

## A Critique of Yablo's If-thenism

Bradley Armour-Garb & Frederick Kroon

In "If-Thenism" (2017), Stephen Yablo's stated goal is to provide a reading of a sentence like

(A) The number of planets is eight<sup>1</sup>

with a sort of content on which it fails to imply

(B) Numbers exist.

He thinks there must be such a content (Yablo 2014, p. 167 calls it the "real content") since we would deem it inappropriate for someone to reject (A) on the grounds that she didn't believe numbers existed. Of course, if there are no numbers then, given its face-value reading, (A) is not true in virtue of containing an empty definite description (viz., one that fails to denote anything). Moreover, if (A) is given a face-value reading, then a speaker of English who is committed to what (A) expresses is also committed to what (B) expresses, and so in affirming (A) expresses her commitment to numbers. (This is because Yablo (Ibid.) takes (B) to be the "presupposed content" of a face-value reading of (A).) But Yablo argues that there is a reading of (A) on which it is true and does not commit those who accept (A) to numbers.

In order to argue that there is a reading of (A) that is true and does not commit those who accept (A) to numbers, Yablo (2017) proposes to improve on classical If-thenism, which

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<sup>1</sup> Of course, as we all learned in logic class, any numerically definite sentence (e.g., 'There are exactly eight planets', 'There are at least eight planets', 'There are at most eight planets'; more generally, 'There are at least/at most/ exactly n X', for any numeral 'n' and count-noun 'X') can be represented by a formula of first-order logic in which no numerals appear at all. Such sentences therefore do not commit its users to any numbers. Thanks go to an anonymous referee for convincing us to mention this important point. It is also worth noting that, while the success of this translation-pattern would not commit users of such talk to numbers, this is in contrast with a standard representation of (A) given the resources of first-order logic, which would commit its users to numbers. (We are taking it for granted that the predicate 'number' in a sentence like (A) can't be logically analyzed away in terms of ordinary quantifiers; in particular, (A) can't be logically analyzed as 'There are exactly eight planets', something that should be obvious from the ubiquity of numerically indefinite sentences that resist any such analysis (e.g., 'The number of planets is less than the number of stars').)

emerged out of Bertrand Russell's (1903) considerations and was then sharpened by Terrence Horgan (1984). In this paper, we critically evaluate Yablo's form of If-thenism. As we will argue, his attempt to avoid a commitment to an instance of "number-talk" like (B), while still maintaining the truth of (A), fails. If we are right about this, then Yablo's form of If-thenism is a non-starter.

The plan for this paper is as follows: In §1, we explain Yablo's form of If-thenism, and, in §2, we provide our case against Yablo's proposal. §3 considers some responses on behalf of Yablo, and §4 concludes.

## 1. Yablo's form of If-thenism

Yablo's proposal for how to avoid an ontological commitment to what is expressed by (B), while still accepting (A) as true, is to conditionalize on (B) by employing a reading of a conditional that makes use of a non-truth-functional operator ' $\sim$ '. His claim is that, when one assertorically utters (A), the real content that gets expressed through her utterance is

(C) The number of planets is 8  $\sim$  Numbers exist [i.e., (A) $\sim$ (B)],

which is a conditional whose antecedent is 'Numbers exist' (i.e., (B)) and which does not entail (B) because (B) is "subtracted" from (A). (On Yablo's informal rendering of the notion of subtraction as it applies to (C), (C) can be read as 'The number of planets is eight, except maybe for the existence of numbers', or '..., ignoring the bit about the existence of numbers', etc.; Yablo 2017, p. 125). If Yablo's if-thenist proposal works, then speakers who assertorically utter the likes of (A) do so without taking on any ontological commitment to numbers. In turn, this is

intended to vindicate the challenge that is presented to nominalists and antirealists about mathematics, in light of the seeming indispensability of number-talk.

One of Yablo's goals for his If-thenism is to read (A) in such a way that it affirms

(D) There are eight planets,

which Yablo (Ibid.) describes as the "asserted content" of an assertoric utterance of (A) once it is read as (C). As he says (Ibid., pp. 123-4), "[t]he only kind of if-thenism that stands a chance is the kind that treats 'If [(B)] then [(A)]' as expressing whatever it is that bridges the gap between [(B)] and [(A)]." What he takes it to affirm is (D), which is precisely what bridges the gap between (A) and (B).

To understand Yablo's framework, as developed in his (2014) and sharpened in his (2017), we need to distinguish the *real content* of a sentence from both its *presupposed content* and its *asserted content*. For Yablo, the real content is what actually is said by an assertoric utterance of a sentence. As he (2014, p. 167) says, the real content of a sentence is "what the sentence is (rightly) taken to say on some occasion". Since Yablo takes (A) to be read as (C), when one assertorically utters (A), its real content is what (C), viz., '(A)~(B)', says. If (A) were given a face-value reading (what Yablo (2014, p. 167) calls its "semantic content"), then its presupposed content would be (B). In addition, when one assertorically utters (A), which is now read as (C), the asserted content, which is what the speaker affirms, is (D), which Yablo describes as the "remainder" when (B) is subtracted from (A).<sup>2</sup> This makes sense: When a speaker assertorically utters (A), what she aims to convey is (D). If (A) is read as (C) then since

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<sup>2</sup> Yablo (2014, p. 148) takes his notion of subtraction and remainder to work by analogy with subtraction and remainder in arithmetic. Since (D) is the remainder when (B) is subtracted from (A), he maintains that when you add (D) to (B), what you get is (A).

(C) does not presuppose (B), it amounts to a form of subtraction of (B) from (A), which yields precisely what we are claiming the speaker affirmed and aimed to convey, viz., (D).

While Yablo's discussion as to how assertorically uttering (A) enables speakers to affirm (D) is interesting in its own right, it is not relevant to the points that we will make in this paper. What is important for our purposes is Yablo's claim that reading (A) as (C) shows how speakers can utter something that is true without taking on a commitment to numbers. Clearly, if this is one of Yablo's primary goals, then if (C) ends up as untrue, this would undermine a central feature of Yablo's (2017) project. We think that this is indeed the case: When (A) is read as (C), the sentence so read ends up as untrue. If we are right about this, then in assertorically uttering (A), speakers would not succeed in conveying its asserted content (D), and so they should not assertorically utter (A). If so, Yablo's project would effectively collapse.

## 2. Our Case Against Yablo's If-thenism

To make our case for the collapse of Yablo's project, we raise a problem that has gone virtually unnoticed in the literature. The problem, in brief, is that the viability of his proposal hinges on the status of the term 'number'. Suppose, as seems *prima facie* plausible, that the term purports to name a kind of entity. In that case, should it be true that numbers don't exist, then it will turn out that 'number' is an "empty" kind term. But in that case, it is plausible that the term 'number' necessarily fails to refer to, or to denote, any kind of thing. This case would be analogous to the case of 'unicorn', which necessarily fails to denote any kind of thing for the reasons Kripke provides in *Naming and Necessity* and elsewhere. (The analogy is noted and expanded upon in

Sorensen (2018): If, for example, ‘god’ purports to name a kind of thing and if there are no gods, then ‘god’ necessarily fails to denote any kind of thing.<sup>3</sup>)

Such a conclusion would exact a hefty price. Most importantly, from the point of view of the present paper, it would appear to spell the end for Yablo’s project. Yablo asks how in graphical terms we are to “solve” for an equation like ‘ $X \sim Y = R$ ’ (where  $Y$  is a face-value implication of  $X$  that is stripped away in  $X \sim Y$ , and  $R$  is the remainder), and then provides an informal answer that he tightens up in the ensuing discussion:

R informally speaking is the result of extending  $X$ ’s behaviour at home, where  $Y$  holds, to the away region, where  $Y$  is false. (Ibid., 127; Yablo’s actual formula uses different letters.)

Here the home and away regions are *modal* regions. They are sets of possible worlds:  $X$ ’s home region is the set of worlds where  $Y$  is true,  $X$ ’s away region is the set of worlds where  $Y$  is false.

But take  $(A) \sim (B) = (D)$ , where  $(B) =$  ‘Numbers exist’. Yablo faces two problems. First, if numbers exist, then they surely do so necessarily, in which case there is no making sense of an away region in which  $(B)$  is false. (See Mary Leng (2017) on this point.) Yablo responds that even so we have to be able to make sense of there being no numbers. There is, he reminds us, a notion of set (‘SET’) that “allows more than one empty set, according to the type of object that it would have contained, if objects of that type existed”. We can then say:

The SET of worlds with finitely many stars is distinguishable from the SET with finitely many stars and numbers, even if they agree in their membership. Once this is taken on board, we may want to recognize numberless worlds after all. (Ibid., 218)

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<sup>3</sup> Sorensen is silent on the Kripkean argument that leads to this conclusion, but the argument presumably goes as follows. A god is the kind of thing whose unknown underlying nature is the source of such-and-such marvelous powers. But nothing has such powers in reality. So, there are no gods, and in fact there couldn’t be any gods because there is no underlying property that we can now refer to in order to decide which, in any given world, are the gods in this world.

This might work, always assuming that we can make sense of the notion of a SET. (Another way might be to add impossible worlds to the mix. We leave this alternative as something that an interested reader might pursue.)

Our problem, in any case, is different. What if numbers don't exist? (This is an important possibility; in fact, it is what motivates Yablo to search for an appropriate form of if-thenism.) In that case, 'number' is an *empty* kind term, assuming it is a kind term. As before, a feature of empty kind terms is that they can't possibly denote anything, so that (B) would necessarily be untrue (Kripke 1980, Sorensen 2018). So, this time it is "home worlds" that (A) lacks, worlds in which (B) is true. But worse is to come: the reason why empty kind terms can't possibly denote anything is not that there are associated (perhaps rigidified) conditions that nothing could possibly meet, but that there are no such conditions in the first place. The terms are, to that extent, "meaningless" or "void", which is the price empty kind terms pay for reference failure (Sorensen, *Ibid.*, 374). But it seems clear that sentences that contain meaningless terms do not say anything. (Cf. Armour-Garb and Woodbridge 2015.) Kripke makes a similar point about mythical terms like 'dragon' and 'unicorn': Given that there are no dragons or unicorns, even the counterfactual 'there might have been dragons/unicorns' is "ill-defined" rather than false (Kripke 2013, p. 47 fn. 15).

The upshot of this argument is that Yablo's if-thenist conditional (C) fails to say anything if nominalism is true. Unlike the situation in which numbers necessarily exist, this problem cannot be overcome by using other logical resources, such as SETS or impossible worlds, to make sense of (A)'s behaviour at home and away. The problem is now much more severe: The conditional lacks content. Since his account of this conditional finds its roots in Yablo (2014)

and appears again in Yablo (2017), if his proposal cannot be sustained, this creates a serious problem for some of Yablo's most recent work.

### 3. Yablo's Defense of If-thenism

Yablo (2017) responds to an early version of this argument (in Armour-Garb & Kroon 2017) by focusing on two claims that are integral to the argument. First, he objects to the contention (i) that 'number' should be understood on the model of an empty kind term, where empty kind terms have the sort of semantics described above. Second, he objects to the contention (ii) that if this is the right model for 'number', then (C) is without a truth-value. He thinks (C) can still be true, rather than being without a truth-value. We have serious doubts about both replies.

Take his rejection of (i).<sup>4</sup> Rather than taking 'number' to function as kind terms tend to function, Yablo (Ibid., p. 222) proposes a descriptive definition of 'number' as "entity suited by nature to serve as a measure of cardinality, and that has no more to its nature than that". We have two main worries about this proposal. First, his proposed definition doesn't account for all aspects of the concept of number. Cardinality is just one aspect of the concept of number; ordinality is another. In addition, his proposal seems applicable only to the natural numbers and does not apply to the integers, which can be negative or non-negative. As a result, his proposed definition for 'number' fails to capture that concept. Before moving on, we consider a possible

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<sup>4</sup> Yablo actually denies that 'number' is a natural kind term, but our argument does not require that we think of 'number' as a natural kind term, if this is taken to depend on a strong contrast between the natural and non-natural. Our claim is much more modest; it is just that 'number' is a kind term. (Sorensen, Ibid., also uses the phrase 'natural kind term', but since he takes even 'god' to be such a term it is doubtful that he relies on a strong conception of the natural.)

objection to our worry about Yablo's proposed definition for 'number', followed by our response to this possible objection.

One might object that Yablo is only concerned with statements that purport to be about cardinal numbers, so there is no concern that his definition does not apply to the ordinals or even to negative numbers. We think that this is incorrect. Yablo needs to be able to account for statements that involve negative numbers and ordinals, too, but his definition fails for such cases. To show this, what we want are statements akin to (A) ('The number of planets is eight'), this time involving negative numbers and ordinals, that have presupposed content like (B) ('Numbers exist') and yield something like (A)'s asserted content (D) ('There are eight planets'). To this end, consider statements like the following:

(E) The result of subtracting the number of moons in our solar system from the number of planets is negative two hundred and six.<sup>5</sup>

(F) If we number the planets in order of distance from the Sun, Saturn is the sixth.

While we suspect it may be difficult for Yablo to make out the asserted content for (E) and (F), the real problem that we are raising is that if 'number' is given the definition that Yablo proposes, then it is impossible for (E) or (F) to deliver the asserted content that Yablo is after, even given all of Yablo's machinery. Hence, Yablo's objection to the claim that 'number' should be understood on the model of an empty kind term fails to undermine the worries that we are making about his (2017) response. (To be sure, Yablo might admit that he needs to provide similar accounts of mathematical objects for each of these categories, but that would involve

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<sup>5</sup> One can imagine a teacher assertorically uttering a statement like (E) to teach a class surprising scientific facts using what they have learned about negative numbers. (The number of moons in our solar system is in fact 214. Suppose the class had all thought there were more planets than there were moons.)



contending that ‘number’ is therefore ambiguous, which we take to be suspect on methodological grounds.)

A further worry is that, as it stands, Yablo’s definition is ambiguous between providing necessary and sufficient conditions for being a number (the *de dicto* sense of ‘nature’) and characterizing the (*de re*) nature that numbers allegedly possess. It seems clear that Yablo has the second sense in mind, since the first sense encompasses too many entities that in their various ways serve as a measure of cardinality (including Zermelo numbers, von Neumann numbers, and so on). But in this second sense, it is not at all clear that the problem we have described is avoided. On this account, ‘number’ applies to entities that, by their nature, serve *only* as a measure of cardinality. But that characterisation purports to fix the reference of ‘number’ as a kind of entity whose intrinsic nature is left a mystery: The problem is not that such a nature is contradictory; rather, it is that we have no coherent conception of a nature with those features. In that case, we should conclude that no determinate kind has been picked out, and that the term is therefore ill-defined. If so, then our problem has not been avoided, since that is precisely what we argued earlier.

Perhaps Yablo will simply deny that there are any empty kind terms on grounds that terms that are empty are not kind terms at all. There is some precedent for this. Kripke has claimed that fictional names are not names at all on account of being fictional. So, maybe Yablo will extend Kripke’s contention and claim that so-called “empty kind terms” are not kind terms at all on account of being empty.

This raises what we think is a good question, one that Sorensen (Ibid.) did not attempt to answer, viz., what would it be for a term to be an “empty kind term”? There seem to be two ways in which one could characterise a term as an “empty kind term”:

(1) An empty kind term is a kind term whose referent fails to apply to any samples.

(2) An empty kind term is a term that fails to refer to any kind.

(For (2), we will suppose that a “kind” is a property of some sort.)

To the extent that he is sceptical about the idea of empty kinds, we suspect that Yablo would prefer (2) to (1). For one thing, (1) seems problematic for the following reason: If we allow kinds to be properties of some sort, then we would read (1) as

(1\*) An empty kind term is a kind term that refers to a certain sort of property (a kind-property), but one that does not have any instances,

which would require a controversial commitment to uninstantiated kind-properties.<sup>6</sup> But apart from philosophical scruples one might have about such properties, it seems in any case clear that Yablo (and, indeed, Sorensen (Ibid.)) would not want to accept anything like (1\*). After all, if he is trying to avoid a commitment to numbers, he’d likewise want to avoid being committed to the abstract property or kind-property *number*. So, Yablo will likely opt for formulation (2), rather than for (1) (or (1\*)). But (2) is susceptible to the argument that ‘number’ is meaningless because it fails to denote any kind of thing, where, again, *kinds* are taken to be properties of some sort. This would yield the consequence that none of (A), (B) or (C) expresses a proposition. (Cf. Armour-Garb and Kroon (Ibid.) on this point.) Hence, Yablo’s objection to the contention that ‘number’ should be understood on the model of empty kind terms fails to compel.

We turn now to Yablo’s second objection, which is that, even if ‘number’ is an empty kind term, (C) can still be true, rather than without a truth-value, contrary to our earlier claim that, insofar as a sentence like (C) fails to express a proposition, the sentence lacks a truth-value relative to any possible world. Yablo (Ibid., p. 222) has this to say in response:

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<sup>6</sup> Cf. Armstrong (1978) for an influential argument against uninstantiated properties.

Kripke does say this in places. But he disputes it in more places. He disputes it, for instance, in the famous work on truth. The Liar sentence  $\lambda$  fails to express a proposition, Kripke maintains. Neither it seems does its conjunction with  $0 = 1$ . The latter is false, though, on account of 0's relations to 1.

Yablo thinks, then, that for Kripke a sentence might fail to express a proposition and still be true or false. He confirms this by providing two further bits of evidence. First, Kripke expresses sympathy for Strawson's (eventual) view that 'King of France'-sentences can be "something like" false, even though no statement has been made.<sup>7</sup> Second, in 'Vacuous Names', Kripke explains how a sentence like 'unicorns exist' can fail to express a proposition and still be false:

How can the statement that unicorns exist not really express a proposition, given that it is false? ... it is not sufficient just to be able to say that it is false, one has to be able to say under what circumstances it would have been true, if any. (Kripke 2011, p. 68)

We think that Yablo (Ibid.) has confused two issues: (a) whether a meaningful sentence, which for Kripke can be regarded as "an attempt to make a statement, express a proposition, or the like" (Kripke (1975), p. 699), succeeds in expressing a proposition, and (b) whether a sentence is meaningful in the first place. Failure to express a proposition in sense (a) is the result of the sentence not having determinate truth conditions despite being meaningful, and earns the sentence the *undefined* truth-value, *i*, which can be understood as "indeterminate" in accordance with the Kleene scheme. Failure to express a proposition in sense (b) (i.e., because the sentence lacks meaning) is the result of there being no "specifiable circumstances under which it has determinate truth conditions" (Ibid.), a status that means the sentence is, in Kripke's words, "ill-defined" (Kripke 2013, p. 47 fn. 15), rather than simply being undefined in truth-value. We

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<sup>7</sup> "[If] you put it to [someone] very categorically, ... first specifying an armament program to make it relevant and then saying 'The present king of France will invade us', the guy is going to say 'No!', right?" (Kripke, et al. [1974: 479]).

might call this second failure, with a nod to Yablo,<sup>8</sup> *catastrophic proposition failure*. In the case of a catastrophic proposition failure, the sentence does not have *any* value, even the value *i*.

Note that Yablo's three Kripke cases run (a) and (b) together. The first case, that of the Liar conjoined with the sentence '0=1', is a meaningful sentence that succeeds in expressing a proposition even if the first conjunct doesn't: It has the truth-value *f* (Kripke's own example is of the Liar disjoined with 'Snow is white', which carries the truth-value *t* [Ibid., fn. 17]). The second case is more telling. Kripke clearly regards a King-of-France sentence as meaningful (Ibid., p. 699), since the existence of a king of France would give it truth conditions, but he expresses support for Strawson's view that it fails to express a proposition. Despite this, such a sentence is "something like" false. The third case is the most telling of all: 'unicorns exist' is meaningless for Kripke and so is a case of catastrophic proposition failure. Even so, Kripke insists that the sentence is false!

But how, Yablo asks, can it be false in the absence of a proposition? He answers as follows:

One not outrageously implausible line on all this is that to count as false, a sentence *S* need only be false about a certain subject matter. *Unicorns exist* counts as false in the empty world because it is wrong about how many objects there are. *Numbers exist* counts as false in a nominalistic world because it is wrong about how many abstract objects there are. (2017, p. 223)

It will be clear by now that no uniform story is emerging about why we should be prepared to count all these cases as false in a sense relevant to the problem at hand. The first case may seem the clearest, even though it is worth noting that in Kripke's work on truth this kind of case is an outlier; Kripke usually treats failure to express a proposition as tantamount to having the undefined truth value, *i*.<sup>9</sup> And, while Kripke endorses Strawson's (eventual) view that King-

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<sup>8</sup> Cf. the idea of (non-) catastrophic presupposition failure in Yablo (2006).

<sup>9</sup> See, for example, Kripke (1975), fn. 18.

of-France sentences are “something like” false, the qualifier “something like” hardly sounds like a ringing endorsement of the claim that these sentences are *genuinely* false, viz., false in a semantic sense. Yablo’s account of the third case seems no less problematic. His explanation of why ‘Unicorns exist’ is false in the empty world does not carry over to explain why it is false in the actual world. Similarly, while ‘Numbers exist’ might be deemed false in a nominalist world because of how many abstract objects there are in that world, that explanation doesn’t carry over to a world in which there are some abstract objects but none corresponding to ‘number’.<sup>10</sup> We should be sceptical, therefore, of the possibility of finding an interesting semantic sense in which a sentence like ‘Numbers exist’ is both false and fails to express a proposition, let alone an interesting semantic sense in which ‘Numbers exist’ fails to express a proposition while still being *true* at a world. (We don’t, of course, deny that there is a sense in which what might be *conveyed* by an utterance of such a sentence may be false, including the metalinguistic claim that ‘number’ refers to a kind of entity.)

We can now strengthen our worry about Yablo’s (Ibid.) argument. Recall that there are two ways in which a sentence might fail to express a proposition, (a) and (b). Assume for the moment that a sentence like ‘Numbers exist’ is meaningful, but that it doesn’t express a proposition in any possible world. Because both (A) and (B) contain ‘number’ in extensional contexts, it follows that (A) and (B) both have the value *i* in every possible world, viz., that both are assigned a gap in every possible world. But on Kleene logic, whether weak or strong, the result of having two gappy formulae form a conditional is that it yields a gap, and so we would

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<sup>10</sup> We can’t, for example, say that ‘Numbers exist’ is false in such a world because it wrongly takes some of these abstract objects to be numbers. That forgets that if ‘number’ is an empty kind term, this explanation lacks content!

need a special reason why Yablo’s new non-truth-functional conditional ‘If (B) then (A)’, construed as ‘(A)~(B)’, is different.<sup>11</sup> Yablo has not provided such a reason.

But worse is to follow, if ‘number’ is meaningless or ill-defined (option (b)). The gappiness in this case seems far more severe than “merely” having value *i*, even in all possible worlds. Since we are taking ‘number’ to be a meaningless empty kind term (in virtue of (2)), (A) and (B) in that case suffer from catastrophic proposition failure. And because a sentence composed of sentences suffering from such failure will suffer the same fate, a conditional like ‘(A)~(B)’ is no different: it too lacks meaning.<sup>12</sup>

Let’s be clear on where we are at this point. Yablo (2014, 2017) has attempted to provide a means whereby (A) can be true without carrying with it a commitment to numbers. His proposal is that (A) is read as (C). We have provided two different reasons why (C) is untrue, on the assumption that there are no numbers. What we might call our “stronger claim” is that since ‘number’ is an empty kind term, both the antecedent and consequent of (C) suffer from catastrophic proposition failure in which case (C) does, too. In that case, (C) has no value, not even one that is undesignated.<sup>13</sup> Our “weaker claim” is that since ‘number’ is an empty kind term, both the antecedent and consequent of (C) have the value *i*, which is in accordance with the Kleene scheme. But barring special exculpating reasons not provided by Yablo, on both weak

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<sup>11</sup> Here is one kind of conditional that doesn’t have truth-value *i* when both antecedent and consequent are (meaningful) sentences with truth-value *i*:  $P \rightarrow Q =_{df} ((D(P) \wedge D(Q)) \supset (P \supset Q))$ , where  $D(R)$  means ‘it is determinately the case that *R*’ (so that  $D(i)=f$ ). ‘(A)~(B)’, by contrast, makes no use of the notion of *determinateness*, and is structurally much more like a standard conditional.

<sup>12</sup> The way meaninglessness spreads outwards is something that Kripke acknowledged long ago when arguing for using strong Kleene logic in preference to weak (Bochvar’s) logic in his work on truth: “... the disjunction of ‘snow is white’ with a Liar sentence will be true. If we had regarded a Liar sentence as meaningless, presumably we would have had to regard any compound containing it as meaningless also” (Kripke 1975, p. 700 fn. 17).

<sup>13</sup> As a reminder, a “designated value” is a value that is to be preserved in a valid inference. For logics that do not accept any contradictions, the designated value is 1. For a paraconsistent logic like Graham Priest’s *Logic of Paradox* (LP),  $D = \{i, 1\}$ , where ‘*i*’ informally means *both true and false*. For more on this, see Priest (2006).

and strong Kleene logic a conditional both parts of which have the value  $i$  itself has that value. Hence, even if Yablo were to argue against our stronger claim, given our weaker claim, it would still follow that Yablo's (C) does not receive a designated value and so can neither be asserted nor affirmed, given standard norms that govern those notions.

#### 4. Concluding Remarks

Yablo (2017) tries to improve on classical If-thenism, which emerged out of Bertrand Russell's (1903) considerations and was sharpened by Terrence Horgan (1984). As Yablo makes clear, his primary impetus for reading (A) as (C) is so one can assertorically utter (A), now read as (C), and thereby affirm (D) without taking on a commitment to numbers. As we have seen, if numbers do not exist, so that 'number' is an empty kind term, then sentences that contain that term in extensional contexts fail to express propositions and are either assigned no value or are assigned an indeterminate value, viz.,  $i$ , at any world. Thus (C) either has no value or has an indeterminate one, given the impetus for reading (A) in the way that Yablo proposes. And if (A), read as Yablo proposes, does not have a designated value at any world, then speakers should not assertorically utter it and thus are in no position indirectly to affirm (D), which was their primary reason for assertorically uttering the likes of (A) in the first place. Thus, if we are right, then the If-thenism that appears in Yablo (2014) and is sharpened and extended in (2017) cannot succeed.<sup>14</sup>

Dr. Bradley Armour-Garb  
Professor of Philosophy  
Chair, Department of Philosophy

Dr. Frederick Kroon  
Emeritus Professor of Philosophy  
School of Humanities, Faculty of Arts

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Humanities 259  
University at Albany—SUNY  
Albany, NY 12222

The University of Auckland  
Private Bag 92019  
Auckland, New Zealand

[barmour-garb@albany.edu](mailto:barmour-garb@albany.edu)

[f.kroon@aukland.ac.nz](mailto:f.kroon@aukland.ac.nz)

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