

# *Counterpart Theory, Quantified Modal Logic, and Extra Argument Places*

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We can couch our modal statements in the language of modal logic (sometimes, anyway) and then have recourse to possible worlds to explain the semantics of that language. Or we can proceed more directly, speaking explicitly of possible worlds from the start. Those who prefer the second course, as I do, have a choice to make. To say that there might be blue swans, for instance, we might provide our everyday descriptive predicates with extra argument places and write:

For some world  $w$ , for some  $x$  in  $w$ ,  $x$  is-a-swan-at  $w$  and  $x$  is-blue-at  $w$ .

Or we might dispense with the extra places and just write something with our old-fashioned one-place predicates of swanhood and blueness:

For some world  $w$ , for some  $x$  in  $w$ ,  $x$  is a swan and  $x$  is blue.

Students of Professor Sainsbury's textbook in philosophical logic [1] will be taught that I have changed my mind on this question. We read that of the two approaches just mentioned, 'both are due to Lewis' (p. 255). Sainsbury first reports (p. 257) that the extra-argument-place treatment 'derives from' my paper 'Counterpart Theory and Quantified Modal Logic' [2]. He next reports that I have more recently given a reason for rejecting the extra-argument-place treatment: I have complained that it turns intrinsic properties into relations – as it might be, the familiar property of being a swan into some unheard-of swanning-at relation of things to worlds.

What's more, Sainsbury reports ([1], p. 257) that it is 'without explicitly alluding to this earlier treatment' of mine that I have denounced it. And thus I stand unmasked as a vain and evasive fellow, who repudiates his own former view and takes care not to let on that he's done so.

But Sainsbury kindly refrains from mentioning my other misdeeds. Having reported that my treatment in 'Counterpart Theory and Quantified Modal Logic' requires provision of the extra argument place, he could have gone on to report that the paper is full of blunders – careless passages in which I neglect to provide that extra argument place. In fact, there isn't any passage in which it is provided! To bring 'Counterpart Theory and Quantified Modal Logic' into line with Professor Sainsbury's teachings about what it says would take extensive rewriting.

Let's work through my second sample translation ([2], p. 118) from the language of quantified modal logic into the language that speaks of possible worlds explicitly. Similar remarks would apply to my other sample translations (including the first, in which the original sentence isn't modal at all). I said the modal sentence (1) translates into (2):

- (1)  $\diamond \exists x Fx$   
 (2)  $\exists y(Wy \ \& \ \exists x(Ixy \ \& \ Fx))$

where  $Wy$  means that  $y$  is a world, and  $Ixy$  means that  $x$  is in  $y$ . How did I go from (1) to (2)? I stipulated ([2], p. 118) that for any sentence  $\phi$ ,

T1: The translation of  $\phi$  is  $\phi^@$ ,

where '@' is a definite description denoting the actual world. (If we like, sentences containing '@' may be put into primitive notation by applying Russell's theory of descriptions.) So my translation of (1) is

- (1a)  $[\diamond \exists x Fx]^@$

Here we see a not-yet-explained notation in which a sentential expression is followed by a superscripted expression denoting a world. I defined this superscript notation in turn by a recursion ([2], p. 118). We find the clause for superscripted sentences that begin with  $\diamond$ , and we take the case where the number of variables free in  $\phi$  is zero:

T2j:  $[\diamond \phi]^\beta$  is  $\exists \beta_1(W\beta_1 \ \& \ \phi^{\beta_1})$ .

So, choosing the variable  $\beta_1$  as  $y$ , we have that (1a) is

- (1b)  $\exists y(Wy \ \& \ [\exists x Fx]^y)$ .

Next we find the clause for superscripted sentences that begin with  $\exists$ :

T2h:  $[\exists \alpha \phi]^\beta$  is  $\exists \alpha(I\alpha\beta \ \& \ \phi^\beta)$ .

So we have that (1b) is

- (1c)  $\exists y(Wy \ \& \ \exists x(Ixy \ \& \ [Fx]^y))$ .

It may look offhand as if the predicate  $F$  has now grown an extra argument place, occupied by a world-variable  $y$ ; but look again. The superscript notation means what I say it means – I'm the master. And what I say is given by the clause of the recursion that applies to superscripted atomic sentences:

T2a:  $\phi^\beta$  is  $\phi$ , if  $\phi$  is atomic.

So (1c), my translation of (1), turns out to be just what I said:

- (2)  $\exists y(Wy \ \& \ \exists x(Ixy \ \& \ Fx))$ .

And sure enough,  $F$  has ended up the same old one-place predicate it always was. Properties have not turned into relations. As I said ([2], p. 117,

emphasis added): ‘to form the sentence  $\phi^\beta$  ( $\phi$  holds in world  $\beta$ ) from the given sentence  $\phi$ , *we need only* restrict the range of each quantifier in  $\phi$  to the domain of things in the world denoted by  $\beta$ .’

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### *References*

- [1] Mark Sainsbury, *Logical Forms: An Introduction to Philosophical Logic* (Oxford: Blackwell, 1991).
- [2] David Lewis, ‘Counterpart Theory and Quantified Modal Logic’, *Journal of Philosophy* 65 (1968) 113–26.

## ***A Problem For Fictionalism About Possible Worlds***

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### *1. Introduction*

Every philosopher who talks seriously about modality talks about possible worlds. Some even believe what they say. Thus when David Lewis says ‘Blue swans are possible because there is a world where swans are blue,’ he means to commit himself to the existence of a real (but non-actual) universe inhabited by blue swans. Others believe what they say, but add that ‘possible worlds’ are to be identified with abstract representations within the actual world rather than concrete universes in Lewis’s sense. Both genuine and ‘ersatz’ realists agree, however, that quantification over possible worlds in philosophy is genuine quantification, and that it is legitimate because there really is a vast plurality of possible worlds.<sup>1</sup>

By contrast, some philosophers have hoped to earn the right to talk about possible worlds in explaining their modal views and all the vividness and precision this entails without taking on a commitment to the existence of worlds in any sense. Forbes ([4], ch. 4) calls such approaches ‘deflationist’. In the course of clarifying his modal views, the deflationist may say ‘There are blue swan worlds’; but the proposition he thereby expresses is one which can be true even if there are no possible worlds at all besides our own.

<sup>1</sup> For genuine modal realism, see [5] ch. 1; for the varieties of ersatz realism, see ch. 3 and references cited there.