Rivalry, Normativity, and the Collapse of Logical Pluralism*

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Abstract Logical pluralism is the view that there is more than one correct logic. This very general characterization gives rise to a whole family of positions. I argue that not all of them are stable. The main argument in the paper is inspired by considerations in Keefe (2014), Priest (2006a), Read (2006), and Williamson (1988), and it aims at the most popular form of logical pluralism advocated by Beall and Restall (2000, 2006). I argue that there is a more general argument available that challenges all variants of logical pluralism that meet the following three conditions: (i) that there are at least two correct logical systems characterized in terms of different consequence relations, (ii) that there is some sort of rivalry among the correct logics, and (iii) that logical consequence is normative. The hypothesis I argue for amounts to what Caret (2016) calls a 'collapse problem' in form the of a conditional claim: *If* a position satisfies all these conditions, *then* that position is unstable in the sense that it collapses into competing positions.

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1 What is logical pluralism?

Logical pluralism is not one articulated view but a whole family of positions that are united by the *plurality thesis,* according to which there is more than one correct logic. But what is a logic and what does it mean to say that there is a plurality of correct ones?

It is not at all trivial to delineate logic precisely. For the purposes of this paper, however, it will suffice to follow Roy Cook's (2010, 493) definition: Let a logic be any pair $< \mathcal{L}, \Rightarrow >$, where $\mathcal{L}$ is a formal language consisting of a nonempty set of primitive symbols and a set of (recursive) formation rules and $\Rightarrow$ is a formal consequence relation holding between a set of statements from $\mathcal{L}$ and a statement from $\mathcal{L}$. This definitions permits a variety of implementations of the plurality thesis. By allowing different languages $\mathcal{L}_n$ and $\mathcal{L}_m$ and different consequence relations $\Rightarrow_x$ and $\Rightarrow_y$ we get at least the following combinations: $(i) < \mathcal{L}_n, \Rightarrow_x >$ and $< \mathcal{L}_m, \Rightarrow_x >$, i.e. different languages with the same consequence relation[1]; $(ii) < \mathcal{L}_n, \Rightarrow_x >$ and $< \mathcal{L}_n, \Rightarrow_y >$, i.e. different consequence relations within the same language; $(iii) < \mathcal{L}_n, \Rightarrow_x >$ and $< \mathcal{L}_m, \Rightarrow_y >$, i.e. different languages with different consequence relations. In each case we would have at least two different logics, given that $n \neq m$ or $x \neq y$.

In its general form, the plurality thesis is an element of Carnapian pluralism (Carnap 1937, Restall 2002), of full-fledged logical relativism (Varzi 2002), of 'logic-as-modelling' views (Cook 2010, Shapiro 2014b) as well as of truth-bearer pluralism (Russell 2008), 'intra-theoretical' pluralism (Hjortland 2013), contextualism about logical consequence (Caret 2016) and possibly of quite a number of other views, depending on how the notions of 'logic' and 'correctness' are spelled out.[2] It is also essential to the subset of pluralist positions to be discussed here, namely the views advocated by Susan Haack (1978) or JC

[1] In the case of option (i), the consequence relation in question can only be 'the same' if we do not think of its identity conditions in terms of co-extensionality. The sameness in question here could make sense, however, if we understood it in other terms, for instance as a definition in the meta-language. This complication does not arise for the other two options. Thus, if one prefers the extensional reading of the 'different languages, different logics' view, one should go for option (iii).

[2] While I consider Russell's and Hjortland's, and Caret's positions to be variants of option (ii), the other views can plausibly be understood as versions of options (i) or (iii).

Beall and Greg Restall (2000, 2006).

2 Global Consequence Pluralism

The distinction between options (*i*)–(*iii*) in § 1 allows us to sharpen the more specific version of the plurality thesis I am concerned with in this paper, namely option (*ii*), pluralism about logical consequence within one given language. This commitment is at least compatible with Haack's 'global logical pluralism' (1978, 231-232) and it is explicitly endorsed by Beall and Restall, who claim "that there is more than one genuine deductive consequence relation, and that this plurality arises not merely because there are different languages, but rather arises even *within* the kinds of claims expressed in the one language" (Beall and Restall 2006, 5). One upshot of this is that the kind of pluralism in question is able to accommodate opposing judgments about whether a single argument is valid (cf. Restall 2002, Russell 2008). It is a pluralism about logical consequence, not about languages.

In addition to the sharpened plurality thesis, the positions I am interested in endorse a number of further claims. Taken together they amount to what I propose to call *Global Consequence Pluralism*[3]:

(1) Hallmarks of *Global Consequence Pluralism* (GCP)

   a. There is *more than one* correct logical consequence relation within one language.

   b. Logical consequence is *global* in scope.

   c. There is *rivalry* between different correct consequence relations.

   d. Logical consequence is *normative*.

Some clarifications are needed in order to get a better grip on the positions in question.

[3]The terminology is inspired by Haack's 'global logical pluralism' (1978, 223). Her characterization is slightly less demanding than the one I give in (1), but similar in spirit.

In the very minimal sense of options (*i*)–(*iii*) above, the plurality thesis is obviously true. There are, in fact, many different formal systems that fit each of these options. However, combined with some constraints on the language $\mathcal{L}$ (1a) amounts to a philosophically interesting thesis due to the notion of *correctness*.

Following Haack, the way I propose to understand *correctness* relies on a distinction between system-relative and extra-systematic validity. The idea is that a logical system is *correct* just in case the formal arguments valid in the system correspond to informal arguments which are valid in an extra-systematic sense (Haack 1978, 222). This is still fairly neutral. It leaves plenty of room to spell out details about what kind of extra-systematic validity is in play and what the notion of correspondence amounts to. My preferred way to think of this is in terms of the distinction between *pure* logic and *applied* logic (see e.g. Priest 2006a, 195), where a pure logic is just a well-defined mathematical structure with a proof-theory or model theory, while an applied logic is an interpreted pure logic such that its well-formed sentences refer to some area of discourse. Priest thinks that the canonical application of logic is to reasoning. One might also think that a pure logic can fruitfully be applied to natural language or one of its fragments, to Platonic ideas, or to scientific theories. In any of these cases Haack's conception of correctness is applicable: the pure logic gives us system-relative validity, the area of application provides the notion of extra-systematic validity.

Further, constraints on the logical vocabulary of $\mathcal{L}$ are vital in order to guarantee an interesting reading of the plurality thesis. The reason is that, for instance, first-order predicate logic and its propositional fragment deliver different consequence relations $\Rightarrow_1$ and $\Rightarrow_2$ within the same language $\mathcal{L}$ due to the fact that, say, $\Rightarrow_1$ treats quantifiers as primitive logical vocabulary while $\Rightarrow_2$ does not. Analogous results hold for many other systems where one system is a *supplementation* of the other in terms of extended vocabulary.[4] Most philosophers are happy to endorse 'supplementation pluralism' in this

[4]The terminology is borrowed from Haack 1974. Eklund (2012) uses a distinction between the *vertical* and the *horizontal* dimension of 'which logic is the right one' questions to make a similar point.

sense. The thesis I am concerned with in this paper is a more substantial form of pluralism, where not only the language but also the logical vocabulary of that language remain fixed. According to that view, plurality arises even if we restrict ourselves to one and the same formal language, one and the same set of primitive vocabulary which counts as the logical vocabulary of that language, and one and the same area of application of that language (see also Cook 2010, Eklund 2012, Haack 1974). *Global Consequence Pluralism* claims that, given one language *with a fixed set of logical vocabulary and a fixed application* there is more than one correct consequence relation for that language. A number of competing positions can then be understood along the following lines: *logical monists* think that under these conditions there is exactly one correct logic, whereas *logical nihilists* and *instrumentalists* think there is no correct logic at all.[5]

The remaining hallmarks (1b)–(1d) help to further distinguish GCP not only from other forms of logical pluralism but also from relativism about logical consequence. First, not all theorists who accept the plurality thesis think that the correct logics are 'all-purpose logics' (as Field (2009) calls them), i.e. that they are completely general or global in scope. Achille Varzi (2002, 202) and Stewart Shapiro (2014b, 93–96) explicitly reject claims along the lines of (1b). Shapiro, for instance, proposes to apply the general relativistic schema (GRS) 'Y is relative to X' to logic, such that the "dependent variable Y is for validity or logical consequence, and the independent variable X ranges over mathematical theories or, equivalently, structures or types of structures" (Shapiro 2014a, 51, see also Shapiro 2014b, 7). Following Cook (2010, 492-493), this would make Shapiro's position a kind of relativism (or 'folk-relativism' as Shapiro prefers to call it). Pluralists, on the other hand, typically do not claim that logical consequence is relative to anything, but

[5] As far as I can tell, in the debate on logic, the terms *pluralism, monism*, and *instrumentalism* were introduced in Haack 1978. 'Logical nihilism' is used by Franks (2014) as well as by Gillian Russell in a number of talks. One possibility to distinguish nihilists from instrumentalists is as follows: nihilists think that logical systems are candidates for correctness, but that no system is a successful candidate (whether for contingent or principled reasons). Instrumentalists, on the other hand, think that the question of correctness does not make much sense when it comes to logic. There are many interesting questions about this distinction, but I will not discuss them here.

merely that there are different correct accounts of logical consequence. While this is in tension with Haack's 'local logical pluralism', which ties validity to areas of discourse (1978, 223), it certainly holds for the global pluralism she explicitly defends (1978, 228). It also holds for Beall and Restall, who emphasize: "we are not *relativists* about logical consequence, or about logic as such. We do not take *logical* consequence to be relative to languages, communities of inquiry, contexts, or anything else" (Beall and Restall 2006, 88, their emphasis).[6] Shapiro (2014b, 8–9) suggests that a more liberal understanding of his GRS which does not restrict the independent variable X to things like languages, communities of inquiry, or contexts would make Beall and Restall's pluralism an instance of folk-relativism, too. This may be true, but Beall and Restall are explicitly committed to the "universal applicability of logical consequence" in the sense that "logical consequence applies under any conditions whatsoever" (Beall and Restall 2006, 16). This distinguishes their pluralism from Shapiro's who "reject[s] the [...] slogan that logic is universally valid, holding in all legitimate discourses." (Shapiro 2014b, 96). So I suggest to take (1b) as the distinguishing criterion between pluralism and relativism. That is consistent with Cook's terminology, but it requires relabeling Haack's 'local pluralism' as a kind of 'relativism'.[7] The generality claim (1b) is not a feature unique to pluralism, of course. It is a natural claim for monists; contextualists about logical consequence (see Caret 2016, 18) endorse it, too.

The view that there is some kind of rivalry, (1c), among the correct logics can be found in almost any formulation of logical pluralism. It seems to be an immediate consequence of the fact that the different consequence relations are not supposed to result from different logical vocabulary. Things are not that simple, however, as it is not clear how to spell out the rivalry in question. Perhaps the most natural way is also the most controversial one:

[6] Field (2009, 359) does not explicitly commit to pluralism, but he seems to think that generality and pluralism are compatible. A similar assessment seems to be underlying the characterizations of pluralism in Russell 2008, 593.

[7] This is just a terminological decision on my part. If one prefers to call a view that relativizes logical consequence to domains of discourse 'local logical pluralism', this does not affect the arguments against 'global consequence pluralism' in the sense of the conditions given in (1) in any way.

If two languages $\mathcal{L}_1$ and $\mathcal{L}_2$ have the same logical vocabulary, that vocabulary has the same meaning. In case of rival claims about an argument, there will then be some kind of *semantic* disagreement between, for instance, a logic that licenses *Ex Falso Quodlibet* (EFQ) and one that doesn't. The proponent of EFQ claims that '$\phi \wedge \neg\phi \vDash \psi$' is true, while her opponent claims that there are counterexamples and, thus, that '$\neg(\phi \wedge \neg\phi \vDash \psi)$' is true. Supposing classical logic in the meta-language, the two claims are contradictories, so there is a straightforward sense of disagreement: the disputing parties have jointly incompatible beliefs (cf. MacFarlane 2014a, 121), one claims that p while the other claims that not-p. There seems to be an immediate link between this sort of disagreement and rivalry along the following lines: If disputing parties hold jointly incompatible beliefs, then there is rivalry among those parties.

The canonic criticism of this view is Quine's (1986, 81) argument from meaning-variance, according to which a change of logic amounts to a change of meaning of the logical vocabulary. If this is true, then there is no semantic disagreement between, say, the classical logician and the deviant logician, because they do not use the same negation or the same conjunction (or the same notion of validity, for that matter).[8] The above scenario turns out to be a verbal dispute in which the participants are talking past one another. Specifying the meaning of logical constants is a complicated philosophical task and the argument from meaning-variance is contested (see e.g. Putnam 1962, Haack 1974, Hjortland 2013, Williamson 1988), but this is not the place to settle that dispute. Beall and Restall as well as Haack do allow meaning-variance with respect to the consequence relation (see Beall and Restall 2006, 44; 88 and Haack 1978, 229). In some sense they therefore accept a central point of the argument from meaning-variance: rivalry between different logical systems is not located on the level of (semantic) meaning. Rather, they locate rivalry on a different level, namely on the level of the *application* of a logic.

[8] In fact, Quine's original argument only involves meaning-variance with respect to the connectives, but Haack (1978, 223) shows that a more general version of the argument can be understood as applying to the notion of validity, too (see also Hjortland 2013, 358).

This reading of (1c), which is to some degree independent of the argument from meaning-variance, relies on the distinction between pure and applied logics mentioned above. Assume that different (pure) logics $\mathcal{L}_1$ and $\mathcal{L}_2$ are applied to a given domain D.[9] There is now a clear sense in which one might ask whether one of the logics is *correct* (or whether both are): do the arguments valid-in-$\mathcal{L}_1$ (or in $\mathcal{L}_2$) correspond the arguments valid-in-D? And do the arguments invalid-in-D correspond to arguments invalid-in-$\mathcal{L}_1$ (or in $\mathcal{L}_2$)? There is also a clear sense in which one might ask whether there is *rivalry* among the logics: given that both $\mathcal{L}_1$ and $\mathcal{L}_2$ are applied to D, do they give the same verdicts for all arguments in D? Let us say that there is rivalry among $\mathcal{L}_1$ and $\mathcal{L}_2$ iff there is at least one argument A_n in domain D, such that A_n is valid-in-$\mathcal{L}_1$ but not valid-in-$\mathcal{L}_2$. In these cases, $\mathcal{L}_1$ sanctions the move from the premises of A_n to its conclusion, while $\mathcal{L}_2$ does not.[10] This conception of rivalry is weaker than the semantic conception as it can arise even in cases where semantic disagreement about the consequence relation is absent. It also nicely fits the focus on rivalry and on the *application* of logics in the literature (Beall and Restall 2006, 44, Keefe 2014, 1377, Priest 2006a, 195, Read 2006, 194 Russell 2008, 609), which is sometimes phrased in terms of a dispute about the right metaconcepts (Haack 1978, 229).[11]

Finally, GCP endorses the view that logical consequence comes with some kind of normative force, (1d). Like (1b) and (1c), this claim is independent of the plurality thesis. One can be a monist and still accept (1d) and one can be a pluralist and reject (1d) if one thinks that logic is completely descriptive. Beall and Restall, however, do think that

[9] Note that the application to a domain D does not necessarily mean that logic is not general in the sense of (1b). D may be the domain of reasoning and include all other domains of inquiry.

[10] This conception still depends on semantic considerations as it simply assumes that the arguments in question are identical and, therefore, that the meaning of the logical vocabulary is at least sufficiently similar to refer to the same arguments in D. This assumption is unproblematic for the purposes of this paper as Beall and Restall, and Haack accept it themselves.

[11] It is an interesting independent question whether rivalry or disagreement between logics is a necessary condition for an interesting form of logical pluralism (or relativism about logic, for that matter). Read (2006, 199), Rescher (1969, 215), and Varzi (2002, 198) think it is, while Hjortland (2013, 358) is sceptical. I will not pursue this question here. For the purposes of this paper, it is sufficient that there are logical pluralists who, in fact, endorse the rivalry claim specified above.

logical consequence is normative: "In an important sense, if an argument is valid, then you somehow go *wrong* if you accept the premises but reject the conclusion" (Beall and Restall 2006, 16, their emphasis). Likewise, Haack defends what she calls "a form of weak psychologism", according to which "logic is normative with respect to reasoning" (Haack 1978, 238). Once again, we see that, generally, GCP is best thought of as a thesis about applied logics, and specifically as a thesis about logic as applied to reasoning.

The hypothesis I want to defend in the rest of this paper is that every account that endorses the conjunction of the claims in (1) is susceptible to collapse arguments. If this is correct, we will have a generalized and structural version of the collapse arguments leveled against the pluralism advocated by Beall and Restall (2000, 2001, 2006).

Before presenting the generalized collapse argument in § 5, I will first briefly outline the basics of Beall and Restall's pluralism in § 3, and the collapse arguments by Williamson (1988), Priest (2006a), Read (2006) and Keefe (2014) in § 4.

3 GTT-pluralism

The core of Beall and Restall's pluralism is a conception of validity as necessary truth-preservation, based on the classical Tarskian model-theoretic view, according to which a conclusion follows logically from the premises iff every model of the premises is also a model of the conclusion (see Tarski 1936, 9). However, Beall and Restall replace the 'models' in Tarski's definition with 'cases', resulting in their 'Generalized Tarski Thesis' (GTT) (Beall and Restall 2006, 29):

GTT An argument is valid$_x$ if and only if, in every case$_x$ in which the premises are true, so is the conclusion.

In principle, a case is any entity in which claims may be true (see Beall and Restall 2006,

89), so Tarskian models remain as a special case of GTT.[12] Crucially, however, depending on the type of cases, different consequence relations may emerge. In combination with the acceptance of more than one type of cases, GTT amounts to an instance of the plurality thesis as captured in (1a).

As far as Beall and Restall are concerned, at least four types of cases qualify as admissible instances of GTT, namely the original Tarskian models, possible worlds, situations, and stages. Different types of cases result in a different specification of validity: Tarskian models and possible worlds, being complete and consistent, yield (different forms of) classical validity. Situations, which may be incomplete and inconsistent, yield relevant validity. Finally, consistent but possibly incomplete stages yield intuitionistic validity. Following the terminology of § 1 and combining those consequence relations with a language $\mathcal{L}$, we get classical logic $<\mathcal{L}, \Rightarrow_C>$, relevant logic $<\mathcal{L}, \Rightarrow_R>$, and intuitionistic logic $<\mathcal{L}, \Rightarrow_I>$ for one and the same language.

Beall and Restall's pluralism is not an *anything goes*-position, however. Apart from being committed to a semantic account of consequence that requires the reflexivity and transitivity of logical consequence (cf. Beall and Restall 2006, 91), they impose a number of additional constraints: in order for a consequence relation to count as an admissible instance of GTT, its judgments about consequence need to be *necessary, normative,* and *formal* (cf. Beall and Restall 2006, 35). Their application of all of these requirements has been criticized (see e.g. Bueno and Shalkowski 2009, Paseau 2007, Shapiro 2014b), but apart from the normativity constraint, which is the main concern of the collapse arguments, I will just accept them for the sake of argument.

It is worth noting at this point that, according the terminology introduced above, GTT and the further constraints are to be thought of as conditions an *applied* logic has to meet. This is apparent at various places in Beall and Restall's book. For instance, with

[12] Strictly speaking, Tarskian models operate with the rather minimal notion of 'satisfaction,' instead of 'truth' (Tarski 1936, 8). This indicates that Tarskian model theory is an element of pure logic, while Beall and Restall's GTT is an element of applied logic. I will say more about this below.

respect to the distinction between deductive and inductive logic, they note that "it is a commonplace that the informal notion of *following from, as it applies to reasoning,* may be made precise in at least two distinct ways" (Beall and Restall 2006, 28, emphasis added). They go on to clarify on the same page that "pluralism about deductive logical consequence is of a piece with pluralism about consequence in general."[13] Apart from that, it could be argued that purely formal mathematical structures are not concerned with *truth*-preservation, but only with the preservation of some value designated within the structure. Equating that value with truth is *applying* the mathematical structure to an extra-systematic domain. In any case, 'logic' in Beall and Restall's sense is 'applied logic' in the sense specified above. More specifically, it is *logic applied to reasoning.*

So far, all this sits well with the claims that (*i*) the pre-theoretical notion of logical consequence is underspecified or 'unsettled' (Beall and Restall 2006, 27), that (*ii*) GTT is the 'settled core' of logical consequence, and that (*iii*) there are at least two admissible instances of GTT (Beall and Restall 2006, 35). If there are various admissible notions of logical consequence and if it is constitutive of logic to be applicable to reasoning, then the different notions of consequence should be applicable to reasoning.

There is a puzzling aspect of the view, however, pertaining to the question of what it means to endorse a logic. Beall and Restall distinguish *weak* and *strong* endorsement (Beall and Restall 2006, 82). The idea is that one *weakly endorses* a consequence relation if one takes it to be an instance of GTT. In case one *strongly endorses* a consequence relation, one weakly endorses it and additionally accepts that the logic satisfies the 'actuality constraint'. This means that the actual case is in the domain of the quantifier of the GTT. Only with strong endorsement does truth in every case imply actual truth (see also Field 2009, 349). Weak endorsement, however, allows for a valid$_x$ argument with actually true premises and a conclusion that is not actually true, but only true in all cases$_x$. Take Beall

[13] Cf. also "Logic, whatever it is, must be a tool useful for the analysis of the inferential relationships between premises and conclusions expressed in arguments we actually employ. If a discipline does not manage this much, it cannot be logic in its traditional sense" (Beall and Restall 2006, 8).

and Restall's (2006, 83) example of a dialetheist who strongly endorses paraconsistent consequence but only weakly endorses classical consequence and who, let us assume, rejects *disjunctive syllogism* (like, for instance, Priest 2006b, 76). Such a dialetheist will have to claim that the inference from A and $\neg A \vee B$ to B is valid$_c$,[14] and, thus, that the conclusion is (at least) true in all cases$_c$ in which the premises are (at least) true. Our dialetheist will claim this even in 'actuality', which—let us suppose in accordance with dialetheism—is a situation s in which A and $\neg A \vee B$ are indeed true (and also false), but B is not true. She will be perfectly justified to do so, given that actuality is not among all cases$_c$. What is completely unclear to me, however, is how in this situation the weakly endorsed classical logic would still be applicable to our dialetheist's reasoning or even to reasoning in general. I share Rosanna Keefe's scepticism about the combination of weak endorsement and the normativity of logical consequence:

> If the validity of an argument does not guarantee truth-preservation in the actual case then why think that you [...] go wrong in accepting the premises and denying the conclusion of a valid argument in that actual case? There's no guarantee that that isn't the way things are. [...] A logic that fails the actuality constraint surely fails to capture the true consequence relation even if it has enough formal features to count as a logic. (Keefe 2014, 1383)

Even more importantly, weak endorsement in the case at hand is also at odds with Beall and Restall's own assessment: "To endorse the premises of a valid argument but to reject the conclusion is to contradict yourself in the following sense: There is no case in which those claims could hold true. Your commitments undercut themselves" (Beall and Restall 2006, 24).

I take it, then, that weak endorsement has no sensible role to play in a pluralism applied to reasoning. Any view on logic that endorses the normative role of consequence for reasoning should commit to the claim that the conclusion of a valid argument with

[14] I use, 'valid$_c$' for 'classically valid,' valid$_r$ for 'relevantly valid,' and valid$_i$ for 'intuitionistically valid'.

true premises is at least true. This also limits the general pluralist options. Dialetheists, who take actuality to be inconsistent, cannot strongly endorse classical logic on pain of triviality. Logical pluralism, dialetheism, and classical consequence cannot be combined. Note, however, that so far most of Beall and Restall's (and—because of his rejection of dialetheism—especially Restall's) pluralism remains untouched by this point. We do, however, now have all the ingredients needed for the collapse arguments.

4 Three collapse arguments

The collapse arguments against Beall and Restall's pluralism, and against pluralist tendencies in general, resemble the argument against weak endorsement insofar as they also appeal to the normativity of logical consequence. As we have seen in § 2, this is an aspect of GCP that is endorsed by the relevant pluralist accounts.

The general worry about competing logics and their respective normative role is actually older than Beall and Restall's pluralism. It can already be found in a paper by Timothy Williamson (1988), where he not only argues that there is a substantial dispute between the classical and the intuitionist logician, but also that attempts to reconcile the dispute in broadly pluralist categories runs into normative problems:

> As a matter of fact, both classical and intuitionist logicians treat $X \vdash A$ as meaning that you are committed to A in making the set of assumptions X. It would otherwise be unclear that they could recognize each other as engaged in *reasoning* at all; to speak of classical and intuitionist *logic* would be to equivocate on the word 'logic'. Suppose that there were distinct but equally legitimate 'deducibility' relations, one classical and one intuitionist, and that you discovered your beliefs to have a certain consequence in the sense of one but not in the sense of the other; should you accept that consequence or not? (Williamson 1988, 112)

The quotation highlights a number of assumptions that Beall and Restall explicitly endorse (see §§ 2 & 3): first, logical consequence is normative for reasoning, (1d); second, there is a plurality of consequence relations, (1a); third, those consequence relations deliver competing results in a given application, (1c); further, an implicit fourth assumption seems to be that both logics are global in scope, (1b)—they apply to reasoning in general or, at the very least, they overlap in some applications.

The same assumptions seem to be in place in the second collapse argument, which was raised specifically against Beall and Restall's pluralism by Graham Priest (2006a):[15]

> Let s be some situation about which we are reasoning; suppose that s is in different classes of situations, say, K_1 and K_2. Should one use the notion of validity appropriate for K_1 or for K_2? We cannot give the answer 'both' here. Take some inference that is valid in K_1 but not K_2, $\alpha \vdash \beta$, and suppose that we know (or assume) α holds in s; are we, or are we not entitled to accept that β does? Either we are or we are not: there can be no pluralism about this. (Priest 2006a, 203)

Consider the simple argument from A to $B \vee \neg B$. It is valid_c but not valid_r. In order for s to be a situation in the class of cases_c as well as in the class of cases_r, it needs to be a complete and consistent situation. In all of those, $B \vee \neg B$ will be true. Given the actuality constraint, $B \vee \neg B$ will also be actually true. So, although there may be different senses in which the conclusion of the argument is *guaranteed* to be true, there is no sense of *guaranteed* in which the premises are actually true and the conclusion actually false (see also Keefe 2014, 1385). If the argument is valid in any of the relevant senses, the conclusion is actually true given that the premises are. As this point holds quite generally, independent of the specific argument chosen here, it seems that Beall and Restall's pluralism collapses into monism. One may always use the strongest available logic, which is classical logic in their case (cf. Keefe 2014, Priest 2006a, Read 2006, Caret

[15] An earlier version of this argument can be found in Priest 2001.

2016).

There is a response to Priest's argument by Beall and Restall (2001, 2006), which I have not seen discussed in print. They reply to Priest's earlier argument that, although $B \vee \neg B$ is true in s, we are only *classically entitled* but not *relevantly entitled* to infer $B \vee \neg B$ in s. They also mention that this classical inference is not as 'good' as others in which inference is really inference from its premises (cf. Beall and Restall 2006, 94). Both points are problematic, however.

The first response seems to aim at augmenting the pluralism about logical consequence with a pluralism about the *normativity* of logical consequence. I do not want to assess this suggestion here, but, crucially, it does not seem to be of any help when dealing with Priest's challenge. The reason for this is that 'entitlement' is an epistemic notion and, arguably, the normativity of logical consequence is of an epistemic nature, too (Field 2009, 354)—or at least logical norms seem to be responsive to epistemic norms (cf. Steinberger 2017). Given the way Priest's argument is set up, the epistemic subject in question *knows* not only that A is true but also that $B \vee \neg B$ follows classically from A. Given that competent deduction is a way of gaining knowledge, the subject also *knows* $B \vee \neg B$. Knowledge, however, is clearly a stronger epistemic notion than entitlement. It seems reasonable, therefore, to suppose that, in general, knowledge entails entitlement and, in particular, that it entails any sub-notion of entitlement. So unless Beall and Restall also want to be pluralists about knowledge, the claim that there is some sense of entitlement$_r$ such that the subject in Priest's argument knows that $B \vee \neg B$ but is not entitled$_r$ to infer $B \vee \neg B$ is not available to them.[16]

I am not quite sure what to make of the second response, according to which a relevant inference is said to be better than a non-relevant classical inference. On the one hand, it seems to be at odds with the general pluralist spirit. If all logics are supposed to be equally

[16] If one is critical of this epistemological argument, there is a further argument to the effect that the notion of entitlement does not solve the problem due to the normative principle Beall and Restall rely on. I will get back to this in § 5.

correct, it is not clear in what way one may be better than the other in the relevant sense—relevant for pluralism, that is, which is concerned with correct logics. On the other hand, there is, of course, *some* sense in which one might say that relevant consequence is better than non-relevant consequence: a relevant inference is an inference from the actual premises of an argument. In the same vein, one might say that a constructive proof is better than a non-constructive proof, because it contains more information. But those senses of 'better' or 'worse' are orthogonal to logical pluralism. Even a monist about classical logic can accept them as long as pluralists accept that classical consequence is necessarily truth-preserving.

There is another twist to the question of which logic is 'better'. Stephen Read (Read 2006, 194-195) draws an opposing conclusion from Priest's scenario: given that the K_1-account of validity answers a crucial question which the K_2-account fails to answer—namely what follows from α?—it must be the better account of validity. This point does seem to have some force. After all, 'what follows from what?' is what Beall and Restall call the 'chief question' in logic (Beall and Restall 2006, 35). So a correct account of validity that gives more information on that question must be the better than an account that fails to answer that question (see also Caret 2016, 4).

A third collapse argument is Read's variation of Priest's challenge. Read asks us to consider a logic K_3 such that "while β follows K_1-ly from α, $\ulcorner\neg\beta\urcorner$ follows K_3-ly from α, while α is consistent [...]. Should we infer that β is true, or that $\ulcorner\neg\beta\urcorner$ is true?" (Read 2006, 197). So far, following the pluralisms discussed by Beall and Restall, and Haack, we have only considered logics which are subsystems of classical logic in the sense that they allow only inferences also allowed in classical logic—though not necessarily all of those. There are other non-classical logics, however, namely *connexive logics*: systems with a standard logical vocabulary, which are neither subsystems nor extensions of classical logic, comprising certain non-theorems of classical logic as theses (see Wansing 2016). Read uses Abelian logic, which has $((\phi \to \psi) \to \psi) \to \phi$ as its characteristic

axiom. Now, let α be '$\neg A,\ B$' and let β be '$((A \to B) \to B) \to A$'. This gives us an instance of Read's scenario above. We now have $\neg A, B \vdash_C \neg(((A \to B) \to B) \to A)$ and $\neg A, B \vdash_A ((A \to B) \to B) \to A$.

This result would be even more problematic than the result of Priest's argument. Given that we have dismissed weak endorsement in the previous section, Read's argument seems to commit the pluralist to endorsing the actual truth of $\neg(((A \to B) \to B) \to A)$ as well as of $((A \to B) \to B) \to A$. In other words, the pluralist would have to accept dialetheism. But we have also seen in the previous section that a dialetheist cannot endorse classical logic on pain of triviality. So Read's argument seems to exclude either classical logic or connexive logics from logical pluralism. To be fair, Beall and Restall only endorse classical, relevant, and intuitionistic consequence. However, they do not provide a general argument to the effect that the pluralist theses do not also apply to other logics. As long as the notions of validity are instances of GTT and obey the further constraints of necessity, formality, and normativity, they qualify for pluralism. Read (2006, 198) mentions Routley's proof that every logic admits a two-valued worlds semantics. So, if Routley is right, every logic could be formulated such that it falls under GTT. One option for Beall and Restall seems to be to reject the *necessity* of connexive logics. As their notion of necessity is spelled out in terms of possible worlds (which are complete and consistent) and hypothetical reasoning, any logic conflicting with classical logic in the way that connexive logics do seems to disqualify. This line of argument is in accordance with their response to those intuitionistic theories in which one can prove the negations of classical theorems: "reject any inference in conflict with classical reasoning" (Beall and Restall 2006, 118). The downside of this reply is that it enforces the point of the first collapse argument. In the end it seems that their pluralism does collapse into classical logic.

5 Generalizing the Collapse Arguments

Priest's and Read's collapse arguments apply to GTT-pluralism, but Williamson's worry suggests that there is a more general problem for pluralism. In this section I argue that analogous arguments can be raised against any pluralist theory that endorses the claims in (1).

It is straightforward to abstract from the specifics of Beall and Restall's view in Priest's argument: (1a) allows us to assume that there are two correct consequence relations $\Rightarrow_1$ and $\Rightarrow_2$ such that $\alpha \Rightarrow_1 \beta$, but $\alpha \not\Rightarrow_2 \beta$. Given the constraints formulated in § 2 with respect to the logical vocabulary and its meaning in the language in question, we can also assume that the resulting logics make different judgments about the *same* argument forms. According to (1b), both consequence relations are global, which guarantees that there will be some specific argument A valid according to $\Rightarrow_1$, but invalid according to $\Rightarrow_2$. Now suppose there is a subject S who knows α holds and who also knows that $\alpha \Rightarrow_1 \beta$ and that $\alpha \not\Rightarrow_2 \beta$. This is the kind of situation envisaged in the collapse arguments.

Now, the normativity of logical consequence puts constraints on reasoning and beliefs. Following the rather general characterization of § 2, subject S would go wrong in accepting the premises but rejecting the conclusion of the relevant argument. So, in any application where two logics $<\mathcal{L}, \Rightarrow_1>$ and $<\mathcal{L}, \Rightarrow_2>$ apply and where $\alpha \vdash_1 \beta$ but $\alpha \nvdash_2 \beta$, the subject would go wrong in rejecting β according to $<\mathcal{L}, \Rightarrow_1>$. Logic $<\mathcal{L}, \Rightarrow_2>$, however, does not impose any normative constraint on α or β in this scenario as the argument from α to β is not valid according to $\Rightarrow_2$. So, other things being equal, not rejecting β is the only belief state for S that does not violate the normativity of logic. I will say more about the relevant normative principle below, but I think it is fair to say that that it is rather weak compared to other principles discussed in the literature.

Returning to the discussion of *entitlement* above, we now see that there is another reason why the notion does not help: even if one could say that S is not entitled$_2$ to β (even though she knows β), she does not violate any norm of $<\mathcal{L}, \Rightarrow_2>$ if she does not

reject β. She does, however, violate a norm of $<\mathcal{L}, \Rightarrow_1>$ in case she rejects β.

I submit, then that any version of GCP as outlined in (1) and § 2 is subject to this generalized collapse argument. Actually, the argument can be strengthened further still: note that, in the absence of meaning-variance of the logical constants, the generality requirement (1b) immediately results in the applicational sense of rivalry envisaged in (1c). It is worth pointing out, however, that there can be rivalry even in the absence of fully general logics. It is sufficient for (1c) that the areas of application of the competing logics overlap in a specific way. Thus, we can replace (1b) with the requirement that there is a subset in the applicational overlap of the logics that contains the contested argument forms.

The result is a slightly stronger argument to the effect that all variants of logical pluralism holding (*i*) that there are at least two correct logical system characterized in terms of different consequence relations, (*ii*) that there is applicational rivalry (about whether or not to accept the conclusions of specific arguments) among the correct logics, and (*iii*) that logical consequence is normative, are subject to the collapse argument.

There are a number of further points to be explored. First, Read's collapse argument can be generalized along the same lines. So, in the absence of further constraints on the admissibility of logics, the Global Consequence Pluralist cannot both endorse classical consequence and dialetheism. The preference for classical logic is inherent to GTT-pluralism. GCP will have to be combined with independent arguments for or against such a preference.

Secondly, the way we specified the correctness of the consequence relations in § 2 is not committed to the model-theoretic implementation used in Beall and Restall 2006. Also, nothing in terms of truth-preservation was needed for the formulation of the generalized collapse argument. So if the argument succeeds, it should apply to other implementations of pluralism about validity, for instance in terms of proof-theory (see e.g. Restall 2014), as well.

Thirdly, note also that the normative principles applied in the collapse arguments in § 4 are different from the one applied here in at least two respects. The first is that Williamson seems to presuppose something like the following logical implication principle: If S's beliefs logically imply P, then S ought to believe that P. Likewise, Priest's and Read's arguments can be interpreted to rely on the principle that anyone who knows the premises of a valid argument ought to accept its conclusion (see Caret 2016). Those 'narrow scope'-principles are controversial, partly due to Gilbert Harman's (1984) influential criticism.[17] The second relates to the kind of normativity. Caret (2016, 9) complains that the normativity at issue in the collapse arguments is at odds with Beall and Restall's conception of normativity. Whereas the former relies on *directive* norms, which aim at guiding deliberation, the latter is *evaluative* in the sense that it sets standards for logical cogency (the distinction is taken from Steinberger 2015). In contrast, the normativity appealed to in my general version of the argument not only avoids most of Harman's challenges, it is also the one endorsed by Beall and Restall themselves. Following Caret (2016) it can be formulated in terms of the following principle: If the argument from α to β is valid, then for all subjects σ: σ ought to see to it that σ does not both accept α and reject β.[18] Still, the general collapse problem prevails.

There is an apparent reply available to the pluralist: 'True, if a subject endorses classical consequence, the principle states that, for instance, she ought not both accept A and reject $B \vee \neg B$, whether or not she is a pluralist and also endorses relevant consequence. But one might think that there is a *third* attitude available besides acceptance and rejection (or believing and disbelieving), namely *suspension of judgment.*'[19] Suspending

[17] Among other things, they seem to require a subject to believe infinitely many propositions, namely the logical closure of her beliefs; they also fail to offer guidance as to how to revise one's beliefs in the face of a valid argument to an unwelcome conclusion. See Harman 1984 for a detailed discussion of these problems.

[18] Note that MacFarlane's (2014b, 7) formulation, to which Caret refers, uses 'believing α' and 'not disbelieving β' instead of 'accepting α' and 'not rejecting α'.

[19] This third attitudinal value does not figure in the principles considered in Beall and Restall 2006, MacFarlane 2014b, Steinberger 2015 or Caret 2016 and it is not yet clear what other consequences this position might have. This question is beyond the scope of this paper, though.

judgment about a proposition is compatible with not rejecting (or not disbelieving) it, so the normative principle appealed to would still hold. Thus, according to one possible line of reasoning, in scenarios like the ones described in the collapse arguments, the pluralist can still suspend judgement about β.

A possible rejoinder in support of the collapse argument is to rely on a stronger principle: For all subjects σ: if σ knows that the argument from α to β is valid, σ ought to see to it that if σ accepts α, σ accepts β. This principle rules out suspension of judgment and it also avoids the excessive demand of believing all logical consequences of one's beliefs due to the restriction to valid arguments known to the subject. This restriction, however, has the downside that the principle has no force on logically ignorant subjects (MacFarlane 2014b, 12). Someone who doesn't know that an argument is valid is not normatively required to conform to it.

I do not think, however, that it is necessary to change the original principle, as suspension of judgment does not help the pluralist. If in any case in which logics deliver competing validity judgments, the pluralist will have to suspend judgment, this would seriously limit the use of pluralism as applied to reasoning. Even in the rather restricted conception of Beall and Restall, the inferences *specific* to, e.g., classical logic could never be applied to reasoning as they are invalid in intuitionistic or relevant logic. So in the case of the above example, S would have to suspend judgment on $B \vee \neg B$. More generally, given two logics applied to the same domain D, where one is a sub-system of the other, only the weaker logic will be normatively relevant to reasoning. So this result is inverse to the result of the original collapse argument: only the weakest logic endorsed is relevant to reasoning. This is not pluralism, either.

6 Ways to avoid the collapse arguments

The collapse arguments do not have to be taken as a challenge for pluralism in general. They can be understood as an attack on a certain kind of pluralism. If my arguments

so far have been correct, the relevant kinds of pluralism are (*i*) Global Consequence Pluralism constituted by the conjunction of the claims in (1) on page 3 as well as (*ii*) a weaker non-global version that basically comprises claims (1a), (1c), and (1d), allowing for applicational rivalry among the relevant notions of logical consequence (see § 5). The remaining question is whether an interesting version of pluralism can be formulated that does not endorse any of the problematic conjunctions of those claims. In this last section I consider some of options available to the pluralist.[20]

Obviously, the plurality thesis is not negotiable for pluralists, but maybe it can be cashed out in terms different from (1a). If we understand plurality in terms of the 'different logic, different language' view outlined in § 1, the collapse arguments do not straightforwardly apply. The reason is that the logics in question may not give conflicting verdicts *about the same argument*. Following the lead of the argument from meaning-variance, one might suppose that there are different disjunctions and/or negations at work in different languages. Then the claims that, for instance, $A \vdash_1 B \vee \neg B$ but $A \nvdash_2 B \sqcup {\sim}B$, do not give rise to the collapse argument. Unless the *meaning* of the disjunctions and of the negations is the same, the arguments do not even have the same conclusion. Likewise, the claims that $\neg\neg A \vdash_1 A$ but that ${\sim}{\sim}A \nvdash_2 A$, do not give rise to the collapse argument. Unless the *meaning* of the negations is the same, the arguments do not even have the same premises. Other things being equal, no normative principle prevents us from rejecting $B \sqcup {\sim}B$ or from rejecting A on the basis of ${\sim}{\sim}A$ (while not rejecting it on the basis of $\neg\neg A$). Note that if the meaning of the connectives *was* the same, then the negations and conjunctions would just be notational variants. The collapse argument would resurface if the plurality was said to emerge from the consequence relations.

Given that result, a pluralist might claim that the relevant pair of arguments corresponds to extra-systematic arguments in the same domain. Rivalry between the logics might be spelled out in terms of disputes about the question which formalization captures which

[20] I do not take these considerations to be exhaustive. There may be further interesting pluralisms available.

arguments when applying the logics. The pluralist line would be that this dispute is only apparent as both formal arguments correspond to extra-systematic arguments. What would be needed in making this an interesting form of pluralism, however, is a story about how this plurality could arise with respect to *one and the same* application. Without such a story, the view need not worry the monist who may concede that, for instance, both $\neg\neg A \vdash_1 A$ and $\sim\sim A \nvdash_2 A$ correspond to some extra-systematic arguments as long as they are not both correct with respect to one specific argument.

A further variation of the plurality thesis could be to understand *correctness* in a more holistic way. The question would then be which system 'as a whole' delivers the best results when applied to a given domain. The relevant criteria are likely to admit of degrees and it may happen that different systems fare equally well. But again, it is not clear that even this needs to worry the monist. She might still hold that there is one correct logic, but that we just do not know which one. Pluralism might be advisable due to our epistemic limitations, but maybe we can get rid of it once we are in a better epistemic state. Further arguments would be needed for a more substantial pluralism.

Combining the plurality thesis with constraints on the scope of logic, that is, with a rejection of (1b), gives rise to a number of options. The first is relativism: If $\Rightarrow_1$ applies only to arguments in domain D_1 and $\Rightarrow_2$ only to arguments in domain D_2, and if those domains are disjoint, then arguments are only 'valid' relative to specific domains and maybe they are so in different ways.[21] If the intersection of the domains is non-empty, but there are still arguments in D_1 but not in D_2 and arguments in D_2 but not in D_1, this may be a weaker form of relativism, but it is relativism nonetheless. Finally, if one domain D_s is the superset of other domains and if there is a consequence relation corresponding to that set, then the collapse problems will arise for the arguments in D_s, provided that all consequence relations are equally correct. Other things being equal, it seems that rejecting the generality of logical consequence avoids the collapse arguments only at the

[21] If one accepts that there are different ways of being true, there may be interesting relations to alethic pluralism at this point (cf., e.g. Pedersen 2014).

cost of becoming a relativist.

Rejecting (1c) by claiming that there is no rivalry among the correct consequence relations seems to be an option more in the spirit of non-relativistic pluralism. Note, however, that the notion of rivalry used in this paper is fairly minimal. It allows for meaning-variance of the consequence relation as long as there is the applicational conflict as to whether or not to accept the conclusion of a given argument.[22] We have already seen that avoiding rivalry by restricting the domain of application of a logic leads to relativism. A different option is to retain the generality of logic, while claiming that the applicational conflict never actually arises. One way to do this is by endorsing contextualism about logical consequence (see Caret 2016). The decisive claim is that the conversational context determines the relevant consequence relation. If this is correct, then the collapse arguments would be underspecified in the sense that they do not provide enough information on the conversational context in order to determine the consequence relation at issue. As real life situations are not underspecified in this way, collapse arguments do not arise—or so the contextualist claims. The merits and problems of relativizing the truth of validity claims to contexts of utterance will have to be discussed elsewhere. What is important here, is that the resulting contextualism about consequence is not an instance of GCP, as (1c) is not endorsed by contextualists—in fact, the 'problem of lost disagreement' is widely discussed in the literature on contextualism (e.g. about knowledge attributions or about predicates of personal taste). Given that it relates logics to different standards, this also means that it does not treat all consequence relations as equally good. This is a departure from pluralism. The position may be sufficiently pluralist, however, to provide an alternative to pluralists worried by the collapse problems.

Finally, one might consider rejecting the normativity of logical consequence required by (1d). If logic is not normative in the first place, then the question of whether a subject should reason in accordance with one logic or another simply does not arise. Logic is

[22] If one dismisses rivalry by endorsing meaning-variance about the connectives, then the above considerations about reformulating the plurality thesis apply.

not the place to look when seeking an answer to the questions raised by the collapse arguments. There are no constraints on reasoning resulting from logic at all. This is a rather fundamental departure from the understanding of logic common to both the proponents and the critics of logical pluralism discussed in this paper. It also seems that the remaining pluralism would be a far less interesting position than the one usually defended by logical pluralists. As pointed out before, no one would object to the claim that there is a plurality of pure logics, if this is taken to mean that there is a merely theoretical pluralism.

It is not even entirely clear whether this radical move really solves the issue. Even if logic is not normative in itself, it is plausibly still normative in a derivative sense. For instance it may result from other epistemically motivated notions such as gaining knowledge or true beliefs. But these are just the aspects of normativity at work in the collapse arguments. There is good reason to suppose that the results of any logic that is (indirectly) instrumental in furthering these goals are to be accepted.

Maybe different consequence relations come with different normative constraints? This seems to be the motivating idea behind Beall and Restall's idea that different logics provide us with different senses of entitlement (Beall and Restall 2001). The discussion in §§ 4 & 5 showed, however, that it is of little help with regards to the collapse arguments. Resorting to weaker normative principles may avoid the collapse into the strongest available logic, but arguably it will lead to a collapse into the weakest available logic. Thus, while rejecting the normativity of logical consequence altogether leads to a trivial kind of pluralism, weakening the constraints is not likely to solve the collapse problems.

7 Conclusion

I argued that the collapse arguments (§ 4) against Beall and Restall's brand of logical pluralism (§ 3) can be generalized. The generalization I proposed in § 5 applies to all variants of Global Consequence Pluralism as specified in § 2. A strengthened version

applies to all variants of logical pluralism that meet the following three conditions: (i) that there are at least two correct logical systems characterized in terms of different consequence relations, (ii) that there is some sort of rivalry among the correct logics, and (iii) that logical consequence is normative. In § 6 I explored some possible options for logical pluralists to avoid the collapse arguments. It turned out, however, that those options correspond to positions that either amount to instances of competing theories or, as far as they remain pluralist, lose their controversial features. In the face of the collapse arguments the case for an interesting and stable form of logical pluralism is still to be made.

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