

Background to two-dimensionalism: the distinction between character and content and its applications

PHIL 93507
Jeff Speaks

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1 Index theory

Let's begin by asking what determines the truth-value of a sentence, like

David Kaplan is very smart.

Plausibly, what the meaning of the sentence gives you is a condition under which the sentence is true — the condition of Kaplan's being very smart — and a condition under which it is false — it's not being the case that Kaplan is very smart. But what determines whether it is true? Presumably the state of the world (this world) in particular the state of Kaplan, right now. Now consider

In 1934, David Kaplan was very smart.

It looks as though what makes this sentence true or false is not the state of the world right now, but the state of the world in 1934. Let's introduce 'index' as a name for what makes a sentence true or false. What the above example shows is that the index can be

changed by phrases like ‘In 1934’, which shift the index from the state of the world in 2007 to the state of the world in 1934.

Similar shifts in the index are illustrated by the pairs of sentences

It is very cold and snowy.

In Florida, it is very cold and snowy.

and

Al Gore is president.

Had voting ballots in Florida been better designed, Al Gore would be president.

Neither of these sentences contains any obvious indexicals. Consider now a sentence like

I like the snow.

This seems in one way like, and in one way unlike, the above sentences. Out of my mouth, it still says something which is made true by an index — in this case, the state of the actual world, in particular my likes and dislikes, now.

The difference between this sentence and the others is that it says different things about the world — requires satisfaction of a different condition for its truth — depending on who utters it. For that reason, it seems like our semantic theory should treat these two sentences differently:

I like the snow.

Jeff Speaks likes the snow.

even if they say the same thing about the world when I say them. After all, there is clearly some sense in which ‘I like the snow’ means the same thing no matter who says it, even if there is another sense in which what it says about the world differs depending on the speaker.

This gives rise to a puzzle: given that ‘I’ does not simply function as the name of a speaker, what is its meaning?

Here is one very natural answer: ‘I’ is, like most definite descriptions, a way of singling out a member of an index which, relative to different indices, singles out different individuals. A natural elaboration of this thought would be that the meaning of ‘I’ is the meaning of ‘the speaker’ — which refers to different individuals with respect to different indices.

This would then explain the difference between your utterance of ‘I like the snow’ and mine. If I say ‘I like the snow’, then to see whether it is true or false we look, as usual, at

the index, which in this case (since it is just a simple sentence) is the actual world here and now. The sentence is then true iff the person saying the sentence at that index — namely me — likes the cold. If you had been speaking, then the index would have been different, and the sentences would have been true iff the person speaking at that index — namely you — likes the cold.

On this view, the ‘context-dependence’ of indexicals like ‘I’, ‘now’, and ‘here’ is just a version of something we recognized all along with every sentence: the truth value of the sentence depends on the relevant index.

2 The need for two indices

However, things are not this simple. Consider

In 100 years, I will not exist.

In line with the remarks above, it seems that this sentence is true iff what is expressed by ‘I will not exist’ is true with respect to the index that is the actual world 100 years hence. What is expressed by ‘I will not exist’? The theory of the preceding section would say that it is the speaker of the sentence in the index. So, on this view, the above is true iff in 100 years, the speaker of ‘I will not exist’ fails to exist. But of course this is not correct. The above is true iff in 100 years *I* will not exist — not iff someone who is uttering a sentence 100 years from now, and therefore presumably exists, fails to exist.

What the above example suggests is that the reference of ‘I’ is not in general the speaker at the index, if we think of the index as the state of the world with respect to which the truth-value of the sentence is determined.

So it looks as though, if we are going to treat ‘I’, like other words, as depending only on the index for its reference, we are going to need more complicated indices. One idea is that we can think of an index as the state of the world with respect to which the truth-value of the sentence is determined, *plus a designated agent of the index*. On this view, when I utter a sentence, I am thereby the designated agent, and we think of our new expanded index as a designated agent + the old, un-expanded index. Then ‘I’ gets its reference not from the speaker of the index, but from the designated agent of the index.

But things are not so simple, as Kaplan’s example (4) shows:

It is possible that in Pakistan, in five years, only those who are actually here now will be envied.

By argument parallel to the above, this example shows that in addition to a designated agent, we need a designated time, place, and world. So our indices are getting more complicated. One worry at this point is that it looks like what we really have are two indices, not one. We have, on the one hand, our old index, which is the possible state of the world with respect to which the truth-value of the sentence is determined and, on the

other hand, a designated agent, time, place, and world. It seems misleading to call this a supplemented index rather than two indices.

But Kaplan points out (in §VII) a further problem with this view. If we consider a sentence like

I am here now.

There seem to be two important things that we want to capture: (i) it is a contingent truth; what it says could have failed to be the case; and (ii) it is true whenever it is uttered — as Kaplan says, one need only understand its meaning to know that it cannot be uttered falsely.

The development of index theory which we have been working with so far does not explain (ii) — that index theory simply classes ‘I am here now’ among the sentences that are true with respect to some indices and false with respect to others.

We could solve this problem by limiting the indices to what Kaplan calls ‘proper’ indices — those in which the designated agent exists in the designated world at the designated time and the designated place. The problem is then that the sentence comes out true with respect to every index — which would make it a necessary truth, contra (i). This modification thus runs contra to the facts that I could have been somewhere else right now (or failed to exist now).

What we need are two indices: one which contains (at least) the designated agent, time, place, and world, and the other which contains the possible state of the world with respect to which the truth of the sentence is evaluated.

When people talk about ‘the Kaplan semantics for indexicals’ this is often what they have in mind: the view that the meanings of indexical expressions can only be correctly captured by a semantic theory that makes use of two indices (a ‘double-indexing’ semantics).

3 Two distinctions: context and circumstance, character and content

Kaplan’s was an early contributor to the development of double-indexing semantics, but an equally important contribution was his explanation of what he calls the conceptual difference between context and circumstance. Formally, context and circumstance are just two indices. But the role that the two play in Kaplan’s semantics is quite different.

A *circumstance of evaluation* relevant to a sentence is the (perhaps merely possible) state of the world which is relevant to determining the extensions of expressions in the sentence, and so also relevant to determining the truth value of the sentence. We know that sentences, relative to contexts of utterance, must have some sort of meaning which imposes a condition on contexts necessary and sufficient for the sentence to be true. Let’s call (following Kaplan) this sort of meaning the *content*.

You might think of the ‘default’ circumstance as the actual world at the time and place of the utterance. Expressions like ‘In 1934’ and ‘In Florida’ as used above have the function of

shifting the circumstance away from the default circumstance to (respectively) a different time and place. So consider, for example,

The president of the US is a nice guy.

In 1934, the president of the US was a nice guy.

It looks like the reference of ‘the president of the US’ in the first sentence is Obama, and in the second sentence FDR. The explanation of this is that ‘In 1934’ changed the circumstance, which is the state of the world with respect to which the reference of the expressions later in the sentence is determined, and that the content of ‘the president of the US’ singles out different individuals with respect to different circumstances of evaluation.

But, obviously, even if the reference of expressions like ‘the president of the US’ can change with the addition of circumstance-shifting expressions, their content remains fixed: ‘the president of the US’ still has a content which determines its reference as whatever (if anything) is the unique president of the US in the relevant circumstance of evaluation.

So so far we have:

- Contents determine a reference/extension given a circumstance of evaluation. (If you identify contents with intensions, a la possible worlds semantics, you can think of contents as functions from circumstances to extensions. Kaplan talks this way when laying out his formal system.)
- Some sentence operators, like ‘In 1934’ and ‘In Florida’ (as used above) can shift the circumstance relevant to determination of reference. Thus such operators can be thought of as operators on contents: they take as given the contents of expressions they operate on, and shift the circumstance with respect to which their reference is determined.
- To say that an expression is a rigid designator, using this terminology, you would say that the expression has a fixed, or stable content: a content which determines the same reference with respect to every circumstance.

So far, nothing about context-sensitivity. The second index used in Kaplan’s semantics is called a *context of utterance*, or just a *context*. The context is the state of the world in which the relevant sentence is uttered (though we can also imagine sentences as uttered in merely possible contexts, and consider the contents of those sentences in those contexts). The context include not only the world in which the sentences is uttered, but also the speaker, audience, time, place, and maybe lots of other stuff.

Context-sensitive expressions, as the name indicates, get their contents from the context. Consider, for example, ‘I.’ Let’s suppose that ‘I’ has as its content whatever object is the speaker in the context. Then (if Millianism about names is true), if I utter

I am the king of the world.

Jeff Speaks is the king of the world.

these two sentences have the same content.

Further, and crucially, since sentence operators like the ones discussed above seem to be operators on *contents*, and these two sentences have the same contents, pairs of sentences like

In 2017, I will be the king of the world.

In 2017, Jeff Speaks will be the king of the world.

will always have the same truth-value, and will often have a different truth-value from sentences like

In 2017, the speaker of the context will be the king of the world.

But, if ‘I’ and ‘the speaker of the context’ do not have the same content — as they manifestly do not — how are we to understand the fact that the latter seems to give the rule for determining the reference of the former? This is where the importance of having two indices comes in. ‘The speaker of the context’ is not the content of ‘I’, but is rather a rule which determines the content of ‘I’ in a given context of utterance. Kaplan calls this aspect of an expression’s meaning its *character*. The character of an expression can be thought of as a function from contexts to contents.

Using this terminology, we can then express the difference between expressions which are and are not context-sensitive as the difference between expressions which have a *variable character* — a character that delivers different contents in different contexts — and expressions which have a *fixed character* — a character that delivers the same content in every context. ‘I’ clearly has a variable character. Plausibly, proper names have a fixed character.

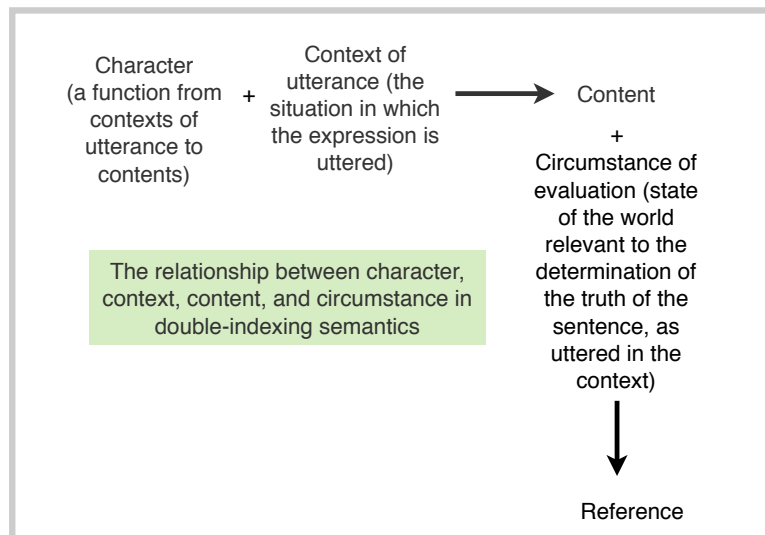
(Sidenote: what about cases where more than one person has the same name? We should be careful not to conflate ambiguity with indexicality (context-sensitivity). Plausibly we should think of such examples of proper names as in the same category as ‘bank’, in which we do not have one expression of the language with a variable character, but two different expression types, each with fixed characters.)

So, we have:

- Corresponding to the two indices — context and circumstance — are two dimensions of meaning — character and content. The character of an expression is or determines a function from contexts of utterance to contents. The content of an expression is or determines a function from circumstances of evaluation to extensions/referents. Every expression has a character and (given a context) a content.
- If an expression has the same content in every context, then it is not context-sensitive, and its character is a constant function. Such expressions have a fixed or stable character.

- If an expression has the same reference in every circumstance (a rigid designator), then its content is a constant function. Such expressions have a fixed or stable content.
- Indexicals are context-sensitive expressions. So, these expressions have variable characters. The ‘rule which determines the reference’ of an indexical is its character, not its content.
- In general, there is nothing to stop an indexical and a non-indexical from, in a given context of utterance, having the same content. But they will never have the same character.

The relationship between these two dimensions of meaning — character and content — might be laid out like this:



Most of the foregoing is pretty universally accepted: it is accepted that Kaplan’s dual distinctions between context and circumstance, and between character and content, are needed in giving an adequate semantics for indexicals. It is thus pretty uncontroversial that there are, in this sense, two dimensions of meaning.

What is *not* uncontroversial are the theoretical roles that these two dimensions of meaning play.

4 Early applications

4.1 *Monsters begat by elegance*

Sentence operators are expressions which combine with sentences to form sentences. This their content must be something which combines with some aspect of the meaning of

the embedded sentence to determine a content (proposition). Given that the embedded sentences have two dimensions of meaning — a character and content — we can ask: do sentence operators operate on the character, or the content, of the embedded sentence?

In many cases, the operators are clearly operating on contents. For example, if ‘When Bob is talking’ were an operator on characters,

When Bob is talking, I am always bored.

would be true iff Bob always bored himself when talking, which isn’t what this sentence says.

But even if there are many examples of this sort, one might wonder whether there are any operators on character. These are what Kaplan calls ‘monsters begat by elegance’ — ‘begat by elegance’ because double-indexing semantics seems to introduce their possibility, and ‘monsters’ because they are so awful. Kaplan’s view is that there are no monsters in English.

His view about this can be defended by thinking about what sort of operator would qualify as a monster. It seems plausible that if there are any monsters, we could introduce one by trying to talk explicitly about contexts of utterance, as in for example

In the context in which Bob was talking, I was bored.

To the extent that this means anything, it means that when Bob was talking, I, Jeff Speaks, was bored. If ‘in the context in which Bob was talking’ were a genuine monster, then ‘I’ would, when I use this sentence, refer to Bob.

To the extent that one can generate a reading of this sentence in which ‘I’ refers to Bob, one is (Kaplan thinks, and I agree) confusing it with a sentence like

If uttered in the context in which Bob was talking, ‘I was bored’ would have been true.

Here we do say something which is true iff Bob was himself bored while talking. But of course understand these truth conditions does not require the above sentence containing any monsters.

4.2 Kaplan on the a priori

However, there are some passages in Kaplan which are hard to reconcile with the view that there are no monsters in English. For consider. Kaplan thinks that

[1] I am here now.

as uttered by me, is knowable a priori, whereas

[2] Jeff Speaks is here now.

is not. (See §XVII.) So, it is hard to escape the conclusion that [3] is true and [4] is false, again as uttered by me:

[3] I can know a priori that I am here now.

[4] I can know a priori that Jeff Speaks is here now.

But how can that be, if [1] and [2] have the same contents, and ‘I can know a priori that’ operates on the *content* of the complement sentence?

One kind of two-dimensionalist responds to this question by saying: ‘I can know a priori that’, and other ‘epistemic’ sentence operators, are monsters: they operate on the character, not the content, of the embedded sentence. On this view, ‘It is a priori that S ’ says something like: the character of S is always true. We’ll be discussing this view at length when we turn to contextual two-dimensionalism.

4.3 *Evans on deep v. superficial necessity*

Evans (1979) is one early important application of this idea that the existence of two dimensions of meaning can help to explain what it means for something to be a priori. Evans’ aim (which has also motivated later two-dimensionalists) is to demystify one of the central claims of *Naming and Necessity*: the claim that there are some truths which are both contingent and a priori, and some which are both necessary and a posteriori.

This idea was also given expression by the formal system of Davies and Humberstone (1980). That formal system contains the compound operator ‘fixedly actually’ which is such that it combines with a sentence S to yield a truth iff S would have expressed a truth in any context. Given the role that Davies and Humberstone give to this operator in explaining the contingent a priori, one natural interpretation of their intentions would be to say that to be a priori is to be fixedly actually true.

4.4 *Stalnaker on assertion*

Stalnaker (1978) also made use of the distinction between two dimensions of meaning in trying to explain a puzzle about utterances of necessary truths. In Stalnaker’s view, conversations can be modeled as collaborative attempts to narrow down a range of possibilities about the subject matter of the discussion. The idea is that every informative contribution to a conversation eliminates some possible worlds which were left open by prior contributions to the conversation.

But this leads to an obvious problem, which is that sentences which express necessary truths, like ‘Water is H₂O’ can be informative contributions to conversations despite the

fact that they rule out no possible worlds, and hence a fortiori rule out no possible worlds left open by prior contributions to the conversation.

Stalnaker's solution was to hold that when one utters a sentence S , one asserts not just the content of S in the context, but also (in effect) that the character of S is true in the context of the conversation.

What are the cases in which the content of S can differ in its truth conditions from the proposition that the character of S expresses a truth? Only in cases in which S contains a term with a variable character — i.e., an indexical. So, for Stalnaker's idea to do the work for which it was introduced, it looks like sentences like 'Water is H₂O' must contain an indexical. This is an idea to which we will also return.

4.5 Character and cognitive significance

It's worth noting one last general point about the perceived significance of our two dimensions of meaning. One standard view about names was that the difference in cognitive significance between, e.g., 'Hesperus is Hesperus' and 'Hesperus is Phosphorus' is to be explained by the fact that the two names differ in content, because each is associated with a different condition on reference which the same object happens, actually, to satisfy.

This sort of Fregean view was the target of Kripke's modal argument in *Naming and Necessity*, which essentially argued that names can't work this way since, if they did, they would not be rigid designators, but they are. This leaves us without an explanation of the apparent difference in cognitive significance between sentences of this sort.

One might naturally think that Kaplan's two dimensions of meaning could help us here. After all, 'I' appears to be a rigid designator even though it is clearly associated with descriptive information about the speaker of the context. Perhaps names are like this, and the difference in cognitive significance between 'Hesperus' and 'Phosphorus' can be explained in terms of a difference in their characters.

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