

A NOTE ON LOGICAL TRUTH

CORINE BESSON

ABSTRACT

Classical logic counts sentences such as ‘Alice is identical with Alice’ as logically true. A standard objection to classical logic is that Alice’s self-identity, for instance, is not a matter of logic because the identity of particular objects is not a matter of logic. For this reason, many philosophers argue that classical logic is not the right logic, and that it should be abandoned in favour of free logic — logic free of existential commitments with respect to singular terms. In most standard free logics, sentences such as ‘Alice is identical with Alice’ are not logically true.

This paper argues that this objection from existential commitments is somewhat superficial and that there is a deeper reason why ‘Alice is identical with Alice’ should not be considered a logical truth. Indeed, a key fundamental thought about the nature of logic is that a logical truth is true in virtue of its logical form. The fundamental problem I raise is that a sentence such as ‘Alice is identical with Alice’ appears to not even be true in virtue of its logical form. Thus this paper argues that given that such a sentence is not true in virtue of its logical form, it should not be counted as logically true. It moreover argues, on the same grounds, that even the sentences which free logicians regard as logically true shouldn’t be regarded as logically true. So in this sense free logic is no repair to classical logic.

I. Introduction

The paper is organised as follows. In sections II and III, I outline the standard problem of existential commitments for classical logic, as well as its standard solution in terms of free logic. Doing this will be useful to set up the key issue of the paper. Section IV then moves to considerations about logical form and outlines a new problem for sentences such as ‘Alice is identical with Alice’ being considered logical truths. Sections IV–XI put forward considerations meant to cast doubt on the idea that sentences such as ‘Alice is identical with Alice’ are logical truths in the formal sense. Section XII elaborates on these considerations and offers a way of thinking of the relationship of sentences such as ‘Alice is identical with Alice’ to logical truths proper.

II. The Problem

Classical logic counts sentences such as (1) and (2) as logical truths:

- (1) Alice is identical with Alice
- (2) Alice exists¹

Thus classical logic commits us to the existence of particular objects: (1) and (2) commit us to the existence of Alice.

One standard objection to classical logic is that sentences such as (1) and (2) should not count as logical truths: it cannot be a matter of logic that Alice is self-identical or that she exists. Intuitively, nobody's identity or existence can be a matter of logic.

Also, many philosophers think that logic is a priori. The objection against counting (1) and (2) as logical truths, then, is that it is intuitively false to regard the propositions expressed by these sentences as a priori. The reason for this is precisely their existential commitments. Nobody's identity or existence is a priori.²

One might be inclined to think that while (1) is logically true, or expresses an a priori proposition, (2) isn't. The reason for this would be that, at least *prima facie*, (1) seems to be a more plausible candidate for logical truth or apriority than a straight assertion of existence, as in (2). Be that as it may, since (1) classically entails (2), given classical logic, we should either count both as logically true and as expressing a priori propositions, or neither.³ Indeed, a principle along the lines of (SE) seems to underpin classical logic:

(SE) Meaningful singular terms are existentially committed — i.e. refer to existing objects.

Thus, by (SE), if 'Alice' is at all meaningful in (1) and (2), then Alice exists. This in turns means that if (1) is a logical truth, so is (2).

¹ Standard formulations of classical logic state (2) as the general claim that something is identical with Alice. Nothing hangs on this here.

² Those who think that logical truths are necessary would also not want to count (2) as a logical truth because, at least *prima facie*, (2) is contingent. I do not discuss the modal status of logical truths here.

³ Various things could be said here to block the conclusion that since (1) makes an a priori claim and (1) classically entails (2), (2) makes an a priori claim too. For instance it could be denied that if someone knows a priori that *p*, and *p* classically entails *q*, then they can (thereby) know a priori that *q*. This is a possibility that has been explored mostly in discussions revolving around so-called 'McKinsey arguments'. See for instance Wright (2003) and Davies (2003) for discussion.

III. Free logic

One standard response to these problems concerning existential commitments is to abandon classical logic in favour of free logic — logic free of existential commitments with respect to singular terms. Indeed, one argument for free logic concerns the possibility of there being empty singular terms in the language; in particular meaningful names that fail to refer to any (existing) object, such as, the names ‘Vulcan’ and ‘Pegasus’.

If such names are possible, as they seem to be, classical logic should be rejected: the rules of classical logic presuppose that there are no such terms in the language. That is to say, they presuppose that there exists a referent for each such meaningful term in the language, as stated in (SE). But (SE) cannot be true in light of the possibility of there being meaningful empty names.

The most common strategy to generate free logic⁴ is to try to block the existential commitments of sentences such as (1) and (2) by conditionalising the claims they make on the existence of the relevant objects — here, Alice. So on these ways of setting up free logic, it is not (1) and (2), but their so-called ‘hedged’ versions which are logically true, that is:

- (3) Alice is identical with Alice, if Alice exists
- (4) Alice exists, if Alice exists

Given a suitable free semantics, hedging would enable us to count sentences such as (3) and (4) as logically true, even supposing that the relevant names failed to refer to anything whatsoever.

However in what follows I will argue that (3) and (4) are not satisfactory because there seems to be a deeper problem with regarding (1) and (2) as logically true which carries over to (3) and (4). If so, we should address that problem before going for (3) and (4) and giving up on (SE).

IV. On logicity

To set up the problem, it is useful to step back a little and look at some orthodox criteria for logical truth. A standard, if vague, idea is that a logical truth is a truth that is true *no matter what*.

One gloss that is often put on this idea is that logical truths are true no matter what in the sense that they are *topic neutral*. Their truth does not depend on any specific subject matter. Of course this gloss is not yet very

⁴ See Burge (1974) for a very influential way of setting up free logic. See also Bencienga (1986) and Lehmann (2002) for good surveys of free logic.

precise and there are different ways of making it so. One such way is in terms of existential commitments, as stated in (EC):

(EC) A logical truth is a truth that is true *no matter what exists*.

On such an account of topic neutrality, then obviously (1) and (2) are not going to be logically true, because they are not true no matter what exists — their truth depends on the existence of Alice.

Another, more fundamental, way of understanding the idea that logical truths are true no matter what is through the traditional idea, which goes back to Aristotle, that logical truths are *formal*. If they are formal, they are in some sense purely *general truths* or truths that are true in virtue of their *logical forms*. This idea of generality is captured in (LF):

(LF) A logical truth is a truth that it true because of its *logical form*.

On standard formal accounts of logic, the logical form of a sentence is individuated by the logical constant(s) which occur(s) in it as well as the pattern of occurrences of its non-logical vocabulary. The upshot is that *any* sentence with the same logical form as a logical truth is itself a truth.

Notice here that (EC) and (LF) are not equivalent. For instance, if logic is formal, that does not mean that it is not existentially committed. On many accounts of formality, including Tarski's,⁵ (5) is formal and general in the relevant sense — every sentence of that form is true:

(5) $\exists x x = x$

But of course (5) is existentially committed.⁶ So there is a sense of logical truth in which the essential feature of a logical truth is that it is formal and where that leaves out the possibility of such a sentence being existentially committed.

V. A new problem

The question now is whether (1) and (2), although they are not logically true in the sense of (EC), are logically true in the sense of (LF). If they are logical truths in that sense, then, provided formality constitutes our canonical way of thinking about logical truth, the logical truths (1) and (2) of

⁵ See Tarski (1936).

⁶ Here, see Etchemendy's discussion of Tarski's formal criterion for logical truth in Etchemendy (1999). Etchemendy uses the issue of existential commitments to argue that Tarski's criterion is not extensionally adequate: it counts as logically true truths that should not be counted as such because they depend on extra-logical assumptions (e.g. about the size of the set-theoretic universe).

classical logic could indeed be regarded as such. One could disregard (EC) as a good test for logical truth.

Thus the question now is whether (1), for instance, is true in virtue of its logical form.⁷ One might think it is — because it looks like any sentence of that form is true. The logical constant which occurs in (1) is the identity sign ‘is identical with’ and the pattern of occurrence of the non-logical vocabulary is that two tokens of the same name, ‘Alice’, occur on each side of the identity sign.

The aim of the remainder of the paper is to show that (1) (and indirectly also (2)) is not a logical truth in this formal sense. Rather, the way it is true is very similar to the way sentences such as (6), which are obviously not logical truths, are true:

(6) Alice is happy.

The upshot of the discussion below is that there is a deeper reason why (1) and (2) are not logical truths than that of existential commitments. They are not logical truths because they do not appear to be formal in the required sense.

VI. The Strategy

My aim is to make a *prima facie* case for the claim that (1) and (2) are not logical truths on the grounds that they are not true in the sense of (LF). The strategy is the following. I shall bring forward three sorts of related considerations about (1) and (2), concerning:

- (i) Their truth-conditions.
- (ii) Their conditions of understanding.
- (iii) The conditions under which someone can be justified in believing or know the propositions they express.

What these considerations will adduce to is that, so far as they go, (1) and (2) are just like (6). This *prima facie* case suggests that there is nothing special about them with respect to logicity in the sense of (LF).

Two options

Two options are available to explain this apparent lack of special status:

On the one hand, we may say that logicity is *not at all* picked up on by ordinary conditions on truth understanding and knowledge. So it doesn't

⁷ For convenience I will, for the most part, focus on (1).

matter that the fact that (1) and (2) are logically true is not at all reflected by (i)-(iii).

On the other hand, we may say that since there is no more reason, in terms of (i)-(iii), to treat (1) and (2) as logically true, than there is to treat (6) as logically true, the former are not logical truths.

This paper sides in favour of the second option. Before proceeding, it is useful to outline one way in which, although perhaps initially attractive, the first option is not satisfactory. Doing this here will also help to fix ideas on a precise account of what is involved in understanding a sentence such as (1) which involves grasping its logicity.

The orthodoxy

The current orthodox account of sentences such as (1) goes as follows.⁸ (1) is a logical truth and the proposition it expresses is a priori. It is a priori because it is grounded in understanding: understanding (1) is sufficient for recognising the proposition it expresses as true. The expression ‘is identical with’ is a logical constant. To understand a logical constant, it is necessary to understand the logical principles which define that constant — typically its introduction and elimination rules. These rules are thought of as meaning postulates or implicit definitions of the relevant logical constant, which have to be mastered to count as understanding that constant. In particular, the law of identity, which says that everything is identical with itself, is one such principle. Thus, on this account, to understand (1) it is necessary to understand ‘is identical with’; this in turn requires understanding the law of identity of which (1) is an instance.

Two things are worth stressing here about this orthodox account of understanding, so as to anticipate basic objections:

First, one worry might be that the account is too demanding, requiring a competent speaker to master some logical rules in order to understand a logical constant. Typically, the defenders of the account grant that the sort of understanding involved in understanding implicit definitions can be *implicit*, and not at all articulated at the conscious level. And thus also saying that understanding (1) requires some appreciation of logicity is not saying that this logicity has to be explicitly recognised as such. For instance, such recognition can simply be implicit in speakers’ behaviour — in particular, in the manifestation of speakers’ inferential dispositions.

Second, one might worry about our justification for a given choice of logical rules — rules that are formal in the required sense. Philosophers who put forward these sorts of accounts of understanding the logical constants

⁸ See *inter alia* Boghossian (1996), Peacocke (2005), and Hale and Wright (2000).

draw from certain ideas of proof theory according to which a logical constant is characterised by its introduction and elimination rules. Crucially, the sort of criterion for logicality which proof theory endorses is the sort of formal criterion expressed in (LF), whereby a proof is a formal derivation. And so such accounts make use of the idea that the grasp of logicality which is (implicitly) involved in understanding a sentence such as (1) is that of (LF).

The foregoing discussion does not directly focus on the orthodox account, and indeed, this is an account I reject.⁹ But if, in light of this discussion, it is decided that the first option is to be favoured, that is, if it doesn't matter that the logicality of (1) and (2) is not at all reflected by (i)-(iii), then this orthodox account cannot be right, because it states that understanding (1) requires in some way understanding its logicality. If logicality is not at all (even implicitly) picked on by speakers, it cannot be the right account of understanding (1). So although the first option might look appealing, it is actually at odds with the orthodox account, which also looks appealing. In section XII, I will offer further reasons which speak in favour of the second option.

VII. Truth-conditions

Let us start with a key basic semantic consideration concerning the truth-conditions of (1) and (2). This key observation is that (1) and (2) are particular truths about Alice. Indeed the natural basic way of stating (1) and (2)'s truth-conditions is as follows:

- (7) 'Alice is identical with Alice' is true iff Alice is identical with Alice.
- (8) 'Alice exists' is true iff Alice exists.

On this account, (1) and (2) are particular truths about Alice, in that the particular individual Alice contributes to their truth-conditions. For instance, for (1) to be true, it has to be the case that Alice stands in the identity relation to herself; that she is identical to herself.

What is remarkable here is that a simple statement of (1) and (2)'s truth-conditions need not allude to the idea that they might be logical truths in the sense of (LF). From a basic semantic standpoint, (1) is a particular present tense truth about Alice and a statement of its truth-conditions need not allude to anything to do with logicality.

⁹ See Besson (2010) and (2012), where I argue against accounts of understanding the logical constants, on grounds that are not related to the discussion of this paper.

VIII. Understanding

This basic semantic observation should give us pause when we think about what understanding sentences such as (1) and (2) consists in. I shall now argue that to count as understanding (1) and (2), it is *neither necessary nor sufficient* to grasp in any way their alleged logicity. This claim is *prima facie* plausible, given that understanding a sentence is to a large extent understanding its truth-conditions, and that the basic truth-conditions for (1) and (2) are intuitively to be given in purely particular terms. But if this claim is true, this means that speakers can be fully competent with (1) and (2) in just the same way as they are with (6): there is not essential difference in what constitutes understanding in the two cases.

I consider objections to sufficiency and necessity in turn.

i. Sufficiency

It might be argued that it is sufficient to understand the logicity of (1) to count as understanding. Indeed, a common line of thought about (1) is that understanding it merely requires understanding the identity-sign and registering the fact that (1) has a certain pattern of occurrence of its non-logical vocabulary. This is because (1) doesn't express anything beyond its formal properties. In particular (1) isn't really about Alice and the fact that (1) contains the singular term 'Alice' is irrelevant to its truth.¹⁰

However, this line of thought doesn't work: it does not seem that to understand (1) it is sufficient to merely understand the identity-sign and register the fact that the sentence has a certain form. One way to show this is by considering the following sentences:

(9) Hugo is identical with Hugo.

(10) Pegasus is identical with Pegasus.

Consider (9) first. Intuitively (9) has different truth-conditions from (1) and moreover it is not synonymous with it: (1) and (9) express different propositions and so understanding one is not sufficient for understanding the other. The best explanation for this is that the particular individuals whom (1) and (2) respectively are about are different.

Now consider (10). On the proposed view of understanding, we should count as understanding (1) and (10) in exactly the same way — this is because they share their logical forms.

However, arguably, although (10) shares its logical form with (1), (10) can't be true and indeed presumably does not even express a (full) proposition. And so, arguably, in the case of (10) there is no (full) proposition to be

¹⁰ See Pryor (2006) for discussion.

understood.¹¹ This suggests again that there is more to understanding (1) than understanding its logical form.

So a purely formal understanding of (1) is not sufficient for counting as understanding (1). One also has to understand the singular term ‘Alice’, which contributes to its truth-conditions.

ii. *Necessity*

It might be thought that it is necessary to understand (1)’s logicity in order to understand it, even if it is not sufficient. For instance, you might think that although it is not sufficient to understand that (1) is true in virtue of its logical form to count as understanding (1), it is at least necessary to grasp, in some way or other, that (1) has a special status with respect to logicity.

However, I will argue that this is not even the case: understanding (1) is just like understanding (6). This is of course not to say that one may notice, when reflecting on (1), that if one substituted the name ‘Alice’ with any other meaningful name, one would get a truth. But that does not have to be part of one’s basic understanding of (1). To do so, I put forward three sorts of considerations.

(a) *Too demanding*

One consideration is the simple worry that it might be too demanding conceptually to require grasping some kind of logicity to count as understanding (1). If basic understanding required grasping logicity, many people who intuitively understand (1), wouldn’t actually count as such.

Of course, as noted before in section VI, those who defend the orthodox account will grant that understanding can be implicit, and so try to bypass the difficulty. But even if we conceded that understanding the logicity of (1) may be implicit, we would expect some kind of asymmetry in understanding between (1) and (6). And so the onus is on defenders of the orthodox view to show how this implicit understanding of logicity manifests itself in speakers’ behaviour (and of course not only in the behaviour of philosophers highly trained in logic).

(b) *Taking at face value*

It seems that (1) can be taken at face value. What does this mean? I borrow this phrase from Williamson,¹² who argues that in some contexts one can take a question such as (11) at face value:

(11) Was Mars always either dry or not dry?

¹¹ There are of course views on which (10) is not a defective sentence, is truth-value apt or indeed is true. The force of this part of the argument concerning sufficiency might not be felt to the same degree by those who endorse these less orthodox views.

¹² See Williamson (2007): 25 ff.

Here is one such context. Suppose that Mars is clearly dry but we suspect that it was once covered in water and that the water slowly evaporated. Presumably, for a long time, it was neither clearly dry nor clearly not dry. We have no idea how to investigate this issue but it would be nice to know whether to classify Mars as dry or not dry in these intermediate times. We wonder whether it was either dry or not dry and we ask (11).

Taking (11) at face value is thus taking it as a particular question about the dryness of Mars at a particular time. It is taking (11) in its concrete form, not simply as an instance of Excluded Middle, and also not as a meta-linguistic or metaconceptual question about the word(s) ‘dry’/‘or’/‘not’ or about the concept(s) of *dryness/disjunction/negation*. (11) *can* be taken at face value because *as such* (11) doesn’t attempt any sort of logical generality.

This of course is not to say that one may not come to appreciate that (11) is an instance of Excluded Middle, and generalise the question in various ways. Of course there is (put in the terms of the discussion here) logicity in the vicinity of this question. And we might come to appreciate this fact. But appreciating this fact is not a condition on understanding the question nor knowing its answer: the question can be understood as a particular question about Mars and can admit of a particular answer.

Equally, it looks like (1) can be taken at face value, in its concrete form, as a statement about the identity of Alice at a certain time. As such, (1) doesn’t attempt any kind of generality, and also it need not be taken as a meta-linguistic or metaconceptual claim. Thus, as stated, (1) is not a sentence about the expression ‘is identical with’ or the concept of *identity*. And it is easy to provide a context that highlights how it can be taken at face value. Suppose that the idea of a living being is vague — it is vague when composition results in a living being.¹³ Suppose also that we are expecting the composition of two beings — call them ‘Al’ and ‘Ice’ — to result in a human being any time now, which we have already decided to call ‘Alice’. It would be apt for me to ask you in this context:

(12) Does Alice exist (yet)?

(13) Is Alice identical with Alice (yet)?

These questions can perfectly well be understood as particular questions about Alice and they admit of particular answers about Alice. To understand these questions, it is not necessary to see any kind of logicity or generality or metaconceptuality in them. If this is the case, then *eo ipso* the same holds for (1) and (2).

What about sentences (3) and (4) or interrogative forms of them? Could they be taken at face value? It’s harder to find contexts for these because they, and especially (3), are such odd things to say. But their oddity has

¹³ See van Inwagen (1990): ch. 19.

nothing to do with their logicity: it would be equally odd to say: ‘Alice exists and Alice exists’. Still, we can imagine for instance that (4) is a good answer to (13): asked whether Alice is self-identical you might think that the answer depends on whether Alice exists; only if she exists can we give a non-conditional answer as to whether she is self-identical.

(c) *Conditionals and hedging*

A similar sort of consideration can be made using conditionals. Indeed compare (14) and (15):

(14) It’s raining, if it’s raining.

(15) It’s raining, if it’s Monday.

Someone who holds that (1) is a logical truth in the sense of (LF) is also going to hold that (14) is a logical truth in the sense of (LF); i.e. true in virtue of its logical form.

However compare (14) and (15). Arguably, (14) is just a special case of the conditional and does not semantically involve anything which is not involved in a less special conditional such as (15). So arguably the same basic capacities are involved in understanding both, and they need not speak to any kind of logicity: just like the same kind of basic capacities might be involved in understanding (1) and (6).

If that is so, we can now see why, although it might be apt regarding the issue of existential commitments, the strategy of free logicians of conditionalising existentially committed sentences on the existence of the relevant objects doesn’t help when logicity in the sense of (LF) is at issue. Indeed, the considerations put forward here about (14) naturally carry over to the free logician’s (3) and (4), and the considerations put forward about (14) are of exactly the same nature as those put forward about (1) and (2).

This concludes my initial discussion of why it is neither necessary nor sufficient to count as understanding (1) to understand that it has any special kind of status with respect to (LF). I will come back to this claim shortly, after considering how these considerations about understanding carry over to knowledge and justification.

IX. Knowledge/justification

The claims about knowledge parallel those just made about understanding: they are that in order to know or be justified in believing the propositions expressed in (1) and (2), it is neither necessary nor sufficient to grasp (in any way) their alleged logicity.¹⁴ As before, I take sufficiency and necessity in turn.

¹⁴ I frame the discussion in terms of knowledge. But justified true belief or another cognate notion would be adequate too. Also, when I appeal to the notion of justification, I do not

i. *Sufficiency*

Just as it is not sufficient to merely understand (1)'s logical form to count as understanding it, the proposition which it expresses cannot merely be known in this way either. That is to say, your justification for believing the proposition in (1) cannot derive purely from the fact that you recognise that it has a certain form such that any proposition of that form is true.

The reason for this is that if this sort of justification were indeed sufficient, you would be justified in believing (10) on exactly the same grounds as you would be justified in believing (1). However, intuitively, although you can know the proposition expressed by (1), you can't know the proposition expressed by (10). This is because either the proposition expressed by (10) is false or (10) does not even express a (full) proposition. A free logician might of course at this point offer a hedged version of (10) as a candidate: where the identity of Pegasus is conditional on its existence. Now, if (10) does not express a (full) proposition then the conditional expressed by the hedged version is not going to express a (full) proposition either. The natural thing to say in this case is that such a conditional could not be known, for it is not even truth-apt.¹⁵

The point about sufficiency can also be made in terms of apriority: the proposition which (1) expresses does not seem to be a priori. If (1) expresses a particular proposition about Alice, the fact that the particular object Alice exists is part of someone's justification for this proposition. That is, someone would need experience to believe the proposition expressed in (1), and arguably that sort of experience would be part of their justification, making that proposition a posteriori.¹⁶

ii. *Necessity*

To count as knowing the proposition expressed in (1) one need not grasp any kind of logicity in the sense of (LF). For one thing, it is natural to think that if, as I have argued, (1) can be understood as a purely particular sentence, it can also be known on purely particular grounds. The justification for one's belief that Alice is self-identical could just be about Alice's identity.

have a particular construal in mind — e.g., using the notion of warrant or that of entitlement instead would not make a substantive difference to the discussion.

¹⁵ See note 11 for contrasting views about whether (10) expresses a (full) proposition. Notice also that it is always possible to say that if both the antecedent and the consequent of a conditional lack truth value (perhaps because neither of them expresses a (full) proposition), then the conditional is true. I do not pursue this line of thought here.

¹⁶ Lots of moves are possible here to deny that the fact that Alice exists is part of one's justification. I cannot consider them here. See again Pryor (2006: 342) and (2008: 7) for discussion.

Again, intuitively people with no appreciation of logicality could count as knowing the proposition expressed in (1). But also, it seems that someone could count as knowing this proposition even if they were agnostic about the fact that everything whatsoever is self-identical — perhaps because they think that some classes of objects do not possess this property.¹⁷ So to know the proposition expressed in (1) it is not necessary to appreciate any kind of logicality in the sense of (LF).

X. Three objections

In section VII I argued that nothing in the compositional semantics of (1), or its conditions of understanding, needs to allude to any kind of logicality in the sense of (LF). One might take issue with this claim on three grounds.

First, stating the truth-conditions of (1) in terms of (7) does not correctly take into account the crucial presence of the identity-sign.

Second, those truth-conditions do not correctly take into account the crucial coordinated occurrences of the name ‘Alice’. Both identity and double occurrence ought to be taken into account in a statement of truth-conditions, and once they are, the logicality of (1) is salient.

Third, and in a different register, it might be argued that just as the truth and understanding conditions of (1) need not allude to any kind of logicality, those of (16) and (17) do not either:

(16) P or not P.

(17) a = a

If so, my claim overgenerates: it discounts as logically true sentences which, if anything, should definitely count as such.

A) *Identity*

Here, the orthodox account of understanding the logical constants outlined in section VI is directly relevant. On this account, in order to understand (1), someone has to grasp some kind of logicality: to understand (1), someone has to understand what the expression ‘is identical’ means, and in order to understand this, they have to in some way grasp that everything is self-identical, i.e. (18):

(18) Everything is self-identical.

¹⁷ I develop this theme further in section X.

The point against these sorts of accounts, which require understanding (18) in order to understand (1), is familiar. It is that of *deviant* speakers or thinkers. Indeed it seems undeniable that someone could count as understanding (1) even if they were agnostic about (16) or were tempted to reject it because of some other theoretical commitment. Again, they might have reasons to think that not everything is self-identical or perhaps they think that Alice belongs to a special class of beings — those who enjoy self-identity. If such speakers can count as understanding (1), then it cannot be required to know (18) in order to understand (1).¹⁸

B) *Double occurrence*

(1) contains two occurrences of the name ‘Alice’ which we may call, following Fine (2007),¹⁹ ‘strictly co-referential’. According to Fine’s semantic relationism, the two occurrences of ‘Alice’ in (1) are coordinated in that they represent their common referent as the same. It is thus a semantic requirement that they co-refer. This feature for instance distinguishes (1) from a sentence such as (19) (assuming that it is true):

(19) Alice is identical with Lisa.

According to Fine, although (1) and (19) express propositions which are about the same individual, (1) represents the same individual as the same while (19) represents the same individual as different. This means, on his account, that they express different propositions. If so, the compositional semantics for (1) has to state the fact that there is coordination between the two occurrences of ‘Alice’, and so, presumably, part of understanding (1) is understanding that the two occurrences of ‘Alice’ are coordinated.

Given this account of coordination, one might then think that understanding (1) requires something close enough to understanding logicity.

This thought would be the wrong thing to think, however. Indeed, notice first that facts about coordination do of course not only concern plausible cases of logical truths such as (1), but also sentences such as (20), which stand no chance of counting as logical truths:

(20) Alice loves Alice.

So understanding coordination, and whatever grasp of coordination this might involve, has little to do with logic.

Also, it seems that understanding coordination between the two occurrences of ‘Alice’ in (1) and (20) just demands understanding that it is the

¹⁸ See here Williamson (2007, ch. 4) for discussion of these sorts of cases of deviant speakers or thinkers. See also McGee (1985) for a concrete example concerning Modus Ponens.

¹⁹ See Fine 2007, esp. ch. 2.

same name for the same person that is used twice. (As opposed to it being an orthographic accident that two different persons are called 'Alice'). But that comes from a specific competence with the name 'Alice'. Nothing further seems to be required here for understanding — in particular no understanding of some special kind of rule about coordination or form.

C) *Overgeneration*

The worry here is this. I have argued that the truth-conditions of (1) and (2) need not need to allude to their alleged logicality. Now you might think that the truth conditions of (16) and (17), below, do not either:

(16) $P \vee \neg P$.

(17) $a = a$

They can simply be given as follows:

(21) 'P \vee \neg P' is true iff either P is true or not-P is true.

(22) 'a = a' is true iff a is identical with a.

If so, one might start worrying that, if the considerations put forward in this paper are cogent, there are no logical truths.

Now the crucial difference between (1) and (17) is that, where (1) contains an English proper name, (17) contains an individual constant. In the semantics for (1), it was simply assumed that 'Alice' was a particular name for a particular individual. This is why (1) could simply be understood as a particular sentence about a particular individual. But on the face of it, the same cannot be said about an individual constant. No matter which semantics one chooses for the individual constants, they are not particular names for particular individuals: that's simply not their semantic job. Any account of the individual constants will have to acknowledge that their fundamental use is to express some kind of generality, and presumably in (17) logical generality.²⁰

I cannot do justice to this vast topic here. But here is a first pass at making explicit the sort of generality that is expressed in (17), which is neutral between the different ways in which the semantic role of the individual constants might ultimately be explained:

(23) 'a = a' is true iff each sentence which is the result of substituting 'a' with a singular term in it is true.

²⁰ I cannot review here all the possible semantic accounts that may be given of the individual constants (as schematic letters, as expressions which make arbitrary reference to objects, as expressions which refer to arbitrary objects, as expressions which indicate objects arbitrarily, as quantifiers of sorts, etc.). But what all these accounts acknowledge in one way or another is that the individual constants are a vehicle of logical generality. See Fine (1986) for an excellent discussion of the role of the individual constants in logic.

This is to say that the analogy between (1) and (17) when it comes to truth-conditions is rather superficial: in a nutshell (17) claims to be true *no matter what*; (1) simply does not. (17) makes a general claim, and (1) doesn't. Equally, (16) makes a general claim but an assertive version of (11) would not.

XI. An analogy: indexicals

To further bring out the issue of what is required for understanding (1), it is useful here to compare (1) with similar sentences containing indexicals — more precisely, the first person demonstrative pronoun, such as:

(24) I am self-identical

(25) I exist

Let us focus on (24). A given utterance of (24) in a given context expresses a particular proposition about the utterer (say, Alice), namely that she exists. Understanding (24) requires grasping that proposition. Further, to understand (24), it is arguable that you also have to understand the meaning of 'I' — where understanding the meaning of 'I' is knowing its Kaplanian character. In this case, its character is a semantic rule that tells you (roughly) that 'I' always refer to the agent (here the utterer) of the context.²¹

Now Kaplan also thinks that (24) is in some sense analytic: if one understands the character of 'I' (and understands the other parts of the sentence) one knows that whoever utters (24) in a given context utters a truth. In this way, it is true no matter what — it is true at all contexts of utterance, i.e. it is logically true.

One might perhaps think that this Kaplanian semantic model for (24) could be extended to (1), to account for the fact that it is a logical truth. It is important to stress here, however, that the case of indexicals is very different from the case of proper names. For the latter do not have characters, and so understanding (1) does not involve knowing a Kaplanian character. So (1) is not analytic in Kaplan's sense. It is simply not true that whoever utters (1) utters a truth. At worlds in which Alice does not exist, an utterer of (1) does not utter a truth, just as in the actual world an utterer of (10) does not utter a truth.

Notice that Kaplan also claims that (24) is a priori. This is not obviously true, however, for reasons related to the issue of existential commitment raised at the beginning of this paper. It may be true that (24) is analytic and that some aspect of understanding it is sufficient for recognising it as true.

²¹ See Kaplan (1978).

It is sufficient because one knows that whoever utters (1) utters a truth — one understands the character of the sentence.

However, the proposition expressed by (24) does not seem to be a priori: for someone to know the proposition expressed in (24) they would not merely have to know that whoever uttered them uttered a truth, but also know that they were the utterer. That is, they would have to know that they are making a claim about themselves. And it is not obviously something that they can know by merely knowing what (24) means. Perhaps it is the sort of thing they can know by introspection, and it is an open question whether introspection can yield a priori knowledge.²² So it may be that, although for different reasons, (24) is no more a priori than (1).

XII. Diagnosis

It looks like (1) is best understood as being very much like (6). Their conditions on truth and understanding are relevantly similar. In particular nothing needs to allude to the logicity of (1) to account for its conditions on truth and understanding.

What is the best explanation for this fact? In section VI, I outlined two options. One is to say that logicity is *not at all* picked up on by ordinary conditions on truth, understanding and knowledge — so for all that has been said, (1) and (2) may well be logical truths. The other option is to say that the considerations put forward here should make us doubt that (1) and (2) really are logical truths. Let us revisit these options in turn.

A. *First option*

According to this option, (1) is a logical truth in the sense of (LF) but speakers are typically blind to this feature. Perhaps this should not surprise us. Of course, it is not necessary that a speaker understands all the properties of a sentence to count as understanding it — not even all its important, permanent or essential properties. For instance it may be that the proposition

²² See Burge (2000, 27) and Pryor (2006, 332) for contrasting views on this. Both think that there are two sources of justification for (19). One is general, and a priori. Pryor links it with the fact that (19) is 'hyper-reliable': it is such that (necessarily) anyone who utters (19) thereby utters a true sentence. (For him (1) and (2) are also hyper-reliable). Burge thinks that the general justification comes from the fact that (19) is an instance of a 'truths of reason', which is a general truth. The other concerns appreciating the fact that (19) is a particular instance: for Pryor that sort of justification is given by introspection, which is a posteriori. For Burge it comes from what he calls 'understanding'. I am not sure what understanding is exactly for him, but it can yield a priori knowledge of a singular truth such as (19).

expressed by (1) is necessary, but grasping this fact intuitively isn't required for understanding the sentence. Or else, it may be that (1) contains an expression which is a rigid designator, i.e. the name 'Alice'. But picking up on this property is not at all required for basic understanding of (1). So it is intuitive to think that there are many important properties of the sentences which speakers use to which they are typically blind and so these are not required for basic understanding. And logicality is simply one of them.

This is an attractive view. It means that the orthodox account of understanding the logical constants outlined in section VI is wrong in bringing grasp of logicality to the core of the meaning and understanding of sentences such as (1). More generally accounts which connect understanding sentences such as (1) to in some way appreciating their role in logical inference are somehow on the wrong path.

I do not have a knock-down argument against this option. As I said from the outset, the considerations offered in this paper only constitute a *prima facie* case against counting sentences such as (1) and (2) as logically true. But if indeed a *prima facie* case has been made, one consideration that is relevant here is that the first option doesn't offer the simplest explanation of that case. The simplest explanation would be that the reason why the alleged logicality of (1) is not salient in the way explained above, is because it is not there. In the last part of this paper I develop such an explanation.

B. Second option

Suppose that (1) is not a logical truth: it is simply a particular truth about the identity of Alice at a certain time. What should we make of the claim that any substitution of 'Alice' with a meaningful proper name results in a truth? Here, one might say that the reason one is tempted to consider (1) a logical truth is that it is a natural language instance of a logical truth. More precisely it is an instance of a formal sentence such as (17), which is itself a logical truth:

$$(17) a = a$$

Thus one might say that it is really formal sentences such as (17) that are logical truth, not instances of such sentences in natural languages, and then go on to give a semantic account of what makes (17) a logical truth in the sense of (LF): what makes it not a particular truth about a particular object at a particular time. Surely this looks like a plausible suggestion.

Now one problem with this suggestion is that the current orthodoxy on logical truth has it that (17), as well as (16), isn't a logical truth. For instance Mario Gómez-Torrente thinks that the fact that logic is formal entails that only fully interpreted sentences, such as natural language sentences, are

really logical truths.²³ What he calls ‘logical forms’, or ‘the theoretical truths that are asserted by logic as a science’, are not logical truths. This is because for him logical forms are schemas — sentences that are not (fully) interpreted, and so not capable of truth or falsity. (Notice here that if that is so, one wonders how ‘logic as a science’ manages to make any assertions.) For instance he writes:

Part of what distinguishes logical truths is that they are in some sense... “Formal”. That a logical truth is formal implies... that all the sentences which are appropriate replacement instances of its logical form are logical truths too. The logical form of a sentence *S* is supposed to be a certain schema determined uniquely by *S*, a schema of which *S* is a replacement instance, and of which sentences with the same form as *S* are replacement instances too... Sometimes the forms of logical truths, schemata, are called “logical truths”. In [a] strict sense only fully interpreted sentences are logical truths... and theoretical truths that are asserted peculiarly by logic as a science need not be logical truths.

So on this view, a sentence such as (17) isn’t a fully interpreted sentence, it is merely a schema. It is not apt to be true or false and so it can’t be a logical truth. Thus, (17) is a logical truth only derivatively or metaphorically because only fully interpreted sentences — e.g. of the sort of (1) — are logical truths. Indeed, the only *point* of sentences such as (17) is to record the fact that sentences such as (1) are logical truths.

So now the question is that, if (1) is not a logical truth (the option we are currently considering) and (17) is not a logical truth (because it is a schema), then where are the logical truths?

At this point, the obvious suggestion to make, *pace* Gómez-Torrente, is that (17) isn’t a schema, but a fully interpreted sentence, which is a logical truth. It is rather (1) which is a logical truth only derivatively or metaphorically, only insofar as (17) is a logical truth. It might not be the current orthodoxy on logical truth — which sees purely formal sentences (sentences belonging to formal languages) as merely schemas — but this sort of view certainly has a long history.

Let us go back to this idea of a formal criterion for logical truth, (LF), outlined in section (IV). As I said, the idea that logic is formal goes back to Aristotle, and it actually sits nicely with the idea that formal sentences are logical truths. For instance, the peripatetic philosophers, following Aristotle, seem to have thought that, while formal sentences were apt to be logical truths, this wasn’t the case for sentences in natural languages.²⁴

²³ See Gómez-Torrente (2006).

²⁴ See here Łukasiewicz (1956: 13-14) quoted by Beall and Restall (2006: 18ff.): ‘[A]ccording to the Peripatetics, who followed Aristotle, only syllogistic laws stated in variables belong to logic, and not their applications to concrete terms. The concrete terms,

On their formal criterion for logical truth (or rather, logically valid syllogism), natural language instances of logical truths are not themselves logical truths. This is because for them saying that logic is formal is saying that it is not about any specific subject matter. Thus a logical truth cannot be about any particular subject matter — such as Alice or Socrates or being mortal. This is one version of the view that logic is topic neutral, according to which properly-called logical truths and argument cannot be about particular individuals and their properties.

Notice also that Frege did not treat sentences such as (17) as schemas.²⁵ For him, such a sentence is fully interpreted, it expresses a complete thought (or proposition) and it is thus truth-evaluable. Indeed for Frege, logic and logical languages have to be fully meaningful and interpreted if they are to play any role in any kind of scientific investigation — if they are to be applied to anything, including English language sentences such as (1). For Frege, a logical language is just like any other scientific language, and so it has to be apt for truth and falsity.

Notice finally that the current standard formal criterion for logical truth is Tarski's, according to which a logical truth is a truth that is true in all models, where a model consists in a quantifier domain and an interpretation function. That is to say a logical truth is a truth that is true in all uniform interpretations of its non-logical vocabulary.²⁶ This criterion is neutral on the question of whether a formula under a given interpretation is itself a logical truth, although it is clear that the sorts of sentences that Tarski has in mind when he characterises logical truth are sentences such as (3) and (4), which contain (what he thinks of as) variables rather than interpreted or natural language expressions such as the name 'Alice'.²⁷

One last thought which we may add to the idea that natural language sentences aren't logically true is of course a Quinean one.²⁸ It is that we actually have already started regimenting (1) once we bring logicity into the picture. The logical apparatus is projected onto the natural language

i.e. the values of the variables, are called the matter [o]f the syllogism. If you remove all concrete terms from the syllogism, replacing them by letters, you have removed the matter of the syllogism and what remains is called its form.' More would need to be said here about how exactly this view originated, but this is the topic for another paper.

²⁵ See inter alia, Frege (1904).

²⁶ See Tarski (1936).

²⁷ Particular interpretations (or concrete instances) of general logical truths, e.g. 'Alice is identical with Alice' are (re-)interpretable and it is *prima facie* unproblematic (if perhaps slightly unnatural) to say that 'Alice is identical with Alice' is true in all models. However, some have argued that Tarski's account of logical truth/consequence only applies to uninterpreted languages — languages with only a (syntactic) characterisation of well-formedness in which only the logical constants are given a (constant) interpretation and the rest of the vocabulary is treated as variables. See for instance Milne (1999) for discussion.

²⁸ See Quine (1960): ch. 5.

sentences. Arguably the logical apparatus is theory-driven and interest-relative. Thus, the original natural language sentence is not true because of its logical form — logical form is projected onto (1). So (1), in its innocent original state, isn't a logical truth.

These cursory historical remarks of course only constitute a superficial outlook on how logicians think, or have thought in the past, about logical truth. But what is remarkable is that there is nothing here that stops us counting (17) as a logical truth and discounting (1) as one. To the contrary: it may be that regarding some sentences of English as logically true is the outcome of recent developments in the theory of logical truth, informed by an interest in the way logic might be relevant to the study of natural language semantics.

XIII. Concluding Remarks

I have argued that the objection from existential commitments against classical logic is a superficial one. There is a much deeper reason for being sceptical that natural language sentences such as (1) and (2) are logical truths, which are brought about when one reflects on formal criteria for logical truth such as (LF). Once standard considerations the conditions on truth and understanding of such sentences are brought in, it doesn't seem that (1) and (2) are true in virtue of their logical forms.

What is important to realise is that if (1) and (2) are not logical truths in the sense of (LF), it is going to be of little importance that they are not logical truths in the sense of (EC). Thus one cannot merely use the fact that (1) and (2) are not logically true in the sense of (EC) to argue for free logic, especially given that (3) and (4) are not even logically true in the sense of (LF). If (1) and (2) are not logical truths, the real debate over which logic is the right logic shouldn't take place at the level of natural language sentences, but perhaps at a more theoretical level. The real interesting questions about logicity arise with the sentences of formal languages such as (17). What do these sentences mean or say, if anything? How are they truth, if at all? And how do they relate to sentences such as (1), if at all? ²⁹

²⁹ I would like to thank Mahrad Almotahari, Massimiliano Carrara, Julien Murzi, Bruno Whittle and Amy Wilson, for useful comments on a draft of this paper. Thanks to the audience at the Paradox and Logical Revision Conference, in the Center for Mathematical Philosophy in Munich, where a draft of this paper was presented. I am also very grateful to two anonymous referees for *Logique et Analyse* for their very detailed and helpful comments.

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Corine BESSON
University of Sussex