

# Contexts, Demonstratives, and Validity

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## 1 Introduction

In his seminal work, “Demonstratives”, David Kaplan shows how to define validity (or logical truth) for a language containing indexical expressions such as ‘I’, ‘now’, ‘today’, ‘that’, and others. Kaplan’s great insight in that work is that the indices for context and for circumstances of evaluation (which Kaplan takes to be time and world) play conceptually distinct roles in semantics. To capture these distinct roles, Kaplan distinguishes not only between the intension of an expression and the extension of the expression at a particular circumstance of evaluation, but also between the character of an expression and the content of the expression relative to a particular context. Identifying content with intension, Kaplan posits three distinct levels of semantic evaluation: character, content, and extension. In Kaplan’s terminology, character combines with context to generate content, and then content combines with a circumstance of evaluation to generate an extension (such as the referent of a singular term or the truth value of a sentence).

Given this notion of content, Kaplan is able to give a systematic account not only of truth relative to a context for sentences containing indexical expressions, but also of logical truth.<sup>1</sup> Assuming that a context uniquely determines a circumstance of evaluation, he defines a sentence to be true relative to a context just in case the content of that sentence relative to that context applied to the time and world of the context returns the value True. Finally, Kaplan defines a sentence to be a logical truth (or to be valid) just

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<sup>1</sup>The role of character in Kaplan’s definition of logical truth is questionable (Soames, 2005, 48).

in case it is true relative to all contexts, and an argument to be valid just in case the conclusion is true relative to every context relative to which the premises are all true.

There is, however, an alternative definition of validity and logical truth according to which validity is defined relative to a context. According to this definition, a sentence is a logical truth relative to a context just in case whatever content it might have relative to that context returns the value True when applied to the circumstances of evaluation of the context. Defining validity relative to a context allows for more flexibility than defining validity absolutely, as Kaplan does. It also affords a more intuitive treatment of multiple occurrences of demonstratives than either Kaplan’s incorporation of demonstrations into syntax or David Braun’s introduction of a distinct level of semantic evaluation for demonstratives. Finally, it provides some reason for thinking that an adequate formal treatment of contexts should include something like demonstrations in the contexts, an idea first put forward by Nathan Salmon. This last result has potentially significant consequences for a wider debate over the proper understanding of the relationship between semantics and pragmatics.

## 2 Validity

In “Demonstratives”, Kaplan defines validity in terms of content, but it is more useful for metatheory to return to his original model-theoretic definition of truth. Kaplan defines a model  $M$  for his indexical language LD as a sextuple,  $\langle C, W, U, P, T, I \rangle$ , satisfying at least the following requirements (Kaplan, 1989a, 543-544):

- $T$  is the set of integers (corresponding to times)
- $C$ ,  $W$ ,  $U$ , and  $P$  are nonempty sets (of contexts, worlds, individuals, and locations respectively) such that for every  $c \in C$ ,
  - $c_A$  (the *agent* of  $c$ )  $\in U$
  - $c_T$  (the *time* of  $c$ )  $\in T$
  - $c_P$  (the *location* of  $c$ )  $\in P$
  - $c_W$  (the *world* of  $c$ )  $\in W$

- $I$  is a function assigning an appropriate intension to each predicate and function symbol of LD.

Other requirements establish certain logical properties for the predicates ‘Exist’ and ‘Located’. I will return briefly to the logical status of these expressions in the section on contexts below.

The basic semantic properties of Kaplan’s system, on the basis of which all the others are defined, are truth and denotation relative to a model, context, assignment function, world, and time. In Kaplan’s system,

$$\models_{cftw}^M \phi$$

abbreviates

$\phi$ , when taken in the context  $c$  (under the assignment  $f$  and in the model  $M$ ), is true with respect to the time  $t$  and the world  $w$ .

and

$$| \alpha |_{cftw}^M$$

abbreviates

The denotation of  $\alpha$ , when taken in the context  $c$  (under the assignment  $f$  and in the model  $M$ ), with respect to the time  $t$  and the world  $w$

(Kaplan, 1989a, 544). The definitions of truth and denotation proceed compositionally, following the syntax of LD. Details of the definitions are reproduced in the Appendix.<sup>2</sup>

Using this notation, and using

$$c \in M$$

as an abbreviation for

$$\exists C \exists W \exists U \exists P \exists T \exists I (M = \langle C, W, U, P, T, I \rangle \& c \in C),$$

we can state Kaplan’s condition for the validity of a sentence  $\phi$  of LD:

$$(1) \quad \phi \text{ is valid} \leftrightarrow \forall M \forall c \forall f (c \in M \rightarrow \models_{cftw}^M \phi)$$

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<sup>2</sup>The Appendix is still under construction.

According to definition (1), a sentence of LD is valid if and only if, when taken in any context  $c$  (under any assignment  $f$  and in any model  $M$  ( $c \in M$ )), it is true with respect to the time  $c_T$  and the world  $c_W$  of  $c$ . In more familiar Kaplanian terms, a sentence is valid if and only if its content in any context (of any model) is true at the circumstances of evaluation determined by the context. As stated, the definition of validity in (1) appears nowhere in ‘Demonstratives’, but is an immediate consequence of the definitions of content in Remarks 1 and 2 on the formal system LD (Kaplan, 1989a, 546–547).

Kaplan’s definition of validity is absolute. It is a property that sentences either possess or fail to possess *simpliciter*. In this way, it is unlike truth in Kaplan’s system. Truth is a property that sentences either possess or fail to possess only relative to a context: according to Kaplan, a sentence  $\phi$  of LD is true relative to a context  $c$  (in a model  $M$ ) if and only if  $\models_{cf_Tc_W}^M \phi$ . Thus a sentence that is true relative to one context may be false relative to another, but the validity (or logical truth) of a sentence does not vary similarly.

There is another definition of validity, however, according to which a sentence or argument is evaluated for validity only relative to a context. On this alternative definition of validity, where  $\phi$  is any sentence of LD:

$$(2) \quad \phi \text{ is valid relative to a context } c \leftrightarrow \forall M \forall f (c \in M \rightarrow \models_{cf_Tc_W}^M \phi)$$

This alternative definition of validity provides a formal statement for the intuitive notion, in the introduction, that a sentence is valid relative to a context if and only if whatever possible content it might have relative to that context is true relative to the circumstances of the context.

With this definition of validity, the question arises whether there is a sentence valid relative to one context, but not valid relative to another. This possibility is precluded in Kaplan’s own language LD, for which the following theorem obtains:

**Theorem 1** *For any sentence  $\phi$  of LD:*

$$\forall M \forall c \forall f (c \in M \rightarrow \models_{cf_Tc_W}^M \phi) \leftrightarrow \exists c \forall M \forall f (c \in M \rightarrow \models_{cf_Tc_W}^M \phi).$$

There is a proof of this theorem in the Appendix. Roughly, the proof proceeds as follows. The left-to-right direction of the biconditional is a trivial consequence of the assumption that there are some contexts. I adopt this assumption. To prove the right-to-left direction of the biconditional, we let

$\phi$  be any sentence of LD that is *not* valid. Then according to the definition of validity in (1),

$$(3) \quad \exists M \exists c \exists f (c \in M \ \& \ \sim \models_{cf_{TCW}}^M \phi).$$

Letting  $M^*$ ,  $c^*$ , and  $f^*$  be a model, context, and assignment function respectively that satisfy the open matrix of (3), we then let  $a$  be any context, and show how to construct a model  $M'$  ( $a \in M'$ ), from  $a$ ,  $M^*$ ,  $c^*$ , and  $f^*$ , such that  $\exists f \sim \models_{af_{TCW}}^{M'} \phi$ . Since  $a$  is any context whatsoever, we arrive at

$$(4) \quad \forall c \exists M \exists f (c \in M \ \& \ \sim \models_{cf_{TCW}}^M \phi).$$

Thus from (3) (the negation of the left hand side of the biconditional in Theorem 1) we can deduce (4) (the negation of the right hand side), and so by contraposition arrive at the right-to-left direction of the biconditional.

One philosophical consequence of Theorem 1 is that we lose nothing by defining validity relative to a context. Theorem 1 states that any sentence of LD is valid according to (1) if and only if there is some context relative to which it is valid according to the alternative, (2). In other words, a sentence of LD is valid relative to some context if and only if it is valid relative to every context. Thus for Kaplan's language LD, we can recover an absolute property corresponding to Kaplan's definition of validity from the alternative, relativized definition of validity.

There are languages, however, for which the result in Theorem 1 does not obtain. That is, there are languages in which some sentences are not valid relative to some contexts, and so are not valid at all according to (1), but are valid relative to other contexts. For these languages, defining validity relative to a context offers more flexibility, and allows us to account for a wider range of phenomena, than defining validity absolutely, as Kaplan does. Such languages are the subject of the following section.

### 3 Demonstratives

One basic fact about our understanding of demonstratives like 'that' is that distinct tokens of them can be used in the same conversation, and even in the same utterance of a sentence, to refer to distinct things. Thus if one were to utter the sentence

$$(5) \quad \text{That is taller than that}$$

pointing first at Mount Whitney and then at Lone Pine Peak, one would say something true. Yet if our semantic theory only evaluates expressions relative to a context, it cannot account for the difference in reference between the two tokens of ‘that’ in the utterance. Such a theory would predict that, relative to the context corresponding to one’s imagined utterance, (5) is false, because the content of (5) relative to the context would be, roughly, the proposition that  $x$  is taller than  $x$ , relative to some assignment of an object to the variable ‘ $x$ ’.<sup>3</sup> (It does not matter for our argument *what* object the context would assign to ‘that’. It only matters that the same object is assigned to both tokens.) Thus (5) is true relative to our context only if there is some object that is taller than itself, but there is clearly no such object.<sup>4</sup>

One of the semantic challenges posed by demonstratives is to capture this referential promiscuity in a formal theory. I call this challenge the ‘challenge of multiple occurrences’, because in some sense, the expression *type* ‘that’ occurs twice in (5). Thus the challenge is to allow different denotations to be assigned to the distinct occurrences. There are two fundamentally different responses to this challenge, represented by Kaplan’s Corrected Fregean Theory of demonstratives and David Braun’s Context Shifting Theory (Kaplan, 1989a; Braun, 1996). Setting aside certain technical details, a central claim of Kaplan’s Corrected Fregean Theory of demonstratives is what Nathan Salmon (2002) has called the *the syntactic incompleteness thesis* for demonstratives:

### Syntactic Incompleteness Thesis (for demonstratives)

The content of a demonstrative  $d$  (like ‘that’) is not determined by evaluating  $d$  alone relative to a context. Instead, the result of supplementing, or replacing,  $d$  with some demonstration is evaluated for content relative to a context.<sup>5</sup>

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<sup>3</sup>This claim assumes that the content of a demonstrative is the object or individual demonstrated, i.e., that demonstratives are *directly referential*. This assumption has recently been challenged by Jeff King (King, 2001). The arguments of this paper, however, are independent of this question, and would apply equally to King’s view of the semantics of demonstratives.

<sup>4</sup>Like the argument I consider later in this section, a version of this argument can be found in David Braun’s important discussion of the semantics of demonstratives.

<sup>5</sup>For now, I will follow most contemporary literature in using the term ‘demonstration’ to refer to whatever is added to the expression, and ‘demonstratum’ to the object or individual determined by the demonstration, but I will return to the question of what

Supplementing the same expression with different demonstrations yields distinct things to be evaluated by the semantic theory. Thus what is evaluated in a semantic treatment of the utterance of (5) is a supplemented sentence containing two distinct supplemented expressions: ‘that’ plus the first demonstration, and ‘that’ plus the second. These may be assigned different referents by the semantics.

In contrast to Kaplan’s theory of demonstratives, the syntactic incompleteness thesis is not a consequence of David Braun’s Context Shifting Theory. On Braun’s theory, a demonstrative expression alone is evaluated, or has content, relative to a context. A context contains a sequence of demonstrata, one of which is highlighted. When a demonstrative is evaluated relative to a context, its content is the highlighted demonstratum. Evaluating a demonstrative relative to the context, however, also induces a ‘shift’ in the highlighted demonstratum: where previously the  $i$ -th demonstratum was highlighted, the  $i + 1$ -th demonstratum is highlighted. Thus the next time that a demonstrative is evaluated relative to the context, its content will be the next member of the sequence of demonstrata. The formal context corresponding to the utterance of (5), for instance, contains the pair of demonstrata  $\langle \text{Mount Whitney, Lone Pine Peak} \rangle$ , and is such that, initially, Mount Whitney is the highlighted demonstratum.

There are other theories offered in response to the challenge of multiple occurrences, and these too may be sorted into those that suppose the syntactic incompleteness thesis and those with which the thesis is inconsistent. According to David Braun’s Three Meaning Theory of demonstratives, for example, an occurrence of a demonstrative is first assigned a demonstration, and then the demonstration is evaluated for denotation relative to a context (Braun, 1996). Thus the demonstratives themselves do not have a denotation relative to a context, in accord with the syntactic incompleteness thesis for demonstratives.

In contrast, Nathan Salmon’s Indexical Theory of demonstratives is inconsistent with the syntactic incompleteness thesis for demonstratives. According to Salmon’s Indexical Theory, a context includes a sequence of demonstrations, rather than demonstrata (Salmon, 2002). Using the same formal implementation as Braun’s Context Shifting Theory, we may suppose that one of these demonstrations is highlighted, and that the result of evaluating a demonstrative relative to the context is that the next member of the se-demonstrations are below.

quence of demonstrations becomes highlighted. Then on Salmon’s view, the content of a demonstrative in a context is the demonstratum determined by the highlighted demonstration of the context.

Picking up on Salmon’s terminology, I shall call any semantic treatment of demonstratives inconsistent with the syntactic incompleteness thesis “Indexicalist”, and any semantic treatment of demonstratives consistent with the thesis “Non-indexicalist”. The significance of this for our discussion is that if we let  $L$  be a language containing ‘that’ and ‘is identical to’ for which we have given an Indexicalist semantics, then the sentence

(6) that is identical to that

of  $L$  is not valid according to (1) (Kaplan’s definition of validity). According to (2), however, it is valid relative to some contexts but not others. I provide a formal proof of this latter claim in the Appendix, but the intuitive reasoning should be clear. Assuming the Indexicalist semantics for  $L$  affords an adequate response to the challenge of multiple occurrences, there will be contexts relative to which the two occurrences of ‘that’ in (6) will be assigned different referents. Relative to such a context, (6) is true only if there are distinct objects  $x$  and  $y$  such that  $x = y$ . Since there are no such distinct objects, (6) is false relative to such contexts, and so not valid relative to such contexts according to (2) (and not valid at all according to (1)).

Yet relative to a context  $c'$  that assigns the same referent to each occurrence of ‘that’, (6) is valid according to (2). Since  $c'$  itself assigns the referents, it assigns the same referents relative to any model containing it we choose. So relative to every relevant model, the denotation of the first occurrence of ‘that’ in  $c'$  (with respect to  $c'_W$  and  $c'_T$ ) is identical to the denotation of the second occurrence of ‘that’ in  $c'$  (with respect to  $c'_W$  and  $c'_T$ ). But relative to every relevant model, (6) is true relative to  $c'$  if and only if the denotation of the first occurrence of ‘that’ in  $c'$  (with respect to  $c'_W$  and  $c'_T$ ) is identical to the denotation of the second occurrence of ‘that’ in  $c'$  (with respect to  $c'_W$  and  $c'_T$ ). Thus relative to every relevant model, (6) is true in  $c'$ , and so (6) is valid relative to  $c'$ .

This result, namely that (6) is not valid relative to (1), but is valid relative to some context according to (2) has some interesting philosophical consequences. First, it undermines an argument, originating with David Braun (though I am interested in a more general form of the argument), to the conclusion that Non-indexicalist semantic treatments of demonstratives provide a better account of certain data than Indexicalist accounts. In fact,

the most satisfactory account of this data (to be introduced in a moment) is provided by Nathan Salmon's Indexical Theory of demonstratives. Second, if this last claim is correct, it suggests that we ought to think of contexts as more closely related to utterances than they are widely supposed to be. In the remainder of this section I will consider the argument against Indexicalist theories. Then in the following section I will return to the question of the proper treatment of contexts in semantics.

David Braun asks us to consider a variation on a well-known example from John Perry:

Suppose that John is looking at the aircraft carrier *Enterprise*. He is standing some distance away from the ship, and his view of the middle of it is obscured by a building, so that he sees only the stern of the ship off to his left and the bow of the ship off to his right. After a while, he realizes that they are parts of the same ship. (Braun, 1996, 158)

Upon this realization, John performs two utterances of (6) ("that is identical to that"). In one, he makes only one gesture, toward the bow of the ship. In the other, he points to the bow when he utters the first token of 'that', and to the stern when he utters the second. John has said, strictly and literally, the same thing in both cases; strictly, he has said of the *Enterprise* that it is identical to itself. This is the proposition expressed by the sentence he has uttered relative to the context in which he has uttered it. Yet there is an important intuitive difference between the two utterances. We might, as a first pass, cash out the difference thus: We know, in virtue of knowing how to use 'that' and knowing that the speaker intended, as it were, the 'same demonstration' be associated with both tokens of 'that' in the first utterance, that what she has said is true. In the other utterance, however, comparable knowledge of the correct use of 'that' and of the speaker's intention is not enough to know whether what she said is true. We also must know what is going on around the speaker.<sup>6</sup>

The phenomenon is not restricted to 'that'. We can generate a similar intuition with the demonstrative sense of 'here'. Suppose that John is looking at a pair of maps of the same area of Pasadena. After some reflection John

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<sup>6</sup>This is, as I mention above, only a first pass. I will offer a slightly more subtle picture of the difference below.

performs two utterances of

here is identical to here.

In the first, he points to one place on one map throughout the utterance. In the second, he points first to one place on one map, and then to one place on the other map. Finally, suppose that the places that John points to on the two maps correspond to the same location in Pasadena. In both cases, John has strictly and literally said of this location in Pasadena that it is identical to itself. Yet there is an intuitive difference between the utterances. We know that John has said something true in the first utterance merely by knowing how he intended to use the two tokens of ‘here’. We know John has said something true in the second utterance, however, only if we also know that the two places he points to on the two maps correspond to the same location in Pasadena. This intuitive difference is the same as the intuitive difference between the two utterances of (6) we considered above. This suggests that the phenomenon in question is a result of some property of demonstratives generally.

Non-indexicalist theories of demonstratives can provide an account of this intuitive difference. According to a Non-indexicalist treatment of demonstratives, the two occurrences of ‘that’ are supplemented by the same demonstration in the first utterance of (6). The resulting supplemented sentence is valid according to (1). According to Kaplan’s Corrected Fregean Theory (as reflected in the formal language LD), for example, the sentence that the speaker actually utters in the first utterance of (6) is something like,

$$d\text{that}[\delta] = d\text{that}[\delta],$$

where  $\delta$  is some description that captures the demonstration the speaker uses from the speaker’s own perspective. Since the denotation of ‘ $d\text{that}[\delta]$ ’ is always identical to itself, this sentence is true in every model and context, and so is valid according to (1). In the second utterance of (6), however, the two occurrences of ‘that’ are supplemented by different demonstrations. The resulting supplemented sentence would be represented in Kaplan’s theory as

$$d\text{that}[\delta] = d\text{that}[\delta'].$$

This sentence is not valid according to (1), because there will be some context relative to which the demonstratum of the demonstration  $\delta$  is distinct from the demonstratum of the demonstration  $\delta'$ . Thus on a Non-indexicalist

view, the intuitive difference between the two utterances of (6) is a *logical* difference.

The suggestion that the difference between the two utterances of (6) is a logical difference accords with our intuitions about the example. Recall that our intuition that the first utterance of (6) is guaranteed to be true seems to turn on two things: (i) the meaning, or use, of ‘that’, and (ii) our knowledge of specific aspects of the speaker’s mental state. It is in virtue of similar knowledge that we know that an utterance of

Hesperus is identical to Hesperus

is true. Yet in the case of “Hesperus is identical to Hesperus”, we need only know how the name ‘Hesperus’ is (or indeed how names in general are) used. If there is more than one salient object in the conversation named ‘Hesperus’, then the parallel between the examples is even stronger: we must also know that the speaker intends to refer to the same thing with both tokens of ‘Hesperus’. Yet even in this modified example, there is a difference: the added bit of knowledge required for knowing that the first utterance of (6) is true is required *by the meaning of ‘that’*, in a way that it does not seem to be required by the meaning of a name. (I am not entirely convinced of this last point, but it is enough that there is some intuitive difference between the roles that speaker’s intentions play in names and in demonstratives.)

This does not mean that I am advocating a theory of logical truth or validity as some kind of truth in virtue of meaning. First, all I mean to point out is that our intuitions about the first utterance of (6) are similar in important ways to our intuitions about sentences like “Hesperus is identical to Hesperus”. Insofar as such sentences are thought to be logically true, that gives us reason to think that the first utterance of (6) is, in some way, logically true. (Though this informal characterization makes it sound as though I wish to attribute logical truth to utterances themselves, which is not quite correct.) Second, Kaplan’s own notion of logical truth is precisely such a notion of truth in virtue of meaning. Kaplan sought to capture the sense in which a competent speaker knows, in virtue of knowing the meaning of ‘I’, ‘here’, and ‘now’, that certain indexical sentences, such as “I am here now”, must be true from their own perspective. Our intuition about the first utterance of (6) is an example of just what Kaplan was interested in.

If we accept the suggestion that the difference between the two utterances of (6) is a logical difference, then Indexicalist theories of demonstratives appear at first to be without the resources to explain it. Using only the

resources of Kaplan's definition of validity, Indexicalist theories cannot offer the same account of the difference between the utterances of (6). On an Indexicalist semantic theory the sentence is true relative to both contexts, since John is always pointing at the same ship. Furthermore, because there are contexts relative to which the two occurrences of 'that' are assigned different objects, the sentence is simply not valid according to (1) on an Indexicalist treatment of demonstratives. If there are no further resources available to account for the difference, then Non-indexicalist treatments of demonstratives simply do a better job of explaining our intuitions about (6), and are thereby to be preferred. But there are no further resources, so we should prefer a Non-indexicalist account of demonstratives.<sup>7</sup>

Given our previous discussion of validity, the flaw in this argument is apparent, though the details demand some attention. The argument relies on the assumption that the only available account of a logical difference between the utterances of (6) is the Non-indexicalist treatment in conjunction with (1), Kaplan's definition of validity, but we now know that using (2), the alternative definition of validity, we can provide an account of how a sentence can be valid relative to one context, but not so relative to another. So the premise that there are no further resources available for an Indexicalist account of the difference between the utterances of (6) is false.

Some Indexicalist theories, however, fare better with this response than others. Braun's Context Shifting Theory, for example, cannot provide an account of the difference between the two utterances even with the added

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<sup>7</sup>The preceding is based on an argument, due to David Braun, that his Three Meaning Theory provides a better account of our intuitions about (6) than his Context Shifting Theory:

The Context Shifting Theory, however, altogether misses the "truth guaranteed" feature of John's first utterance. It is simply *not* the case on the Context Shifting Theory that 'That is identical with that' expresses a true proposition in every context. *And this theory does not have the resources to distinguish between uses of the sentence which are "guaranteed to be true" (in all contexts) and uses which are not.* (Braun, 1996, 160 - my emphasis)

Yet the preceding argument differs from Braun's in two important respects: first, Braun claims that we have an intuition that the two utterances differ in meaning in some respect. I think that the intuition should be more carefully identified as an intuition about both meaning and the actions or intentions of the speaker. Second, Braun targets only specific theories, but I present the argument as targeting Indexicalist theories in general. In fact, I think that the argument against the Context Shifting Theory is stronger than the general argument, as will be clear below.

resources of the alternative definition of validity. Because we have assumed that the demonstrata of the two demonstrations in the second utterance are the same, the context representing the second utterance will always assign the same demonstratum to both occurrences of ‘that’. While according to (1), (6) is simply not valid, according to (2) it is valid relative both to the context corresponding to the first utterance, and to the context corresponding to the second. Thus even with the definition of validity relative to a context, the Context Shifting Theory cannot adequately distinguish between the utterances.

Salmon’s Indexical Theory of demonstratives, on the other hand, provides an elegant account of the difference between the utterances of (6). According to the Indexical Theory, a context itself assigns a demonstration to an occurrence of a demonstrative, and then the content of that occurrence of the demonstrative relative to the context is the demonstratum in the context of the demonstration assigned to it. For the purposes of metatheory, let us suppose that the demonstrations assigned by a context are singular terms, and so an occurrence of ‘that’ is assigned a singular term  $\alpha$  such that  $|\alpha|_{cf_{Tc}c_W}^M$  is the intended demonstratum of the occurrence. Given this supposition, it is clear (I hope) that (6) is valid relative to a context in which the same demonstration is assigned to both occurrences of ‘that’. What is less clear is whether (6) is valid relative to a context in which different demonstrations are assigned to each occurrence. To show that it is not, we must assume that there is some model  $M'$  such that, if  $\alpha$  and  $\beta$  are the two demonstrations, and  $c$  the context,  $|\alpha|_{cf_{Tc}c_W}^{M'} \neq |\beta|_{cf_{Tc}c_W}^{M'}$ . But in virtue of the semantics for ‘=’, (6) is valid relative to  $c$  only if for every model  $M$  (and every assignment function  $f$ ),  $|\alpha|_{cf_{Tc}c_W}^M = |\beta|_{cf_{Tc}c_W}^M$ . Thus our assumption, together with the semantics for ‘=’, entails that (6) is not valid relative to  $c$ .

The assumption that there is a model such as  $M'$  is crucial to the argument in the previous paragraph. There are two ways we might attempt to justify it. First, one might think that it is justified by reflection on the epistemic state of the speaker in the second utterance. The speaker does not know whether the ship whose bow she can see is identical to the ship whose stern she can see. From her perspective, or point of view from which she interacts with the world, she can only identify the intended demonstrata as the ship whose bow she can see, and the ship whose stern she can see. In other words, from her perspective, the speaker cannot rule out that the demonstratum of her first demonstration is distinct from the demonstratum

of her second demonstration. The assumption that there is some model relative to which the denotations of  $\alpha$  and  $\beta$  come apart reflects this epistemic limitation of the speaker.

Second, one might think that the assumption is justified by reflection on the epistemic state of the speaker's audience. From the audience's perspective, the significant difference between the two utterances is that in the first, they can tell that the speaker has said something true without knowing anything about what the speaker intends to demonstrate, while in the second, they require some additional knowledge, including, at the very least, knowledge of what the speaker intends to demonstrate, in order to determine whether the speaker has said something true. This is not to say that the audience does not know that the speaker has said something true in the second utterance. It is only to point out that this knowledge is based in part on assumptions that the audience must make about what the speaker intends to demonstrate with her two demonstrations. On this view of the justification of the existence of a model such as  $M'$ , it reflects a (perhaps very remote) alternative interpretation of the speaker's intentions, one in which the demonstrata of the two demonstrations are distinct. The existence of such an interpretation is just what prevents the second utterance from expressing a logical truth.

There are at least two reasons to favor the second way of justifying the existence of a model such as  $M'$ . First, epistemic considerations similar to those used to motivate the first way appear to pose a threat to the intuitions on which the argument of the last few paragraphs relies. From the perspective of the speaker in the first utterance, she does not know whether some evil demon or mad scientist has switched her surroundings in the midst of her utterance, what Kaplan calls 'the old switcheroo' (Kaplan, 1989b, 589). If this is correct, then perhaps the apparent truth of the first utterance of (6) is an illusion, and vanishes on more careful reflection. If so, then there is no need to offer an account of the difference between the two utterances of (6) at all, and we must find some other way to adjudicate between the different semantic treatments of demonstratives.

A full discussion of this concern would require a significant detour through the general problem of skepticism, something I wish to avoid at present. But there are at least two avenues of response that might be worth pursuing. First, can we not simply *stipulate* what the world of the context is in our setting up of the scenario that prompts the relevant intuition? Second, and perhaps more compelling, is that we still have the intuition that, in virtue of

the meaning of ‘that’ and her own actions, the speaker in the first utterance of (6) has done everything in her power to say something true, in a way that the speaker in the other utterance of (6) has not. Thus there is still some difference between the utterances, which seems to reflect something basic about our knowledge of the meaning of ‘that’.

The second reason to favor the second way of justifying the existence of a model such as  $M'$  is that it represents a more subtle understanding of the role of intentions in communication. Communication with demonstratives, at least to some basic degree, is successful as long as the audience can identify what object or objects the speaker intends to refer to. It is not necessary that the audience know exactly how it appears from the speaker’s point of view. This point is obscured by the first way of justifying the existence of a model such as  $M'$ , because it requires that we imagine the situation from the speaker’s own perspective. This way of justifying the existence of such a model seems, then, to require far more than a normal communicative situation requires.

In contrast, the second way of justifying the existence of such a model does not require adopting the speaker’s own perspective. Nor does it require knowing the exact content of the speaker’s intentions. Instead, on the picture that this way of justifying the existence of such a model assumes, the point of our intuitions about the two utterances of (6) is that we, as the audience, can (sometimes) tell when a speaker is using the same intention for both tokens of ‘that’, and when she is not. This observation does not support the claim that understanding what a speaker has said requires knowing the exact content of the speaker’s mental states. It requires only that we know something about the speaker’s mental states. Often, this is all that communication requires. As a result, the second way of justifying the existence of a model such as  $M'$  is based on a more plausible understanding of communication than the first way.

Let us recapitulate the main argument of this section. Indexicalist treatments of demonstratives allow for sentences that are valid relative to some contexts, but not valid relative to others (and so are not valid at all according to (1)). As a result, some Indexicalist treatments of demonstratives, namely Salmon’s Indexical Theory, can provide an elegant account of the intuitive logical difference between the two utterances of (6). Other Indexicalist theories, such as Braun’s Context Shifting Theory, do not provide an adequate account of the difference between the two utterances of (6), even when given the resources of (2). Nonetheless, the general argument against Indexicalist

theories, that they are not adequate in principle to account for the difference between the two utterances of (6), fails.

This by itself is a significant result. Indexicalist theories of demonstratives have a clear theoretical advantage over Non-indexicalist theories, insofar as they preserve the suggestion that expression types (and occurrences thereof) are the sole objects of semantic evaluation relative to contexts. Non-indexicalist theories, because of their adherence to the syntactic incompleteness thesis, must reject this suggestion. It is easy to overlook how radical a departure from the classical understanding of semantics as concerned with expression types this is when formal Non-indexicalist theories use linguistic expressions to represent whatever it is that supplements demonstratives. Once we accept the syntactic incompleteness thesis, we can no longer claim that a semantic theory, or at least a semantic theory for demonstratives, is just about *linguistic* meaning.

Yet as long as it is thought necessary to adhere to the syntactic incompleteness thesis in order to adequately explain the behavior of demonstratives, very general reasons of theory construction will favor Non-indexicalist theories. An unintuitive theory that is the only way to provide a fairly comprehensive explanation of a range of data is nonetheless a welcome one, and often our intuitions will, with further study, fall in line with the new theory. Once, however, it is clear that it is *not* necessary to adhere to the syntactic incompleteness thesis for demonstratives in order to explain their behavior, considerations of simplicity overwhelm the reasons of theory construction that favored Non-indexicalist theories. Therefore, Salmon's Indexical Theory of demonstratives is doubly favored in virtue of (i) avoiding commitment to the syntactic incompleteness thesis and (ii) affording an elegant explanation of phenomena like the difference between the two utterances of (6).

## 4 Contexts

In the previous section, I argued that the explanation of the difference between the two utterances of (6) afforded by the conjunction of Salmon's Indexical Theory of demonstratives and the alternative definition of validity introduced in section 2 is a reason to favor the Indexical Theory as a theory of demonstratives. In this section, I argue that the conclusion of the previous section gives us a reason to favor a theory of contexts in natural language semantics according to which contexts correspond to actual and possible ut-

terances. On this view, we capture the semantic content of an utterance by evaluating the sentence uttered relative to a context that encodes the relevant features of the utterance, such as the speaker, time, location, and any demonstrations that the speaker uses. According to the principal rival to this view of contexts, a context simply provides the contents required by indexicals. Contexts, on this rival view, do not have to correspond to utterances at all; in some cases, we capture the semantic content of an utterance by evaluating the sentence uttered relative to a context whose features do not correspond to the utterance at all. In much recent work on indexicals and demonstratives, this latter view has been defended by appeal to examples like “I am not here now”, and “I do not exist now”. The clearest contemporary advocate for these arguments is Stefano Predelli, and at the end of the section I will turn to some of his criticisms.

Salmon’s Indexical Theory is committed to a particular view of contexts in natural language semantics. Contexts of a formal language like Kaplan’s LD are mathematical constructions of integers and indices for worlds, individuals, and locations. When we turn to apply the theory to language as a natural phenomenon, we must establish what (if any) aspect of the phenomenon the formal construction represents. According to Ben Caplan, the contexts of Salmon’s Indexical Theory are best thought of as representing the local environment of an utterance (Caplan, 2003, 196). Particularly, though Caplan does not stress this, a context represents the features of the local environment of an utterance that are required by the meanings of the indexicals uttered in order to interpret the utterance. On this view, semantic interpretation of a sentence relative to a context represents a stage in the interpretive process by which a competent listener comes to understand what someone has said, and the context itself represents the environment of, or non-linguistic starting point for, the process. This focus on the interpretive process is what makes it possible to capture our intuitions about the two utterances of (6); the semantic content of the sentence is the same relative to both contexts of utterance, but something in the process of interpreting the first utterance of (6) clues us in to its different status. Ben Caplan labels this view of context *the natural view*. I think the label is misleading, but will use it for now.

According to a different view of contexts in natural language semantics, contexts represent the content of certain cognitive states of the agent of a linguistic act. This view is clearest in the work of Stefano Predelli, according to whom the contexts of a formal theory represent the interpretation of the

sentence uttered that the speaker intends:

the hypothesis presented here is that utterances of a sentence  $S$  in a context  $c$  may express the content which one obtains by evaluating  $S$  (according to the ordinary characters of the expressions occurring in  $S$ ) with respect to a context  $c^*$ , intended as relevant by the speaker, and distinct from  $c$ . (Predelli, 1998, 403)

This passage is a little misleading, as it suggests that the intended context  $c^*$  and the context of the utterance  $c$  are the same kind of thing. The latter,  $c$ , is something like the natural environment of an utterance. The former, however, is something entirely different. On Predelli's view, the intended context  $c^*$  is an assignment of referents to indexical expressions in accord with the intentions of the agent of  $c$ . Such a context is completely determined by certain referential intentions with which the speaker utters whatever indexical expressions she utters.

On Predelli's view of contexts, intentions or demonstrations are not part of a context, as they are on the natural view as required by Salmon's Indexical Theory. Predelli's contexts contain only referents for indexicals and demonstratives. As we have seen, however, Salmon's Indexical Theory affords a more elegant treatment of multiple occurrences of demonstratives, and of different utterances of (6) in particular, than any view that incorporates only referents into contexts. Thus the argument in favor of Salmon's Indexical Theory of demonstratives in turn favors the natural view of contexts on which the theory relies.

In particular, we know from the previous discussion that a view of contexts like Predelli's requires a non-Indexicalist treatment of demonstratives to account for our intuitions about the two utterances of (6). On Predelli's view of contexts, contexts only provide contents, and so, like Braun's Context Shifting Theory, Predelli's theory of contexts does not have the resources to distinguish between the two utterances of (6). In order to account for the difference between these utterances, Predelli must accept the syntactic incompleteness thesis, and evaluate something other than demonstrative expressions (or syntactic occurrences thereof) relative to contexts. We have already seen that this Non-indexicalist treatment of demonstratives comes at a cost in theoretical simplicity. In the absence of independent reasons to favor it, we should prefer an Indexicalist treatment of demonstratives like Salmon's.

One common argument that might be thought to justify this cost in theoretical simplicity is that because contexts according to the natural view must be proper, that is, must be such that the agent of the context exists at the location of the context at the time of the context, a natural view of contexts cannot account for apparently true utterances of

(7) I do not exist

and

(8) I am not here now.

The problem for the natural view is that if all contexts are proper, then neither (7) nor (8) is true in any context. A proper context is one in which the agent of the context exists at the time of the context. So (7) is not true relative to any proper context. Similar reasoning applies to (8). Since, on the natural view, the environment of an utterance is represented as a proper context, the natural view of contexts incorrectly predicts that there are no true utterances of either (7) or (8). (This argument is found in both Predelli's work and in Ben Caplan's paper on contexts, but the phenomenon of true utterances of (7) and (8) has been noted in many places.)

Predelli's view, in contrast, can allow for true utterances of either (7) or (8). A speaker can record a token of (7) intending to refer to himself with 'I' at a time some five years in the future when he does not think he will be alive. The corresponding context, on Predelli's view, contains the agent who recorded the token, and the time at which the agent intends the recording to be heard. Assuming that the agent is correct at the time of making the recording, and is not alive at the time at which the recording is intended to be heard, the context is not proper, because the agent of the context does not exist at the time of the context.

The correct response to this argument is to reject the suggestion that all natural contexts are proper. But it is false to assume that this fact is a point against the natural view of contexts according to which contexts correspond to actual and possible utterances. The examples of true utterances of (7) and (8) always involve some kind of written or recorded token. In these examples, the medium of linguistic expression allows for a kind of flexibility of linguistic behavior that face to face spoken (or signed) language does not. In particular, written and recorded language makes possible a use of language to communicate a message over significant gaps of time and space. Such a

linguistic act is as much a natural phenomenon as an utterance occurring face to face, but is not proper in anything like the intuitive sense requiring an agent to exist at the time the message is received and interpreted.<sup>8</sup>

Let us take stock of the argument of this section. The reasons to favor the treatment of multiple occurrences of demonstratives afforded by Salmon's Indexical Theory are in turn reasons to favor the natural view of contexts on which Salmon's view relies. Yet the natural view appears to be empirically inadequate, insofar as it incorrectly predicts (7) to never be utterable truly. This prediction turns on the assumption, which I reject, that natural contexts must be proper. Once we reject this assumption, the argument against natural contexts fails. On the resulting view of natural contexts, they are not simply continuous chunks of spacetime, but instead reflect the features of an act of communication that are required by the meanings of the indexical and demonstrative expressions used. The lesson of our intuitions about (6) is that these features may include demonstrations, and so demonstrations themselves may be part of some contexts.

## 5 Conclusion

If the arguments in this paper are sound, then a view of contexts endorsed by Nathan Salmon according to which contexts include demonstrations, offers the best explanation of our intuitions about the two utterances of (6). There are two reasons that together lead to this result: first, Salmon's Indexical Theory, together with the alternative definition of indexical validity introduced in this paper, provides an elegant account of these intuitions; second, Salmon's Indexical Theory avoids commitment to the syntactic incompleteness thesis, and so preserves an approach to semantics according to which semantics evaluates expressions.

Unfortunately, Salmon offers no clear theory of what demonstrations are. At one point, he suggests that some features of the linguistic context (what has been uttered before) can serve as a demonstration. Thus he proposes that the anaphoric pronoun in the conversational exchange:

A: Do you recall the suspicious-looking guy we saw yesterday wearing a brown hat?

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<sup>8</sup>For a brief discussion of a related response to examples like (7) and (8), see (Sidelle, 1991).

B: Well, I think: he's a spy

is a demonstrative, and that its antecedent, the description 'the suspicious-looking guy we saw yesterday wearing a brown hat', serves as "a kind of verbalized demonstration" (Salmon, 2002, 532, n. 38, also 519). Furthermore, there are examples in which there is neither a physical demonstration or an appropriate linguistic antecedent. For example, in a recent conversation with Robert about Brian's party the night before, Peter uttered

(9) You drank that horrible wine.

The wine is not present to be demonstrated, but neither is anything else that can effectively serve as a proxy for the wine. We may even stipulate that Peter performs no overt ostensive actions - no obvious pointings, or nods of the head, or anything else. There is no plausible candidate for a demonstration.

A more plausible view is to incorporate the intentions with which a speaker utters a token of a demonstrative into context. In particular, when a speaker utters a demonstrative, she does so intending to refer to something. Incorporating these intentions into contexts would do all the work of demonstrations, and would not be subject to the puzzles in the previous paragraph; in the case of Peter's utterance where there is no demonstration, Peter must nonetheless intend to refer to the wine that Robert drank the night before, and he succeeds in communicating with Robert only insofar as Robert can discern this intention.

This variation on Salmon's view is significant for a debate in the literature on semantics and pragmatics. According to some philosophers, the contexts of a semantic theory do not include the intentions of speakers. (This is clear, for example, in (Bach, 1987, 177-178), and in (Recanati, 2004, 56-57).) A result of this view of contexts is that the semantic content of many sentences, including any sentence containing a demonstrative, relative to a context radically underdetermines the truth-conditional content of the utterance of the sentence in the context. Yet if the arguments of this paper are sound, then there is independent reason to include the intentions of speakers in contexts, and so to resist the radical underdetermination views that many philosophers currently find compelling.

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