

2. Two-Dimensionalism in its various guises

The matrix form

Let's start with an ordinary non-indexical sentence

- (1) Boris Johnson is the UK Prime Minister on 26th October 2020

We'll consider three worlds, w_1 in which this is true, w_2 in which Michael Gove is PM, and w_3 in which Jeremy Corbyn is PM. Then reading the context of utterance on the vertical axis, and the circumstance of evaluation on the horizontal axis, this gives the following simple matrix:

	w_1	w_2	w_3
w_1	T	F	F
w_2	T	F	F
w_3	T	F	F

The context makes no difference to the content of the sentence, so all of the rows are identical.

Now take a standard indexical:

- (2) I am speaking now

We need to be more specific about contexts and circumstances than simply assigning worlds, but we can do it with 'centred worlds' centred on a place and time. Again we'll consider three possible worlds, all of which contain a particular episode of Question Time featuring Johnson, Gove and Corbyn. w_1 is centred on Johnston at a moment when he utters that sentence; the others remain quiet. w_2 is centred on Gove who likewise utters that sentence, and w_3 on Corbyn who utters that sentence, again the others remaining quiet. Then we have the table:

	w_1	w_2	w_3
w_1	T	F	F
w_2	F	T	F
w_3	F	F	T

The fact that there are 'T' all down the diagonal shows that the whoever uttered the sentence would have been speaking truly. Of course, if the sentence had been

- (3) I am not speaking now,

then we would have to swap over the 'T's and the 'F's. And if Johnson just wouldn't shut up, so that he was speaking whenever the other two were, then the matrix would be

	w ₁	w ₂	w ₃
w ₁	T	T	T
w ₂	F	T	F
w ₃	F	F	T

even if what Johnson was saying in those worlds was ‘Don’t listen to them, you should be listening to me’. For the content expressed by (2) would still be true in those worlds, even though Johnson isn’t saying it; so we get a row of ‘T’s all across the top.

Plausibly a similar matrix is generated by certain of the famous contingent a priori examples. So consider Kripke’s

(4) The metre rule is one metre long.

We can consider that with respect to three worlds, the actual world, w₁, where the metre rule is a metre long; a world w₂ in which it is, (by our standards!) 980mm long; and a world w₃ in which it is 1020mm long. On one understanding of what happens there, the expression ‘is one metre long’ picks out different properties as it is uttered in each of those different worlds: in w₁ it picks out one metre, in w₂ 980mm, and in w₃ it picks out 1020mm. So that would again give us the table:

	w ₁	w ₂	w ₃
w ₁	T	F	F
w ₂	F	T	F
w ₃	F	F	T

Similar remarks apply to other examples in the area, for instance, Evans’ sentence:

(5) Julius invented the zip

Where ‘Julius’ is stipulatedly defined to refer to whoever it was who invented the zip (Whitcomb L Judson is standardly give the accolade in the philosophical literature, but Gideon Sundback is probably a better candidate; it shows how tricky introducing descriptive names can be.)

But there is clearly also a sense in which the metre rule isn’t a metre long in w₂, (it’s shorter than that!) and so (4) is false even when we think of w₂ as the circumstance of evaluation. To guarantee that reading we need to introduce the ‘actually operator’, or rather a family of operators, operating on terms, predicates or sentences (the actual F; x is actually F; actually P). Actually works as an operator to bring us back to the actual world, even when we are evaluating a sentence with respect to another possible world.

So, consider the sentence

(6) The metre rule is actually one metre long.

That will give us:

	w ₁	w ₂	w ₃
w ₁	T	T	T
w ₂	F	F	F
w ₃	F	F	F

Similar remarks apply to other examples in the area, for instance:

- (7) The inventor of the zip actually invented the zip.

But consider the sentence

- (8) The actual inventor of the zip invented the zip.

That gives us

	w ₁	w ₂	w ₃
w ₁	T	F	F
w ₂	T	F	F
w ₃	T	F	F

Oddity: take any contingent but true sentence like (1); then the sentence

- (8) Actually Boris Johnson is the UK Prime Minister on 26th October 2020

is going to be true with respect to every possible world; for evaluating it with respect to any possible world, one has to come back to the actual world to see if it is true here. If it is, then it's true at that world. So, given the standard interpretation of necessity (truth at every possible world), it is going to be necessity. Davies and Humberstone conclude that the standard notion of necessity is a shallow one.

How do we get something stronger? Their notion of fixedly actually just gets us truth down the diagonal. How do we guarantee that there is truth everywhere. Simply conjoining necessity and a priority doesn't get us quite what we want (the disjunction of (6) and (8) is going to be both necessary and a priori). But perhaps saying that it is a priori that the sentence is necessary.

Stalnaker

A bit of history: Mill thought that identity sentences are metalinguistic: they are claims about the words involved. But that seems highly implausible. Suppose instead we think that we are trying to make sense of an identity claim, so we are trying to understand what claim would be made by it in different possible worlds, worlds in which the meanings could change. Then, if someone utters an identity statement, it will only be true if the meanings are fixed in a certain

way. So we come to change our understandings of the meaning even though what the sentence is about isn't directly metalinguistic.

Putting this in the two dimensional framework. The sentence

Hesperus is Phosphorous

is either necessarily true, or necessarily false.

So the matrix should look like this

	w ₁	w ₂
w ₁	T	T
w ₂	F	F

But if so, then whatever was being asserted wouldn't be informative, in the sense that it wouldn't distinguish between possible worlds. Following Gricean principles, Stalnaker says that we 'diagonalise', i.e. we project the diagonal values onto the columns above and below them, giving us :

	w ₁	w ₂
w ₁	T	F
w ₂	T	F

So the sentence we understand is contingent, even though identity is necessary.