

# 'Empiricism, Semantics and Ontology'

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## 1. Carnap's formal languages

A typed language: variables come in different grammatical categories:  $x^1, x^2, \dots;$   
 $x^1, x^2, \dots;$  etc.

Each type  $k$  of variables is associated with a pair of "quantifier" symbols  $^k, \kappa$ .  
Syntactically, these behave just like the quantifiers of ordinary first-order logic  
except that they can only bind variables of the appropriate type.

Each argument place of each predicate letter is associated with a certain type of  
variable: for a formula to be syntactically well-formed, the predicates' argument  
places have to be filled by variables of the right type. Similarly, each argument  
place of a function symbol, as well as the function symbol itself, is associated  
with a type.

What about the *logic* of these languages—which sentences and inferences are  
logically/analytically valid?

There's a certain minimal core which is common to all these languages, which  
we could specify as follows: all inferences among sentences of the language  
which would be valid in a standard first-order language without type-  
distinctions are valid.

But in the languages that interest Carnap, there are many more interesting  
logical truths. For example, there might be a type of "number-variables"  
 $n_1, n_2, \dots,$  and function symbols  $+, \times$  associated with this type, such that the  
transcriptions of the axioms of standard number theory into this notation are  
all logical truths.

What are 'frameworks'? They're like pieces of a kit for building languages: to  
specify a language succinctly, I can say 'L includes the thing-framework, the  
natural-number-framework and the proposition-framework', or some such.  
There will be interesting cross-linguistic relations of synonymy between  
languages which share frameworks.

## 2. Do Carnap's languages make sense?

Yes.

Objection: 'there are numbers' isn't an analytic sentence of English, and nor is  
'there are an  $x, y$  and  $z$  such that  $x$  is the sum of  $y$  and  $z$ '!

Response: then the sentence ' $n_1, n_2, n_3 (n_1 = n_2 + n_3)$ ' in Carnap's formal language  
isn't a translation of that sentence of English.

## 3. Carnap's formal languages and natural languages

You might think that none of this has any bearing on the questions  
metaphysicians are interested in. They don't formulate their questions in these

funny formal languages, but in English and other natural languages: for example, they ask 'are there numbers?'.

But Carnap is no ordinary language philosopher! He regards ordinary language as a source of pitfalls and confusions. In particular, it seems to me that he holds the following views about English.

- On the "standard" interpretation of English talk about numbers, it can be translated into the typed language described above: on this interpretation, 'there are numbers' is analytic, as are all the theorems of number theory; 'zero is red' and 'Caesar is prime' are meaningless, as are 'zero is not red', 'Caesar is not prime', 'numbers are mental', 'numbers are non-mental', etc.
- But things are made more complicated by the existence of another way of disambiguating these natural language sentences. On this interpretation, sentences which appear to be about non-linguistic entities are really about language. Thus 'there are no numbers' means something like 'it would be advisable for us to speak a language that lacked number-words, and 'there are numbers' means the negation of this. 'Numbers are non-mental' means 'in our language [or: in the language we ought to speak], the basic analytic truths involving number-words don't contain any mental vocabulary', etc. (This kind of interpretation is only available in the case of sweeping, general claims: there's no corresponding metalinguistic way of understanding ' $2 + 2 = 4$ '.)

#### 4. Can we introduce a language for doing metaphysics?

Carnap wants tolerance for the introduction of new linguistic forms. So even if we accept that English is a terrible language for doing traditional metaphysics in, why can't we introduce a new language better suited to this purpose? A language in which, e.g., neither 'there are numbers' nor 'there are no numbers' is analytic?

How would Carnap react to this proposal? Presumably, he would think that this manoeuvre fails to introduce a well-defined language. His reaction would be similar to his reaction to the following proposal: 'Let's introduce a language with exactly 17 one-place predicates  $F_1 \dots F_{17}$ , with the analytic truths  $\forall x (F_k(x) \supset F_{k+1}(x))$ .' Obviously you'd have to do a lot more than this to introduce a useful new language. Perhaps we should say that such manoeuvres fail to introduce meaningful languages; or that they do so, but that the languages in question are so full of indeterminacy as to be utterly useless.

What more do we have to do to introduce a properly meaningful language? Carnap (at least at some periods in his career) had a demanding theory of this: **verificationism**. Very roughly: you have to say, for each synthetic sentence of the language, how it can be confirmed or disconfirmed by experience. Until you've done this, you haven't fully specified a language. Thus, if I wanted to complete my introduction of the metaphysics-language, I would have to say something like "'There are numbers" is confirmed by experience of red, and disconfirmed by experience of blue', or something like that. If I did that, I would succeed in giving determinate truth values to the sentences I stipulated to be

synthetic. But this isn't a very interesting language, since I could also have made the reverse stipulation. There's no non-arbitrary way to do it.

Verificationism is also central to Carnap's motivation for the views about natural language I discussed above: for surely, if there was a non-arbitrary way to interpret the 'language of metaphysics', that interpretation would provide an admissible reading of natural language "metaphysical" sentences.

Verificationism is now out of favour. Philosophers found they could not state a criterion of meaningfulness which counted theoretical sentences of science as meaningful while ruling out sentences of metaphysics.

Question: what other doctrine might Carnapians put in place of verificationism?

### **5. Equivalents of Carnap's view for untyped languages**

Contrary to what Carnap thought, English singular names, pronouns and descriptions do not fall into different syntactic types. 'I am fond of New York and the number seventeen' is just not ill-formed. And 'Caesar is a prime number' is just false, not meaningless.

Fortunately, the central idea of Carnap's view can be separated from the assumption that we are dealing with typed languages. Even in an untyped language which only has one "quantifier", there can be lots of interesting "existential" analytic truths.

The only twist is that we now must admit that when two such languages have different analytic truths, the "existential quantifier" in the first means something different from the "existential quantifier" in the other.

### **6. A "Carnapian" attitude to metaphysics (?)**

There are many different things we might mean by 'there are'. We could give it a meaning on which 'there are numbers' is analytically true; we could give it a meaning on which 'there are numbers' is analytically false; we could give it a meaning on which 'there are numbers' is synthetic, and confirmed by red experiences; we could give it a meaning on which 'there are numbers' is synthetic, and confirmed by blue experiences... What we can't do is give it a meaning on which it won't be obvious how we should go about figuring out whether it is true.

Metaphysicians who have what they take to be substantive arguments about the existence of numbers are confused. We could put this by saying that they are *talking past each other*: they mean different things by 'there are'. Alternatively, we could say that it's *indeterminate* who's right in such disputes: 'there are', in these contexts, is indeterminate in meaning. The only nontrivial dispute that's in the vicinity is the practical question whether we should adopt a language in which 'there are numbers' is a truth (an analytic one), so if we want to be charitable, we can interpret these metaphysicians as if they were really arguing about that.