the proper logic?

- [By the way: If the analogy to CTT is not good, the second analogy (different kinds of necessity) is even worse, cf. the first part of the talk]
6. The Methodological Problem

• Is logical pluralism an \textit{a priori} or an empirical claim?
• If it is an \textit{a priori} claim what is its justification beyond the supposed fact that (GTT) allows for more than one way to fill in the details? We seem to need an argument why there is nothing beyond (GTT).
• If logical pluralism is an empirical claim one has to consider questions whether some logic is appropriate in capturing our informal and not formalized ways of argument/reasoning. With respect to our intuitive concept of reasoning and logical consequence one can ask whether some logic is (i) \textit{correct} w.r.t. intuitive reasoning (ii) \textit{complete} w.r.t. intuitive reasoning. As in other fields of logical reconstruction where one aims for a \textit{wide reflective equilibrium} between our intuitive judgements, rule systems to reconstruct our intuitive reasoning, and further knowledge about our cognitive architecture one would have to sample a lot of evaluations of different supposed arguments and ways of reasoning. Studies of this kind are missing in Beall’s and Restall’s presentation of logical pluralism.
7. The General Logical Form Problem

• Further on, how can it be that there are parts of logic or our concept of argument which are ‘not settled’? One may wonder what (evolutionary) explanation might be given for this. Linguists of the transformational camp claim that we have a highly specified innately fixed module for language acquisition, which comes with principles the parameters of which are the only elements left to be settled by regional languages. With respect to our ordinary talking and thinking there is no unsettled part of our grammatical assessment of sentences. Why should logic have come apart from language? This is even more questionable since language employs a level of logical form (in processing mental representations and at the interfaces to other mental modules). This level of logical form (LF) is highly constrained by both internal constraints of syntax (like Government) and external constraints of semantics (like providing the structure for employing the quantificational truth conditions). There is overwhelming empirical evidence for this level of structured descriptions.
8. The Problem of Semantic Unity

- Beyond logical pluralism Beall and Restall hint at the possibility of being a ‘semantic pluralist’. This seems even more unnatural than logical pluralism. How could it be that someone without being confused in applying words can consider several theories (of meaning of his language) to be ‘equally illuminating and acceptable (but different)’? The spectre of relativism raises its head again here. To avoid relativism Beall and Restall have to accept some form of complementarism. If Beall and Restall claim that the two semantic understandings of negation can be ‘equally accurate ... in virtue of being incomplete claims’ about our world (or negation) that can only mean that by being incomplete and not antagonistic they can be united. And if our world is of a nature that allows for the unification of several incomplete accounts of, say, negation that very world rather looks pretty more non-standard than classical. (Beall and Restall can save their day by considering only logics that have standard logic as their limit.)
Conclusion

• The main aim of this paper has been to put forth questions to the logical pluralists. So it may be too early to rush to a conclusion.
• On the other hand, it seems, that the case for logical pluralism is far from clear.
• It is even unclear what exactly logical pluralism is and where it stops.
• It is even unclear if logical pluralism could be stated as it is if it was true.

• So far – and for the philosophical reasons alluded to in – universalism seems to be the better position to take.
References