

What can the problem of mixed inferences teach us about alethic pluralism?¹

1. Alethic pluralism

Here is a well-known thought about truth:

Truth consists in correspondence with reality. A sentence is true just in case what it says corresponds with how the world is.

Theories of truth that incorporate this thought are naturally regarded as robust or “heavyweight”. Truth is to be understood in a realist fashion. The world decides what is true and what is not. A recent incarnation of the correspondence view is found in truth-maker theories, whose adherents maintain that truths are true in virtue of there being something – a truth-maker – in the world that makes them so.²

The idea that truth is robust is rather compelling for a range of domains of discourse. Sentences about kickable things such as tables and chairs and footballs, if true, quite simply seem to be so in a robust, or heavyweight, way. Such sentences are true in virtue of a correspondence between what they say and (a mind-independent) reality. However, as compelling as the idea of a robust notion of truth is for talk about ordinary physical objects, matters appear less straightforward for, say, moral discourse. One might be drawn in the opposite direction in this particular case – maintaining that, although moral sentences are truth apt, there is no mind-independent moral reality to which they can correspond, and so, no basis for a robust notion of truth. Instead the appropriate notion for moral discourse is “lightweight” – everything but robust, that is. Thus, we might find ourselves in two minds over the question whether a robust or a non-robust notion of truth is the more compelling one?

Adherents of *alethic pluralism* respond to the question by maintaining that truth is many rather than one. The alethic pluralist allocates conceptual space for both the idea of robustness and its opposite by endorsing the thesis that what counts as truth may vary from domain to domain. Crispin

Wright, an advocate of (one version of) the view, holds that what it takes for a predicate to qualify as a truth predicate is to satisfy a set of platitudes, e.g., that to assert is to present as true (Wright 1988 and 1992). Thus, sentences about medium-sized dry goods might be assessable in terms of heavyweight truth, which brings on a commitment to realism about the relevant range of entities, while moral sentences might be assessable in terms of lightweight truth, which does not commit one to realism about the relevant range of entities. As our above considerations suggest, one great attraction of alethic pluralism is that sentences of discourses which seem fundamentally different can be assessed in terms of different kinds of truth.

Recently, however, alethic pluralism has been attacked by Christine Tappolet. In Tappolet 1997 and 2000, she argues that considerations on mixed inferences show pluralism untenable. The aim of this paper is two-fold. First, we will defend alethic pluralism against Tappolet's objection by offering two responses to it. Second, we will take a step back and ask what we can learn about alethic pluralism through reflection on the lines of response provided.

2. The problem of mixed inferences

According to Christine Tappolet, alethic pluralism is the view that there is more than one truth predicate. In Tappolet 1997, the following objection against alethic pluralism is offered:

Let a *mixed inference* be an inference that involves sentences of discourses assessable in terms of different truth predicates. Now, consider the following mixed inference (adopted from Tappolet 2000):

- (1) Cruel cats are hungry.
- (2) This cat is cruel.
- Therefore (3) This cat is hungry.

Certainly this inference is valid, but:

The validity of an inference requires that the truth of the premises necessitates the truth of the conclusion. But how can this inference be valid if we are to suppose ... that two different kinds of truth predicates are involved in the premises? For the conclusion to hold, some unique truth predicate must apply to all three sentences. But what truth predicate is that? And if there is such a truth predicate, why isn't it the only one we need? (Tappolet 1997: 210)

The quote indicates three tasks: (i) provide an argument for the negative conclusion that, given her adherence to a multitude of truth predicates, the alethic pluralist cannot account for the validity of mixed inferences, (ii) provide a characterization of a unique truth predicate applicable to premises as well conclusion in terms of which the validity of mixed inferences can be accounted for, and (iii) supply an argument for the claim that such a unique, generic truth predicate is the only one needed.

After a brief discussion of (i), the remainder of this paper will evolve around (ii). No attempt will be made to engage with the further issue raised by (iii). (ii) and (iii) are phrased at the level of predicates. Our discussion of (ii) will show that in order for Tappolet's considerations to have any force against interesting versions of alethic pluralism they need to kick in at the level of properties – rather than that of predicates – *and* that there is reason to suppose that this move cannot be made. This does not establish that (ii) and (iii) are tasks that cannot be pursued, but it does suggest that, even if successfully executed, they are not as relevant to the assessment of alethic pluralism as Tappolet thinks. Once this point has been made on the basis of a discussion of (ii), I will allow myself not to engage with (iii). These things said, let us move on to (i).

The passage quoted leaves it unclear what exactly Tappolet's argument is supposed to be. Spelled out properly, the objection must be that the alethic pluralist is forced to take occurrences of “true” to be ambiguous, and that this jeopardizes the validity of mixed inferences. To make this point it is worthwhile spelling out the inference from above explicitly in terms of truth:

(1*) “Cruel cats are hungry” is true.

(2*) “This cat is cruel” is true.

Therefore (3*) “This cat is hungry” is true.

Put in these terms, the argument goes that if, as the pluralist maintains, there is a multitude of truth predicates, occurrences of “true” will be ambiguous and the inference will be a fallacy of equivocation. It plays on an ambiguity and, as such, is invalid.

3. A pluralist response: many-valued logic

J.C. Beall has presented a reply to Tappolet by appealing to the account of validity used in many-valued logics (Beall 2000). He takes Tappolet to press a dilemma: deny the validity of mixed inferences or reject the Tarskian account of validity in terms of necessary truth preservation. Beall's reply invokes the account of validity standardly given in many-valued logics.

Suppose, for ease of exposition, that there are three semantic values, **1**, **0.5**, and **0** – where **1** and **0.5** are “two ways of being true”.³ In the fashion of many-valued logics, the pluralist can characterize validity in terms of designated values, where the designated values are ways of being true: “... an argument is valid iff (necessarily) if all the premises are designated, then the conclusion is designated” (Beall 2000: 382). For the case in hand, this means that an argument is valid iff (necessarily) if all the premises are **0.5** or **1**, then the conclusion is **0.5** or **1**.

So, the pluralist, it seems, does not have to give up the account of validity as necessary truth preservation; it just has to be phrased in terms of designated values. And, indeed, with the pluralist account of validity in place, the supposedly problematic mixed inferences come out valid. In other words, the alethic pluralist appears to be compelled to embrace neither the first nor the second horn of the dilemma.

4. Tappolet's rejoinder

In her reply to Beall, Tappolet insists that her considerations give rise to a trilemma:

The truth pluralist has to choose between one of the following options: (a) denying that such [mixed] inferences can be valid; (b) claiming that, in addition, to the different truth predicates, there is a unique predicate characterizing the premises and the conclusion; or (c) denying the classical account of validity, according to which the truth of the premises necessitates the truth of the conclusion. (Tappolet 2000: 383)

(a) and (c) correspond to the horns of the dilemma Beall takes Tappolet to have posed, and which, as just seen, he also takes himself to have resisted.

According to Tappolet, however, there is a problem with Beall's response which pushes the pluralist towards (b). (This will lead us on to (ii) from Section 2.) The problem is that "... it appears to presuppose a truth predicate that can be applied to sentences of all sorts", reflected in the elucidation of designated values as "ways of being true":

The term "true" in "ways of being true" surely consists of a generic truth predicate, so that if a sentence is T_1 or T_2 it will also fall under this generic truth concept. (Tappolet 2000: 384)⁴

More generally, let $T_1 \dots T_n$ be the designated values, and let p be a propositional variable. Then Tappolet's idea is that a generic truth predicate, T_G , can be introduced as follows:

$$(TG) \quad (\forall p)(T_G(p) \leftrightarrow T_1(p) \vee \dots \vee T_n(p))$$

According to Tappolet, this pushes the alethic pluralist towards (b), i.e., "claiming that, in addition, to the different truth predicates, there is a unique predicate characterizing the premises and the conclusion".⁵

This suggests that Beall has failed to recognize that his pluralist response is problematic, and, indeed, that it is so independently of the problem of mixed inferences. All that is needed to raise the question whether there is such a predicate as T_G is the pluralist thesis that there is more than one truth predicate. Once this thesis has been formulated, T_G can be introduced. Its introduction shows that truth is one rather than many, contra pluralism. There is thus something self-defeating or unstable about pluralism. The mere attempt to formulate the view leads to trouble.

5. Linguistic vs. metaphysical pluralism

In this section, it will be granted that Tappolet has provided a strong argument against a certain version of alethic pluralism. However, it will also be argued that it is a rather uninteresting version, and that a much more interesting version of alethic pluralism remains untouched by Tappolet's argument.

Predicates are linguistic items, while properties belong to metaphysics. Predicates are part of language, properties part of (extra-linguistic) reality. Accordingly, we should distinguish between two kinds of alethic pluralism:

[Weak linguistic pluralism]:

There is more than one truth predicate.

[Weak metaphysical pluralism]:

There is more than one truth property.

Each of these has a stronger relative. [Strong linguistic pluralism] results by adding to [Weak linguistic pluralism] the thesis that there is no single truth predicate in terms of which all true statements are assessable. It is compatible with [Weak linguistic pluralism] that there is such a generic truth predicate, as it might just be one of the predicates in the multitude of truth predicates. [Strong metaphysical

pluralism] results by adding to [Weak metaphysical pluralism] the thesis that there is no single truth property which all true propositions share. It is compatible with [Weak metaphysical pluralism] that there is such a truth property, as it might just be one of properties in the multitude of truth properties.

Tappolet has provided a good argument against *strong* linguistic pluralism. However, strong linguistic pluralism is a rather uninteresting view. It was never a real contender. It is implausible exactly because of the argument Tappolet has given. Assuming that the pluralist truth predicates are $T_1 \dots T_n$ it is easy to answer the question whether there is a generic truth predicate which applies to every statement to which one of $T_1 \dots T_n$ applies. Sure there is – we can use (TG) to introduce one. So, strong linguistic pluralism is in trouble.

Crucially, however, this result delivers neither the conclusion that weak linguistic pluralism is in trouble nor the conclusion that any kind of metaphysical pluralism is. It is compatible with weak linguistic pluralism that there is a generic truth predicate. As for metaphysical pluralism, we should remind ourselves that language is one thing, reality another. When a new linguistic item has been introduced into a language, we should enquire whether it hits on something, whether it refers to or denotes something?

T_G is shorthand for a disjunction of predicates already in the language. As such it is an expansion of the language, but to argue that there is a generic truth *property* – and thus get the metaphysical pluralist in trouble – a case needs to be made for the following claim:

$$(TG^*) \quad (\exists X)(\forall p)(X(p) \leftrightarrow T_1(p) \vee \dots \vee T_n(p))$$

What assumption is needed to make the step from (TG) to (TG*)? Something like the following comprehension principle:

[Magic]:

Let $\phi(x)$ be a complex disjunctive predicate, i.e., $\phi(x) \leftrightarrow \psi_1(x) \vee \dots \vee \psi_n(x)$. Then, if each of $\psi_1(x) \dots \psi_n(x)$ denotes a property, there is a property which $\phi(x)$ denotes.

Suppose that the pluralist holds that each of $T_1 \dots T_n$ denotes a property and that [Magic] is granted. Then the metaphysical pluralist is in trouble: by assumption, each of $T_1 \dots T_n$ denotes a property. So, by [Magic], T_G denotes a property, and so, (TG*) holds, contra strong metaphysical pluralism.

There are, of course, people who will bark at (highly) disjunctive properties. Consider, e.g., all one-place predicates which denote a property and use these to form a complex disjunctive predicate. This complex predicate will have as disjuncts as diverse predicates as “ x is a natural number” and “ x is a cow”. According to [Magic], there is a property which is denoted by the complex predicate. Cows have this property, as do natural numbers. Indeed, everything that has a property which is the denotation of a one-place predicate will have it. Some might find such a property rather bizarre. But is there any principled reason why one might reject it?

There is indeed such a reason, *viz.* the sparse conception of properties. This conception contrasts with the abundant conception of properties.

Sparse properties “carve up things at the qualitative joints”. Things that share a sparse property do so because of some qualitative similarity. Cows are qualitatively similar. They eat the same kind of things, and their bodies are constituted by the same kind of material. Abundant properties, on the other hand, do not carve things at the joints. There need not be any qualitative similarity between the things that share an abundant property. On this view, for every set, there is a property which exactly the members of the set share – *viz.* being a member of that set. Abundant properties can be as disjunctive as you like. The abundant theorist believes in [Magic], while the sparse theorist does not.

Consider the candidate property of being a cow or a natural number. It does not carve things at the joints. Cows and numbers have nothing in common. Thus, on the sparse conception, we are not

dealing with a property properly so-called. According to the abundant conception, however, being a cow or a natural number does qualify as a property. For every set of things, there is a corresponding property – and hence, since there is a set of cows and natural numbers, there is a corresponding (disjunctive) property. The sparse theorist will stamp her foot and insist that cows and natural numbers have nothing in common. The abundant theorist might reply that they *do* have something in common – viz. being a cow or a natural number. The sparse theorist will take issue with this reply, maintaining that the “property” in question does not carve things at the joints. The supposed similarity is not a qualitative similarity, but a merely logical one. Anything which is a cow is, by logic, also a cow or a natural number, and conversely, anything which is a natural number is, by logic, also a natural number or a cow.

According to the alethic pluralist, truth is many, not one. This is because what counts as truth varies from domain to domain. For some domains, the truth property might be heavyweight by bringing on a commitment to realism about the entities of those domains, while, for other domains, the truth property might be lightweight by not bringing on a commitment to realism about the relevant range of entities. There is no reason to expect truth to have the same nature across domains. This says, or comes close to saying, that there is no *qualitative* similarity between the truth properties associated with the truth predicates of the domains of discourse that deal in truth apt statements. One natural suggestion is thus that the pluralist idea that truth is many rather than one goes hand in hand with a sparse view of properties.

Though the alethic pluralist might grant that there is a truth property for each (non-generic) truth predicate and she might grant (TG), she should deny (TG*). The reason is that the comprehension principle needed to make the transition from (TG) to (TG*) clashes with the sparse theory of properties that seems to be a natural companion to alethic pluralism. Truth is many rather than one, because the properties that count as truth within the truth apt discourses are qualitatively different. Consequently, there is no reason to suppose that there is a generic truth property, sparsely construed.

6. Plurals

The following view is not uncommon: first-order logic is quantification over individuals, and second-order logic – the logic of quantifying into predicate position – is quantification over properties. In the context of alethic pluralism, this approach would have it that, when the pluralist says that each truth apt discourse has a designated value associated with it, then there is something all true propositions have in common – *viz.* being a designated proposition. Indeed, this is exactly what Tappolet says (here in the particular case of two designated values), “... sentences which are T_1 or T_2 share a common feature – they are designated” (Tappolet 2000: 384). This would be expressed by (TG*), i.e., $(\exists X)(\forall p)(X(p) \leftrightarrow T_1(p) \vee \dots \vee T_n(p))$. On the standard view on second-order logic, the semantic value of X is a property, singularly construed.

The appeal to the sparse conception of properties made in the previous section goes hand in hand with a rejection of (TG*). The consideration just offered might, however, be taken to suggest that the pluralist is committed to (TG*) after all. So, it is worth exploring whether the alethic pluralist can embrace (TG*) without committing herself to the existence a generic truth property. In this section, it will be argued that she can do so by invoking Boolos's plural interpretation of second-order quantification (see Boolos 1984 and 1985).

The language of plural logic is obtained from the language of first-order logic by adding the following items: (a) singular first-order variables: x_i ; (b) plural first-order variables: xx_j ; (c) a two-place logical relation: $<$ (first-argument place to be filled by singular arguments, the second by plural arguments. “ $x_i < xx_j$ ” is read “ i is one of them $_j$ ”); (d) a plural quantifier: $\exists xx_i$ (there are some things $_i$; interpreted so as to allow that the things $_i$ be just one).

Translate between (monadic) second-order statements and statements of plural logic as follows:

- (i) $Tr(Xx_i): x_i < xx_j$
- (ii) $Tr(\neg\Phi): \neg Tr(\Phi)$

- (iii) $Tr(\Phi \ \& \ \Psi): Tr(\Phi) \ \& \ Tr(\Psi)$
- (iv) $Tr((\exists x_i)\Phi): (\exists x_i)Tr(\Phi)$
- (v) $Tr((\exists X_j)\Phi): (\exists x x_j)(Tr(\Phi) \vee Tr(\Phi^*))$

For example, (i) tells us that “ x_i is X_j ” translates as “ it_i is one of them $_j$.” In (v), Φ^* is the result of substituting $x_i \neq x_i$ for $X_j x_i$ in Φ . The second disjunct is needed to deal with cases in which the interpretation of X_j is such that no object falls under it.

Consider the following weakening of [Magic]:

[Magic#]:

Let $\varphi(x)$ be a complex disjunctive predicate, i.e., $\varphi(x) \leftrightarrow \psi_1(x) \vee \dots \vee \psi_n(x)$. Then, if each of $\psi_1(x) \dots \psi_n(x)$ denotes, then so does $\varphi(x)$.

[Magic#], unlike [Magic], does not incorporate the assumption that the denotation, or semantic value, of a predicate is a property. By appealing to the plural interpretation, the alethic pluralist can embrace (TG*) while granting the abundant theorist that every disjunctive complex of denoting predicates denotes (that is [Magic#]), but without committing herself to the existence of a generic truth property.

The second-order statement $(\exists X)(\forall p)(X(p) \leftrightarrow T_1(p) \vee \dots \vee T_n(p))$ – i.e., (TG*) – translates into the language of plurals as follows:

$$(\exists x x_j)[((\forall p_i)(p_i < x x_j \leftrightarrow p_i < t_1 \vee \dots \vee p_i < t_n) \vee (\forall p_i)(p_i \neq p_i \leftrightarrow p_i < t_1 \vee \dots \vee p_i < t_n))]$$

The formula – call it “(TG#)” – says, “There are some things $_j$ – them $_j$ – such that for all p_i , it_i is one of them $_j$ if and only if it_i is one of them $_1$ or ... or it_i is one of them $_n$.” The plural approach incorporates the idea that in order to talk about the designated propositions, we need not commit ourselves to the

existence of the property of being designated. All that is needed for such talk is the designated propositions *themselves*.⁶ The witness – or rather, the witnesses – to the plural existential are thus the designated propositions.⁷

Therefore, the alethic pluralist can embrace (TG*) without committing herself to a generic truth property, considered as a unity. She can do so by cashing out the quantification of *X* in terms of plurals, as done in (TG#) (note that the plural approach has been applied to truth properties across the board and not only to the alleged generic truth property). Thus understood, (TG*) does not clash with alethic pluralism by saying that truth is one. Because, in the proposed framework, there is no single thing – i.e., no “one” – that truth could be.

Bearing these things in mind, we can return to the pluralist account of validity and formulate it explicitly in terms of designated propositions:

[Pluralist plural account of validity]:

An argument is valid provided that (necessarily) if the premises are among the designated propositions, then the conclusion is among the designated propositions.

Hence, the alethic pluralist can hold on to her account of validity and grant that highly disjunctive predicates denote – in particular, that the generic disjunctive truth predicate does – without committing herself to the existence of a generic truth property, singularly construed.

7. Lessons learned?

In Section 1, it was announced that two responses would be provided to the problem of mixed inferences. These responses were provided in Sections 5 and 6 respectively. We now turn to the second task of this paper, that of reflecting on what we can learn about alethic pluralism from what has been said so far. I will suggest that a little reflection shows us two things: firstly, that there is a problem

much more basic than the problem of mixed inferences – what will be referred to as the “unity challenge” – and secondly, that, like truth, alethic pluralism itself is many rather than one. It is so in the sense of not being a single view, but rather a family of related views among which we can nevertheless find significant differences in terms of philosophical commitments.

Let us first turn to the unity challenge. In fact, the unity challenge was formulated – though not explicitly labeled – before we moved on to the task of responding to Tappolet's objection. As seen in Section 4, she considers the generic truth predicate T_G specifically in the context of mixed inferences. However, it was observed that, if T_G leads to trouble, it does so independently of considerations on mixed inferences. Its introduction by itself invites the question whether the main thesis of alethic pluralism – *viz.* that truth is many rather than one – can be coherently maintained. The idea was that as soon as the pluralist thesis is formulated, T_G can be introduced – thus landing the pluralist in trouble, because truth turns out to be one rather than many after all. This is what I call “the unity challenge”.⁸

In light of the distinction drawn in Section 5 between linguistic and metaphysical versions of pluralism, we need to complicate matters a bit and draw a corresponding distinction between respectively a linguistic and a metaphysical version of the unity challenge. What was just sketched is the linguistic version, according to which there is a generic truth predicate, as captured by (TG). According to the metaphysical version, there is a generic truth property, as captured by (TG*).

One reason why it is important to formulate the unity challenge explicitly and to recognize it as a distinct challenge is its fundamental character. It is an attack on the very coherence of alethic pluralism. In this sense the challenge is more basic than the problem of mixed inferences. If the unity challenge cannot be met, the pluralist project could not even get off the ground. It would be a non-starter, and the problem of mixed inferences would not even arise. Of course, this would not offer any comfort to the pluralist, because she is freed from the problem of mixed inferences in this way only at the cost of having to face an even more fundamental problem.

Thus, it is reasonable to enquire what the alethic pluralist should say in response to the unity

challenge. Fortunately, what was said in Sections 5 and 6 does address the challenge. To see this recall that what we discussed was the question whether there is a *generic* truth predicate and the question whether there is a *generic* truth property. As suggested, it is plausible to suppose that there is a generic truth predicate – it can be introduced by (TG). However, though the linguistic unity challenge is compelling, it is so only against rather uninteresting versions of alethic pluralism. The metaphysical formulation of the unity challenge does pose a threat to interesting versions of pluralism, but, as argued, there are strategies available to the pluralist which will block it.

Let us now move on to the second point on the agenda of this section, i.e. let us say something about how the considerations offered so far show that alethic pluralism is not a single view, but rather a family of views.

The strategy behind the arguments given in Sections 5 and 6 was to take issue with the comprehension principle [Magic]. The first response found trouble with the abundant conception of properties – the conception of properties supporting [Magic] – by suggesting that its opposite, the sparse conception, is a natural companion of alethic pluralism. This tells us something substantial about the philosophical commitments of someone who wants to adopt this line of response to defend pluralism. There are such things as properties, or, rather, there are such things as *sparse* properties. In particular, for every truth apt discourse, there is a property which true sentences of that discourse share because of some qualitative similarity. (If we are dealing with a domain of discourse which is robustly truth apt, the similarity in question might very well be given by a correspondence between what the true sentences say and their subject-matter, realistically construed.)

However, some people are not very fond of properties, and hence, appeal to the sparse conception of properties will not make for a happy fit with their philosophical outlook. Does this mean that such people have no way of blocking Tappolet's objection and should be less attracted to alethic pluralism as a result thereof? Arguably not. Recall the response to the charge that the pluralist might be committed to (TG*) – and so, to a generic truth property – after all. Using Boolos's plural interpretation

of second-order quantification, it was argued that one can accept (TG*) without committing oneself to the existence of a generic property of truth, singularly construed. The reason was that, from the plural quantification point of view, talk of the designated propositions does not require that there be such a thing as the property of being designated – we just need the designated propositions themselves. If this idea is applied in full generality, we have a version of alethic pluralism which does not make reference to sparse properties – indeed, to any properties of whatever kind. This tells us that a version of alethic pluralism is available to someone who does not believe in properties.

There is yet another version of alethic pluralism, which is obtained by combining the two versions just sketched. The version I have in mind says that there is a plurality for every set of things, whether or not they are qualitatively similar, and, in addition, that provided the objects of a plurality are qualitatively similar, there is a property which exactly these objects have. In other words, pluralities have taken the place of abundant properties, and properties are simply taken to be sparse. It should be noted, however, that the switch is not merely terminological. It matters that we speak of pluralities rather than abundant properties, because the latter would leave the impression that objects with a given property could be conceived as one. This is exactly what we want to avoid by speaking of pluralities.

The attraction of this third version is that we seem to be able to have it both ways – in the sense that we can accept [Magic#] as well as [Magic], maintaining that the former holds for pluralities, while the latter only holds when restricted to properties. For every truth apt domain of discourse, there is a truth property, because true sentences of the discourse are qualitatively similar. They are so by virtue of being true in the same way – correspondence, say, for discourses with a robust notion of truth. However, [Magic] does not deliver a generic property of truth since there is no qualitative similarity unifying each proposition true in some discourse. Now, by [Magic#], we are committed to (TG*). However, given our plural understanding of [Magic#], the semantic value of the existential in (TG*) is a plurality – *viz.* the designated propositions – and cashed out in this way (TG*) does not conflict with the pluralist thought that truth is not one, but many. There is no “one” that truth could be.

8. Conclusion

Talk about tables and chairs seems fundamentally different from, say, moral talk. For those attracted by the thought that this difference should be reflected at the level of truth, alethic pluralism is an attractive position. It allows truth to be robust for some domains of discourse, while non-robust for others.

Here I have pursued two tasks. First, two responses were given to Christine Tappolet's objection from mixed inferences – thus suggesting that the objection gives us no reason to be sceptical about the viability of a position – alethic pluralism – that allocates space for the idea of truth as robust and its opposite. Second, through reflection on the responses provided, we identified a problem – the unity challenge – seemingly more basic than the problem of mixed inferences, and we formulated three versions of alethic pluralism which differed considerably with respect to their philosophical commitments.

Let us conclude by answering the question posed in the title of the paper. The problem of mixed inferences does indeed teach us something about alethic pluralism. However, contrary to Tappolet's contention, reflection on the problem does not show that alethic pluralism is wrong, but rather that it, like truth, is many rather than one. Alethic pluralism comes in different versions, each with its own distinctive philosophical theses. Some versions countenance properties, other versions reject properties and talk about pluralities instead, and yet other versions find a way to accommodate both.

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¹ I would like to thank Elizabeth Barnes, Eline Busck, Ross Cameron, Roy Cook, Philip Ebert, Patrick Greenough, Carrie Jenkins, Darren McDonald, Aidan McGlynn, Daniel Nolan, Carlotta Pavese, Stig Alstrup Rasmussen, Marcus Rossberg, Stewart Shapiro, Crispin Wright, Robbie Williams, and Elia Zardini for helpful comments on earlier versions of this paper. During the time the paper was written I held an Arché Studentship and a Ph.D. scholarship for studies abroad from the Danish Research Agency. I gratefully acknowledge the financial support of these institutions.

² Armstrong is one of the most prominent truth-maker theorists. Cf. Armstrong 1997 for details. There is no widespread agreement as to the ultimate nature of truth-makers. Armstrong takes them to be states of affairs. Other authors take them to be tropes and yet others facts – indeed, the literature contains further proposals than these. What truth-maker theorists do agree on, however, is their approach. They investigate the role played by truth-makers by considering what principles truth-makers must satisfy, whatever their nature is. The key principle is what is often referred to as the “truth-maker axiom”. According to this principle, whatever is true is so in virtue of there being something that makes it true.

³ There are, of course, many-valued logics with more values than three, but this will not matter here. All that is needed to run Tappolet's objection is at least two positive values.

⁴ This is a straightforward way of adding detail to Tappolet's talk of “minimal truth” in Tappolet 1997, where this kind of truth is conceived as “shared by all sentences true in some sense.”

⁵ In the quote Tappolet only gives the right to left conditional of (TG). However, since $T_1 \dots T_n$ are supposed to be *all* the ways of being true, the converse conditional should hold as well.

⁶ In the terminology of Cartwright 1994, the idea that talk about the *F*'s does not require the existence of the property of being *F* but only the *F*'s themselves amounts to a rejection of the All-in-One Principle.

⁷ The translation treats propositional variables as something that can be quantified using singular first-order quantifiers. Standardly, propositional variables are treated as a special case of predicates, *viz.* zero-place predicates. For $n > 0$, n -place predicates are quantified using second-order quantifiers. Someone might maintain that, if the syntactic treatment of propositional variables suggested by the standard approach is to be completely general, propositional variables should be quantified using second-order quantifiers. In that case the formulation of (TG*) should be moved up one level so the initial existential quantifier is third-order and the universal quantifier second-order. Accordingly, in (TG#), the initial existential quantifier should range over pluralities of pluralities while the universal quantifier would be a first-order plural quantifier. Rayo MS shows how the plural approach can be extended to an infinite hierarchy of languages.

However, if the order of the quantifier is determined by the kind of thing that is taken to be the semantic value of the variables, it is by no means obvious that quantification over propositions cannot be regarded as first-order. That is to say, it is by no means obvious that propositions cannot be regarded as individuals. Alternatively, the universal quantifier can be taken to range over *names* of propositions.

⁸ Gila Sher speaks of the “disunity challenge”, the challenge of giving an account of what is common between, or unifies, truths across discourses. See Sher (2004). To take the challenge seriously is, implicitly, to be committed to some version of alethic monism – the view that truth is one. The unity challenge and the disunity challenge can be regarded as opposites. While the former challenges the alethic pluralist to resist the conclusion that truth is one, the latter challenges the alethic monist to resist the conclusion that it is many.