JC Beall and Greg Restall
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REVIEW

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The 20th century saw the rapid development of logic. At the same time, we saw the blossoming of (systems of) logics. Not only classical logic but also non-classical logics, such as intuitionistic logic and relevant logics (to name just a few), were all developed in that period. JC Beall and Greg Restall, in their *Logical Pluralism*, attempt to make sense of the plurality of logics. In presenting their logical pluralism, they argue that the logics mentioned above all equally deserve the title 'logic'. Beall and Restall not only argue for logical pluralism but also provide many important insights on fundamental issues in logic.

Beall and Restall (B&R) take *logical consequence* to be the chief subject matter of logic. Logical consequence is a relation among claims expressed in a language: what claims follow from what claims. B&R analyse it in terms of the Generalised Tarski Thesis (GTT):

> An argument is valid$_x$ if and only if, in every case$_x$ in which the premises are true, so is the conclusion. (p. 29)

GTT is a generalisation of Tarski's notion of logical consequence: 'The sentence X *follows logically* from the sentences of the class K if and only if every model of the class K is also a model of the sentence X' (quoted in p. 29).

B&R's logical pluralism can now be captured by the following conditions:

(1) The settled core of *consequence* is given in GTT.
(2) An instance of GTT is obtained by a *specification of the cases$_x$* in GTT, and a specification of the relation *is true in a case*. Such a specification can be seen as a way of spelling out *truth conditions*.

(3) An instance of GTT is *admissible* if it satisfies the settled role of consequence, and if its judgments about consequence are necessary, normative, and formal.

(4) A *logic* is given by an admissible instance of GTT.

(5) There are *at least two* different admissible instances of GTT. (p. 35)

The upshot of B&R's logical pluralism is condition 5, according to which there is more than one correct answer to the validity of some arguments. Their argument for 5 proceeds essentially by providing at least two (in fact four) instances of GTT and showing that they are all admissible. They provide *possible worlds*, *Tarskian models*, *stages* (in a process of proof construction) and *situations* as specifications of cases$_x$ each of which giving rise to necessary truth-preservation, classical, intuitionistic and relevant accounts of validity respectively. They argue that all of them are admissible instances of GTT.

After presenting their argument for logical pluralism, B&R consider a number of objections, some of which are actual objections (*i.e.*, those that were raised by readers of the drafts) and some of which are possible objections. They examine them carefully and respond to them skillfully. Most, if not all, objections turn on the view itself, *viz.*, that more than one logic should be accepted as logic. In this review, I don't offer yet another objection to their view as such. Instead, I examine B&R's argument for their view. That is, putting aside the question of whether or not logical pluralism is a defensible position in the final analysis, I hope to show that their argument is problematic.

My focus is on condition 3 of B&R's logical pluralism and their arguments to show that Tarskian models, for instance, result in an admissible instance of GTT. I am particularly interested in the second clause which invokes necessity, normativity and formality as necessary conditions of admissibility. To narrow down my focus even further, I consider formality. B&R claim that there are four senses of formality as applied to logic:

SCHEMATIC FORMALITY: logic categorises forms rather than concrete arguments, for example, by logical connectives.

1-FORMALITY: logic provides constitutive norms for thought as such.

2-FORMALITY: logic is indifferent to the particular identities of objects.

3-FORMALITY: logic abstracts entirely from the *semantic content* of thought. (pp. 18ff)

1-3-formalities are provided by MacFarlane (2000) and B&R rely on his distinction.

The problem is that in trying to show that the Tarskian instance of GTT, for example, is admissible, B&R fail to show that it satisfies 1-3-formalities as defined above. First, historically, 1-formality was devised by Kant who also argued that 1-formality entails 3-formality. Frege rejected Kant's inference and rejected 3-formality as a characteristic of logic. (See MacFarlane (2000) and MacFarlane (2002).) 2-formality was essentially the upshot of Tarski's attempt to define logical constants as permutation invariants. Tarski's attempt was made possible by schematically (by means of logical constants) representing the forms of arguments. B&R need to analyse different senses of formality with a historical sensitivity. They are, after all, employing the Kantian-Fregean notions in an essentially Tarskian project. As I will show below, their lack of historical sensitivity poses problems.

Second, condition 3 of B&R's logical pluralism states:

3. An instance of GTT is *admissible* if it satisfies the settled role of consequence, and if its judgments about consequence are necessary, normative, and formal.

It is not consequence itself but the judgments about it that is said to be, among other things, formal. According to Kant and Frege, thought, in so far as it counts as thought, is constituted by norms provided by consequence (to use a Tarskian terminology). It is norms provided by consequence that make judgments possible, giving rise to thought. To put it succinctly, it is the judgment itself that is constituted by consequence. A judgment *about* consequence is not what Kant and Frege had in mind when they characterised formality of logic in terms of 1-formality. To show that judgments about consequence are formal is not to show that 1-formality is satisfied.

Third, B&R reduce 1-formality to the claim that '*all* propositional content can be operated on by means of these propositional connectives [*viz.*, conjunction, disjunction and negation]' (p. 21). Defined in this way, 1-formality relies on schematic formality where a scheme is conceived of in terms of propositional connectives. By showing that the above claim is satisfied, hence, B&R have shown only that schematic formality is satisfied and have failed to show that 1-formality, as defined above, is satisfied. Also, given that 3-formality is tied to 1-formality (from Kant's point of view), 3-formality is also derivative of schematic formality.

The crux of the problems is that B&R have a Tarskian project that tries to show that instantiations of cases$_x$ with Tarskian models, possible worlds and so on in GTT are all admissible while the justification of the admissibility appeals to non-Tarskian notions. One can interpret

these notions from a Tarskian point of view. However, one must be very careful in so doing. My third comment above indicates that what B&R have shown is only that each instance of GTT is schematically formal. Providing a set of truth conditions as a way of specifying an instance of GTT is to show just that the instance is schematically formal (in terms of logical connectives). In this way, condition 3 of B&R's logical pluralism collapses into condition 2, *i.e.*, it shows only that a schematic specification of the cases$_x$ is given. If one wishes to show that an instance is admissible, one must demonstrate more than that an instance of GTT is obtained by specifying the cases$_x$ in GTT.

The problems presented above should not be seen as cancelling the valuable insights that B&R are able to advance in their book. *Logical Pluralism* will, I am sure, provide logicians and philosophers of logic with seeds for important debates for many years to come.

References

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