Carnapian frameworks

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Abstract

Carnap's seminal 'Empiricism, Semantics and Ontology' makes important use of the notion of a framework and the related distinction between internal and external questions. But what exactly is a framework? And what role does the internal/external (I/E) distinction play in Carnap's metaontology? In an influential series of papers, Matti Eklund has recently defended a bracingly straightforward interpretation: A Carnapian framework, Eklund says, is just a natural language. To ask an internal question, then, is just to ask a question in, say, English. To *try* to ask an external question is to try, absurdly, to ask a question in no language at all. Finding that so trivial an I/E distinction can't help to explain Carnap's deflationary metaontology, Eklund is led to attribute to Carnap a view he calls *ontological pluralism*. In this paper, I show that Eklund misreads Carnap, and I argue that this misreading obscures fundamental features of Carnap's philosophy. I then defend an account of frameworks as what Carnap called *semantical systems*, and I place this account in the context of Carnap's philosophical program of explication. Finally, I discuss the role that frameworks and the I/E distinction play in ESO, showing that ESO provides no reason to attribute the doctrine of ontological pluralism to Carnap.

Keywords Carnap · Explication · Ontology · Metaontology · Analyticity

1 Introduction

Rudolf Carnap has been on the minds of a lot of metaphysicians lately. Some merely aim to build on broadly Carnapian ideas to develop original theories of their own. Others are explicitly concerned with the historical Carnap. Matti Eklund counts himself among the latter camp. In a recent series of papers, Eklund has defended a distinctive interpretation of Carnap's metaontology, focusing in particular on Carnap's notion of a framework and the related distinction between internal and external questions (Eklund

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2016, 2013, 2009; see also Eklund 2012, 2006). His take is bracingly straightforward. A Carnapian framework, he says, is just a natural language, or a slight variation thereof. An internal question—a question posed *within* a framework—is thus a question posed in a language. An external question, understood as a question about a matter of fact, would be a question posed in no language at all. No wonder Carnap found such questions unintelligible. On the other hand, Eklund suggests, the practical question of which language to speak seems perfectly intelligible. Again, just as Carnap suggested.

If this reading is correct, then it refutes Quine's claim that the internal/external (I/E) distinction is bound up with the analytic/synthetic (A/S) distinction. In fact, on this reading, the I/E distinction does not seem to be bound up with much of anything that one might find problematic. The notion of a framework looks downright trivial. But this leaves Eklund with a puzzle, because Carnap seemed to think that the I/E distinction had significant consequences for metaontology. In particular, he seemed to think that it led to a broadly deflationary view about ontological inquiry. But how could something so trivial have such significant consequences? Eklund's solution to this puzzle has it that the I/E distinction does not, in fact, deliver any deflationary conclusions on its own. Rather, the main driver of Carnap's deflationary metaontology, according to Eklund, was his independent commitment to *ontological pluralism*, the view, roughly, that there are distinct languages L_1 and L_2 that we could speak such that (i) different existence sentences come out true in L_1 and L_2, and (ii) L_1 and L_2 describe the facts of the world equally well and fully.

As far as I know, Eklund is the first to actually *defend* this view of Carnapian frameworks and the I/E distinction, but it seems to be assumed in a lot of recent work. Alan Sidelle (2016, p. 62), for example, explicitly endorses the claim that Carnapian frameworks are just fragments of natural languages. Huw Price (2009) and Amie Thomasson (2016) seem to agree. While these philosophers may simply be responding independently to Carnap's work, Eklund's account of Carnap's metaontology may also be gaining a following of its own. For instance, in a recent paper in which he largely sets the historical Carnap aside, Eli Hirsch (2016) remarks in passing that his "general understanding of Carnap's metaontological views is very close to Matti Eklund's" (p. 105).

In this paper, I show that Eklund misreads Carnap, and I argue that this misreading obscures fundamental features of Carnap's philosophy. The paper proceeds as follows. The next section briefly presents Eklund's defense of his interpretation. It also adduces an additional argument on Eklund's behalf. Section 3 shows that Eklund's interpretation is mistaken. In particular, it offers three different sorts of reasons to conclude that frameworks are not natural languages. First, if we assume that frameworks are natural languages, then it is hard to make sense of a whole bunch of things that Carnap says in 'Empiricism, Semantics, and Ontology' (ESO), including his ubiquitous references to *constructing* and *establishing* frameworks, his insistence that a crucial step in the formation of a framework is the introduction of certain *variables*, and his explicit focus on the *specialized* languages of science and semantics. Second, Eklund's interpretation has implausible consequences concerning the nature of pragmatic-external questions. Specifically, since there is no reason to pose the practical question of which language to speak in anything other than English, and an internal question, by Eklund's lights, is just a question posed in English, his interpretation actually makes pragmatic-external

questions into a species of internal question. Surely this is not what Carnap intended. Finally, since Carnap says in ESO that a variety of sentences are analytic in this or that framework, Eklund's interpretation of frameworks as natural languages conflicts with Carnap's repeated insistence, both before and after ESO, that no natural language sentence is properly called analytic. Together, these considerations show that frameworks are not natural languages, but they do not tell us what frameworks actually are. I claim that frameworks are what Carnap called *semantical systems*, roughly, formal languages endowed with a syntax, a semantics, and a confirmation theory. Section 4 offers an initial argument for this conclusion, by appealing to Carnap's immediate purpose in ESO of defending his work in semantics against objections that had been raised by fellow empiricists. The task of the remainder of the section, beyond explaining what semantical systems are, is to explain their significance for Carnap's philosophy by placing them within the context of his ideal of explication and language engineering. This discussion shows why it *makes sense* for Carnap to be concerned with semantical systems rather than natural languages in ESO—why, in light of his broader philosophical orientation, we should *expect* him to understand frameworks as semantical systems. Section 5 considers how the I/E distinction should be understood once frameworks are seen as semantical systems, and it explains how this interpretation avoids the puzzles and problems that beset Eklund's. Section 6 discusses the role that frameworks, understood as formal semantical systems, play in Carnap's remarks on ontology in ESO. Section 7 briefly concludes.

2 Eklund on frameworks

Carnap set out his views on ontology most prominently in 'Empiricism, Semantics, and Ontology' (1950a). As he explains in his 'Intellectual Autobiography' (1963a, p. 66), ESO was written in response to a flurry of objections raised against his use of abstracta in his work on semantics (e.g., Ryle 1949; Nagel 1948, 1942; Quine 1948; Black 1945). In general, Carnap's critics accused him of "hypostasizing" properties, propositions, and so on, without providing any reason to think that such things really do exist.[1] These charges were especially troubling to Carnap, since they came from fellow empiricists who insisted that he had betrayed empiricism for some form of platonism. Most disturbing of all, perhaps, was the insinuation that countenancing abstracta while claiming to be an empiricist amounted to hypocrisy or intellectual dishonesty (e.g., Quine 1951a; see also Quine 1960, §§49, 56).

Carnap makes clear in ESO's opening paragraphs that he has these critics very much in mind:

> Empiricists are in general rather suspicious with respect to any kind of abstract entities...As far as possible they try to avoid any reference to abstract entities and to restrict themselves to what is sometimes called a nominalistic language...However, within certain scientific contexts it seems hardly possible to avoid them...Recently the problem of abstract entities has arisen in connection

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[1] Quine and Tarski had been pressing this sort of objection on Carnap in private for many years (e.g., Quine and Carnap 1990, pp. 241, 294–300; Frost-Arnold 2013, pp. 141, 143, 153).

with semantics, the theory of meaning and truth. Some semanticists say that certain expressions designate certain entities, and among these designated entities they include not only concrete material things but also abstract entities, e.g., properties as designated by predicates and propositions as designated by sentences. Others object strongly to this procedure as violating the basic principles of empiricism and leading back to a metaphysical ontology of the Platonic kind.

It is the purpose of this article to clarify this controversial issue. The nature and implications of the acceptance of a language referring to abstract entities will...be discussed in general; it will be shown that using such a language does not imply embracing a Platonic ontology but is perfectly compatible with empiricism and strictly scientific thinking...It is hoped that the clarification of the issue will be useful to those who would like to accept abstract entities in their work in mathematics, physics, semantics, or any other field; it may help them to overcome nominalistic scruples. (Carnap 1950a, pp. 20–21)

The first paragraph sets the stage. First, Carnap describes the (apparent) predicament of the empiricist with respect to abstract objects quite generally. Empiricists are suspicious of abstract objects, Carnap tells us. And yet abstract objects are extremely useful for science. What is an empiricist to do? Next, he alludes to the controversy over his work in semantics in particular, and to the objections raised by his empiricist critics. Finally, in the second paragraph, he tells us how he will respond. He will acknowledge that he accepts abstract objects but argue that this is consistent with empiricism. To spell out Carnap's precise goal in ESO, then, one would want to consider what he takes empiricism to be. Unfortunately, Eklund does not get into these details.[2] Instead, he is content to say that Carnap's response will involve "dismiss[ing] ontological questions as somehow *shallow"* (Eklund 2009, p. 136; see also Eklund 2013, p. 231).[3]

Still, Eklund says, Carnap does not *merely* dismiss ontological questions. He also offers a positive view, which crucially involves the notion of a *framework* and the related I/E distinction. Here's Carnap:

If someone wishes to speak in his language about a new kind of entities, he has to introduce a system of new ways of speaking, subject to new rules; we shall call this procedure the construction of a linguistic *framework* for the new entities in question. And now we must distinguish two kinds of questions of existence: first, questions of the existence of certain entities of the new kind *within the framework*; we call them *internal questions*; and second, questions concerning the existence or reality *of the system of entities as a whole*, called *external questions*. Internal questions and possible answers to them are formulated with

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[2] Eklund occasionally attempts to downplay the extent to which ESO is concerned specifically with abstracta (e.g., Eklund 2013, p. 231). But Carnap's focus is unmistakable. (The title of the introduction is 'The Problem of Abstract Entities'!)

[3] A quick note on 'ontology' and cognate expressions. Carnap himself took such expressions to suggest the sort of question that is supposed to be answerable only by means of a metaphysical, synthetic *a priori* insight (e.g., Quine and Carnap 1990, pp. 318, 385–386, 406; 1947, pp. 42–43). Accordingly, he took ontological questions to be confused pseudoquestions, and he distinguished these from the sorts of existence questions that he found respectable. Due in part to the influence of Quine, 'ontology' no longer has these connotations. In any case, though, for the purposes of this paper, ontological questions are just existence questions.

the help of the new forms of expressions. The answers may be found either by purely logical methods or by empirical methods, depending upon whether the framework is a logical or a factual one. An external question is of a problematic character which is in need of closer examination. (Carnap 1950a, pp. 21–22)[4]

Later, Carnap elaborates on the nature of external questions:

From the internal questions we must clearly distinguish external questions, i.e., philosophical questions concerning the existence or reality of the total system of the new entities. Many philosophers regard a question of this kind as an onto-logical question which must be raised and answered *before* the introduction of the new language forms. The latter introduction, they believe, is legitimate only if it can be justified by an ontological insight supplying an affirmative answer to the question of reality. In contrast to this view, we take the position that the introduction of the new ways of speaking does not need any theoretical justifica-tion because it does not imply any assertion of reality...An alleged statement of the reality of the framework of entities is a pseudo-statement without cognitive content. To be sure, we have to face at this point an important question; but it is a practical, not a theoretical question; it is the question of whether or not to accept the new linguistic forms. (Carnap 1950a, p. 31)

Thus, an F-framework, for Carnap, is something that can be used to talk about Fs (where an F is a physical thing, or a number, or whatever the case may be). Given an F-framework, a question of the form "Are there Fs?" can be taken in different ways. If it is understood as an *internal* question, a question asked from within the F-framework, then it is unproblematic. External questions can be divided into *factual*-external questions and *pragmatic*-external questions. Factual-external questions, according to Carnap, are not really questions at all—they are nonsensical pseudoquestions. Pragmatic-external questions, on the other hand, concern whether or not to make use of a framework. Such questions are intelligible, and often important. But the answer to a pragmatic-external question is a decision or an action rather than an assertion or a proposition or anything else that might be true or false.[5]

So far, so good. But what exactly is a *framework* supposed to be? This, Eklund tells us, is the key interpretive question. And he suggests that there are two possible answers worth considering. According to the first, a framework is simply a language, or a language fragment. According to the second, a framework is "something more relativistically or idealistically loaded; something more along the lines of [a] *perspec-tive*, or [a] *worldview*" (Eklund 2009, p. 132; see also Eklund 2013, p. 233). The idea

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[4] This quotation and the next reflect the revisions that Carnap made to ESO when he published it in a supplement to the second edition of *Meaning and Necessity* (1956a).

[5] The terms 'factual-external' and 'pragmatic-external' are Eklund's. Carnap probably would have objected to using 'factual-external' to refer to those external questions that he considered to be confused pseudo-questions, since, as Carnap used the term 'factual', this would have suggested that such questions could be settled by empirical evidence. The term that Carnap uses in ESO is not 'factual' but 'theoretical'. What he meant was that such questions are supposed to be *cognitive* or *descriptive*. In any case, I have chosen to stick with Eklund's terminology here. This should not cause any confusion, so long as we keep in mind that the term is not intended to suggest that the relevant questions are necessarily taken to be empirical. Thanks to an anonymous reviewer for raising this issue.

is that, on the second interpretation, Carnap's position is analogous to that of the moral relativist who says that φing is wrong relative to one culture but not another and denies that the question whether φing is simply wrong, full stop, makes any sense.

Eklund favors the first interpretation, on which a framework is just a language (Eklund 2016, p. 168; 2013, p. 233; 2009, p. 132). Given that he takes this to be *the* key interpretive question, it is surprising how little he says in defense of his answer. Still, I think we can discern two points that he makes on its behalf. First, he points to the text, specifically the sentence in which Carnap introduces the notion of a framework:

> If someone wishes to speak in his language about a new kind of entities, he has to introduce a system of new ways of speaking, subject to new rules; we shall call this procedure the construction of a linguistic *framework* for the new entities in question. (Carnap 1950a, p. 21)

"This makes perfect sense," Eklund says, "if by 'framework' Carnap means language, or, better, language-fragment" (Eklund 2009, p. 132; see also Eklund 2013, p. 234). Presumably, he means to suggest that the passage makes less than perfect sense if by 'framework' Carnap means *perspective* or *worldview*. Second, he points out that "when Carnap introduces the notion of a framework he gives no indication that the existence of frameworks, in the given sense, could be up for debate" (Eklund 2009, pp. 132–133). This, Eklund says, argues in favor of understanding frameworks as languages, since, if Carnap had taken frameworks to be something more "theoretically loaded," presumably he would have done more to explain "what frameworks might be, [and] why we should believe in them" (Eklund 2009, p. 141).

At this point, Eklund has framed his preferred reading as one on which frameworks are *languages*, but he has not yet said whether he has in mind ordinary natural languages or perhaps something more regimented or formalized. Now, since the I/E distinction is given in terms of the notion of a framework, Eklund's interpretation of the latter shapes his understanding of the former. And when we turn to Eklund's discussion of the I/E distinction, we will find that he makes very clear that he understands frameworks as *natural* languages (or slight variations thereof). Before turning to that discussion, then, I will adduce on Eklund's behalf a further piece of evidence in favor of the claim that Carnapian frameworks are specifically *natural* languages. This evidence consists in the simple fact that Carnap offers *examples* of internal questions in ESO, formulated within this or that framework, that look for all the world like sentences of English. So, for instance, in what Carnap calls the *thing framework*, he says that we can raise and answer such internal questions as

(1) Is there a white piece of paper on my desk?

and

(2) Are unicorns and centaurs real or merely imaginary?

These are perfectly good sentences of ordinary English as far as syntax is concerned, and Carnap offers no deviant semantics for them. This seems like strong evidence that, insofar as Carnapian frameworks are languages of some sort, they are indeed natural languages.

Having offered this bit of evidence on Eklund's behalf, we can now turn to his account of the I/E distinction. Here's Eklund:

If "framework" means language-fragment, the internal questions are those that concern what comes out true in the language we actually employ; [the] pragmatic-external [questions] concern which language it is useful to employ; and [the] factual-external questions are neither and thus by Carnap's lights make no sense. Here is an analogy. One can imagine three different debates, two of which are in order and one confused, that all can be brought under the heading "Is the tomato a fruit or a vegetable?" (1) Most straightforwardly, we can conceive of a debate over whether the [sentence] "the tomato is a fruit" is true as turning on what actually comes out true in our common language, English. When you and I discuss the matter, then you win if you say "the tomato is a fruit" and this sentence actually is what comes out true in our language. Taken thus, it is an internal question. (2) Somewhat less straightforwardly, perhaps, we can imagine a debate where the disputants are less concerned with what comes out true in English as actually spoken, but are concerned with whether it would be more pragmatically useful to speak a version of English just like English except for the possible difference that "the tomato is a fruit" comes out true there. Taken thus, the debate is over a pragmatic-external question. (3) Most obscurely, we can imagine two disputants who announce that they are not concerned with what comes out true in English—perhaps both agree that "the tomato is a fruit" is best English—and who further announce that they are not concerned with a pragmatic question of how we should speak. They announce that what they are concerned with is whether, in some language-independent sense, the tomato really is a fruit. If it is hard to wrap one's mind around what this would amount to, that is because these disputants would be seriously confused. (Eklund 2009, p. 133)

Turning to ontological matters, Eklund continues:

Take the dispute between the platonist and the nominalist over whether there are numbers, as we would naively put it. By Carnap's lights, we must distinguish between different things that can be going on. The dispute can be over the truth of the sentence "there are numbers"...in which case it is over an internal question. It can be about whether we should employ a language like English except slightly different, such that the counterpart of "there are numbers" comes out true there...Or the dispute can be over a factual-external question, in which case it is confused. (Eklund 2009, pp. 134–135)

The first point that I want to make is just the one that I flagged above, viz. that Eklund takes Carnapian frameworks to be *natural* languages. He arguably suggests as much when he says that internal questions concern what comes out true *in the language we actually employ*, since we actually employ natural languages.[6] But his commitment to this reading comes out even more clearly in the course of his discussion of the debates over "The tomato is a fruit" and "There are numbers." In the tomato example, Eklund

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[6] On this reading, Eklund's phrase *the language we actually employ* amounts to something like *the language we actually employ in ordinary life*. There is, however, an alternative reading of the sentence, on which it says that internal questions concern what comes out true *in the language we actually employ to ask them*, whether or not this is the language that we use in ordinary life. If this second reading is correct, then this particular sentence does not cut one way or the other on the question whether Eklund takes frameworks to be natural languages or languages of some other sort.

tells us that the internal question concerns whether "The tomato is a fruit" comes out true *in English*. Meanwhile, the pragmatic-external question concerns whether it would be useful to speak an *English-like language* in which "The tomato is a fruit" comes out true. And similarly in the numbers dispute. I conclude that, in general, Eklund takes Carnapian frameworks to be natural languages or slight variations thereof.

Given this understanding of frameworks, the I/E distinction is easy to grasp. To ask an internal question is just to ask whether ϕ comes out true in English, for some English sentence ϕ. To ask a pragmatic-external question is to ask whether we ought to speak an English-like language in which ϕ comes out true, for some (syntactically individuated) English sentence ϕ. To *try* to ask a factual-external question is to try to ask a question in no language at all. Alas, Eklund says, such questions are "obviously nonsensical" (Eklund 2009, p. 134). In effect, then, for Carnap to insist that factual-external questions make no sense is merely for him to insist that whenever we ask or answer a question, we do so "using some language or other" (Eklund 2013, p. 232). More generally, Eklund understands Carnap's twin notions of a framework and an I/E distinction as straightforward and uncontroversial.

The problem, Eklund thinks, is that Carnap is supposed to be some kind of metaontological deflationist—he's supposed to think that ontological questions are *shallow*—and the I/E distinction is supposed to play some role in justifying his deflationism. But how could something so trivial help to deflate ontological questions? You might think that the story goes like this. In general, philosophers who are interested in ontological questions tend to try to ask factual-external questions. Once these nonsensical pseudoquestions are set aside, the only remaining questions in the neighborhood are (i) internal ontological questions, and (ii) pragmatic-external questions. But internal ontological questions are shallow, and pragmatic-external questions are non-cognitive. The upshot is deflationism: There are no deep ontological questions.

Eklund isn't satisfied with this story. The problem is that we have been given no reason to think that internal ontological questions are really shallow, as the story suggests. For all we've been told, an internal question is simply a question posed in the language we speak. Are *all* such questions supposed to be shallow? If not, then what makes ontological questions special? Eklund concludes that the I/E distinction lacks deflationary consequences on its own. He then reasons that, since, by all accounts, Carnap *was* a deflationist, he must have endorsed some further claim that, together with the I/E distinction, *does* have deflationary consequences, or at least could plausibly be thought to have deflationary consequences.

Eklund argues that this additional assumption is *ontological pluralism*. Roughly, this is the view that there are distinct languages L_1 and L_2 that we could speak such that (i) different existence sentences come out true in L_1 and L_2, and (ii) L_1 and L_2 describe the facts of the world equally well and fully (Eklund 2009, p. 137). Why the hedge? Well, the idea, which Eklund finds not just in Carnap but in the work of Hilary Putnam and Eli Hirsch, is supposed to be something like this: There is a language in which nominalism comes out true, and a language in which platonism comes out true, and each language can describe the facts of the world equally well and fully. The problem is that it is utterly trivial that there is a possible language in which the syntactical string 'There are numbers' is interpreted so that it comes out true and a possible language in which that same string is interpreted so that it comes out false.

Surely, then, this is not what these philosophers are trying to say. The problem, Eklund suggests, is that a more satisfactory formulation is not easy to find. In any case, we do not need to concern ourselves with this problem, since the notion of ontological pluralism turns out to be entirely foreign to Carnap.

3 Frameworks are not natural languages

In the introduction to ESO, Carnap says that he will discuss what is involved in accepting a *language* referring to abstract entities. So there really should be no denying that he understood frameworks as languages of *some* kind. Eklund claims something stronger, though. He claims that the internal question "Are there numbers?" is just the question whether "There are numbers" comes out true in English. More generally, he claims that frameworks are just *natural* languages (or slight variations thereof). And we do not need to look far in ESO to find Carnap saying things that would be puzzling if this were true.

Notice, for instance, that ESO is filled with creation talk. We hear about *constructing* frameworks and *establishing* them. We hear about *introducing* expressions and *laying down* rules. None of this would be at home in a discussion of the properties of a natural language. What's more, Carnap says that a crucial step in the construction of a framework is the introduction of certain *variables*. Yet everyday English makes no use of variables. Carnap also makes frequent reference in ESO to *specialized* languages, specifically languages associated with the sciences and philosophical semantics. Consider the introduction. Empiricists are generally suspicious of abstract entities, Carnap tells us. And yet, he continues, "*within certain scientific contexts* it seems hardly possible to avoid them":

> In the case of mathematics, some empiricists try to find a way out by treating the whole of mathematics as a mere calculus, a formal system for which no interpretation is given or can be given. Accordingly, the mathematician is said to speak not about numbers, functions, and infinite classes, but merely about meaningless symbols and formulas manipulated according to given formal rules. In physics it is more difficult to shun the suspected entities, because the language of physics serves for the communication of reports and predictions and hence cannot be taken as a mere calculus...Recently the problem of abstract entities has arisen again in connection with semantics... (Carnap 1950a, p. 20)

In this passage, Carnap seems to be concerned less with ordinary English than with, as he puts it, the language (or, perhaps, the mere *calculus*) of mathematics, the language of physics, and so on. He concludes the introduction by expressing the hope that the paper "will be useful to those who would like to accept abstract entities in their work in mathematics, physics, semantics, or any other field" (p. 20). On the face of it, Eklund's interpretation makes all of this sound rather odd.

A second problem concerns the nature of pragmatic-external questions. On Eklund's reading, recall, internal questions are just questions posed in English. Factual-external questions are questions posed in no language at all. Pragmatic-external questions, he says, are questions about which language we should speak. But, now, consider: In

what language are pragmatic-external questions posed? On Eklund's reading, there is no reason at all for them to be posed in anything other than English. But, then, *why call them external?* Eklund's reading turns pragmatic-external questions into a species of *internal* question. Since this is surely not what Carnap had in mind, we have good reason to reject Eklund's reading.

You might try defending Eklund here. My objection runs like this:

(3) Pragmatic-external questions are posed in English.
(4) According to Eklund, internal questions are just questions posed in English.
(5) So, according to Eklund, pragmatic-external questions are internal questions.

But this argument is valid only if (4) is read so that it entails

(4.1) According to Eklund, every question posed in English is an internal question.

But perhaps (4) should be read so that it does not entail (4.1) but only something along the lines of

(4.2) According to Eklund, every internal question is a question posed in English (or some other natural language).

If (4) is read as (4.2), then (3) makes no trouble. For Eklund can say that (i) frameworks are language-fragments such that any framework **S** will be a proper subset of (e.g.) English; (ii) pragmatic-external questions (with respect to **S**) are questions posed in English but not in **S**; and (iii) factual-external questions are pseudoquestions (purporting to be) posed in no language at all. The defense, then, is that since reading (4) as entailing (4.1) leads to problems, while reading (4) as (4.2) does not, charity recommends reading (4) as (4.2).[7]

I don't think this will work. The problem is that, even if (4.2) gives a plausible reading of (4) when the latter is considered in isolation, it does not give a plausible reading of Eklund. The most significant reason to doubt this interpretation, I think, is that Eklund says nothing at all about what distinguishes the part of English that falls within **S** from the part of English that falls outside of it. In virtue of what is the pragmatic-external question posed in English supposed to fall outside **S**? Eklund never so much as acknowledges the question. This would be strange if the answer were crucial to his account, as it would be on the suggested interpretation.

Consider Eklund's characterization of the I/E distinction in the following:

> On the language pluralist understanding of Carnap, the distinction between internal and external questions amounts to the following. Internal questions are questions raised using a particular language. The sentence "there are numbers," non-semantically individuated, is part of many different possible languages and its truth-value is relative to the language employed. We can also ask which language is the most useful to employ: this is a pragmatic external question. But it is clear why there can be no such thing as a factual external question: when the language pluralist insists that external questions understood as factual questions are non-questions, what she insists is simply that whenever we ask questions we do that using some language or other. One would only ask a factual external

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7 Thanks to an anonymous reviewer for raising the possibility of this sort of defense.

> question if, absurdly, one attempted to stand outside of language. (Eklund 2016, pp. 166–167)

Two points seem worth noting. First, Eklund says straightforwardly that internal questions are questions asked in a particular language. And he offers this—and nothing else—as an explanation of what internal questions are *supposed to be*. This would be seriously misleading if he understood internal questions to be those questions posed in (e.g.) English that have properties X, Y, and Z. If you were trying to explain what *geological questions* are, or what *rhetorical questions* are, you would not say that they are questions posed in English and then just stop talking. Second, consider why Eklund says that it is *clear* that factual-external questions must be pseudoquestions. He seems to be reasoning based on something like (4.1): Since any question raised *in* a given language will be an internal question, an external question (a factual-external question, anyway) must be a question raised in no language at all. And such a "question" is *clearly* a pseudoquestion. By contrast, if all we have to go on is (4.2), then it is not at all clear that factual-external questions must be pseudoquestions, for we have not yet been given any kind of independent characterization of what a factual-external question is supposed to be. I conclude, then, that Eklund intends (4) to be understood so that it entails (4.1). In that case, (5) follows.[8]

A third problem for Eklund's account concerns the A/S distinction. Quine famously took I/E to depend on A/S. But, Quine argued, A/S is unclear at best:

> I do not know whether the statement 'Everything green is extended' is analytic. Now does my indecision over this example really betray an incomplete understanding, an incomplete grasp of the "meanings," of 'green' and 'extended'? I think not. The trouble is not with 'green' or 'extended', but with 'analytic'. (Quine 1951b, p. 32)

Upon the publication of 'Two Dogmas', Carnap quickly drafted a rebuttal (Carnap 1990).[9] It begins by directly addressing Quine's suggestion that the notion of analyticity is to blame for his indecision over whether 'Everything green is extended' is to be counted as analytic:

> It seems completely clear to me...that the difficulty lies here in the unclarity of the word 'green', namely in an indecision over whether one should use the word

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[8] You might think that Eklund's frequent suggestion that frameworks are *fragments* of natural languages is a sign that he's thinking along the lines of (4.2). Again, I don't think that this is right. But why, then, does Eklund bother mentioning fragments at all? Here's what I think is going on. In ESO, Carnap says, very roughly, that to get an F-framework up and running, all you need is the means to talk about Fs. So if you're inclined to think of frameworks in terms of natural languages, this suggests that a numbers-framework, for instance, does not need to include the entire English language. It just needs to include those parts of English that are necessary for talking about numbers. On the other hand, the entire English language would still qualify as a numbers-framework, since it obviously has the means to talk about numbers.

[9] Unfortunately, this rebuttal remained unpublished for many years. Why didn't Carnap publish the paper? Not because he had second thoughts about the point that I wish to emphasize here, since he went on to make this very same point in later correspondence and published work. Richard Creath (1990, p. 36) offers a plausible explanation. He suggests that Carnap didn't publish the paper because he thought that he would soon have an opportunity to give a more comprehensive response to Quine in the volume *The Philosophy of Rudolf Carnap* that P. A. Schilpp was then putting together. Unfortunately, publication of that volume ended up being significantly delayed.

for something unextended, i.e., for a single space-time point. In daily life it is never so used, and one scarcely ever speaks of space-time points. For that reason this special unclarity plays as small a role as the unclarity over whether the term 'mouse' should also be used for animals which, apart from their greenness, are completely similar to the mice we know, but are as large as cats. Because there are no such animals, one ordinarily never considers the question of whether one would use the term for them or not. That, however, means an unclarity in the meaning of the term. (Carnap 1990, pp. 427–428)

Because of the ambiguity of 'Everything green is extended', Carnap says, "*one cannot even raise the question of whether it is analytic*" (p. 429, emphasis added). Plainly this is not because 'green' or 'extended' or any other expression in the sentence is *uniquely* or *especially* ambiguous in comparison with other English expressions. Nor does Carnap think that the problem is that the expressions of *English* are uniquely or especially ambiguous in comparison with the expressions of other natural languages. In general, Carnap says, "the analytic-synthetic distinction can be drawn always and only with respect to a *language system*, i.e., a language organized according to explicitly formulated rules, not with respect to a historically given natural language" (p. 432, emphasis added).[10]

Thus, Carnap denied that sentences of natural languages are properly called analytic. And yet, in ESO, he is perfectly happy to apply the term to sentences formulated in a framework. He says, for example, that a variety of sentences are analytic in the numbers framework (Carnap 1950a, pp. 24–25). Since Carnap denied that any sentence is analytic in a natural language but allowed that various sentences are analytic in the numbers framework, we should conclude that Carnap did not take the numbers framework to be a fragment of a natural language, or even a slight variation thereof.

4 Explication

If frameworks are not natural languages, then what are they? Consider the context in which ESO was written. Carnap's *Studies in Semantics* (1947, 1943, 1942), in which he countenanced properties, propositions, and a host of other abstracta, had produced a backlash among empiricists, who objected to what they took to be Carnap's embrace of metaphysics. On Carnap's reading, the core objection among these empiricist critics was that his acceptance of abstracta amounted to a betrayal of empiricism. In ESO, Carnap wanted to defend himself against this objection. That is, he wanted to show that his use of abstracta in his work on semantics (and elsewhere) was, in fact, *consistent* with empiricism. But, now, how exactly does Carnap make use of abstracta in his work on semantics? He allows variables to range over them in *semantical systems* that he is happy to use and acknowledge as potentially useful for scientific inquiry. So for Carnap to show that his use of abstracta in his work on semantics was consistent with empiricism, he needed to show that accepting a *semantical system* whose variables

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[10] We need not be nervous about relying for this point on a paper that Carnap never attempted to publish. Again, Carnap maintained this same position in later correspondence (e.g., Quine and Carnap 1990, p. 435) and published work (e.g., Carnap 1963b, p. 918). See also Carnap (1955, 1952).

range over abstracta is consistent with empiricism. What he actually *says* in ESO is that accepting a *linguistic framework* whose variables range over abstracta is consistent with empiricism. The obvious inference is that linguistic frameworks simply *are* semantical systems.

We will turn, in the next section, to a discussion of how the I/E distinction should be understood once frameworks are recognized as semantical systems. As we will see, the puzzles that beset Eklund's interpretation simply do not arise on this account. The task of this section, beyond saying what semantical systems are, is to explain their significance for Carnap's philosophy, specifically by locating them within the context of his ideal of explication and language engineering. The point is to show why, even when we step back from Carnap's immediate aim of defending his work in semantics, it makes sense for Carnap to be concerned with semantical systems in ESO—why, in light of Carnap's broader philosophical concerns, we should *expect* him to understand frameworks as constructed semantical systems rather than natural languages. In this way, the section contributes to a broader inductive argument for the conclusion that Carnapian frameworks are not natural languages but formal semantical systems. (If, given Carnap's broad philosophical orientation, it would make more sense for him to understand frameworks as constructed semantical systems than it would for him to understand them as natural languages, that is some reason to think that he *did* understand them as semantical systems.) But I also hope to simply shed some light on ESO by relating it to Carnap's broader philosophical project, since some recent discussions have obscured this connection by treating ESO in isolation.

Throughout his career, Carnap tried to use the tools of logic to promote scientific progress, both by clarifying and systematizing the language of science and by revealing the confusions underlying certain perennial disputes so that they might be set aside in favor of more productive endeavors. In the *Aufbau*, he aimed to reveal the futility of debates among realists, idealists, and phenomenalists by using the formal methods of *Principia Mathematica* to develop a canonical language for science and then showing that those debates could not be formulated in it. In *The Logical Syntax of Language*, Carnap took up the disputes arising out of the foundations crisis in mathematics concerning the "true nature" of logic and mathematics. His reflections led him to the principle of tolerance, which provides the setting for his program of explication.

For Frege and Russell, the truths of logic were *laws* governing absolutely everything there is. On this conception, "logic is concerned with the real world just as truly as zoology, though with its more abstract and general features" (Russell 1919, p. 169).[11] Given Carnap's empiricism, this was a non-starter. Instead, under the influence of Wittgenstein, Carnap came to see logical truths as grounded in the meanings of the logical connectives, where those meanings are given by rules. But Wittgenstein understood his picture theory of meaning to single out one *particular* set of rules, up to isomorphism, so that the one true logic fell out of the nature of meaning or representation. By the early 1930s, Carnap had abandoned the picture theory. What was left, at that point, was just the idea that the truths of logic—including, for Carnap, the truths of mathematics—are truths based entirely on linguistic rules. This meant that the various logical and mathematical systems that were being proposed in the

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[11] For an illuminating discussion of Frege's universalist conception of logic, see Goldfarb (2010).

wake of the discovery of the set theoretic antinomies were not conflicting theories or assertions. They were rather different *languages* that we might or might not choose to speak. And it seemed to Carnap that a language, a set of rules for the use of expressions, could hardly be true or false, correct or incorrect. It could only be more or less useful for achieving one's purposes.

For someone desperate to identify the one true logic, the variety of logical and mathematical systems on offer might have seemed disconcertingly large. Once Carnap accepted that a logic was just a language, however, the situation immediately took on a new aspect. If we are to make prudent choices about the languages that we adopt, it now seemed to Carnap, then surely we ought to consider a reasonable range of alternatives. From this perspective, there was actually far less variety among the logical systems on offer than one might have hoped. Here's Carnap in the introduction to *Logical Syntax*:

> The range of possible language-forms and, consequently, of the various possible logical systems, is incomparably greater than the very narrow circle to which earlier investigations in modern logic have been limited. Up to the present, there has been only a very slight deviation, in a few points here and there, from the form of language developed by Russell which has already become classical...The fact that no attempts have been made to venture still further from classical forms is perhaps due to the widely held opinion that any such deviations must be justified—that is, that the new language-form must be proved to be 'correct' and to constitute a faithful rendering of 'the true logic'. To eliminate this standpoint, together with the pseudo-problems and wearisome controversies which arise as a result of it, is one of the chief tasks of this book. (Carnap 1934a, pp. xiv–xv)

Carnap proposed to replace the old standpoint with that of the principle of tolerance:

> *In logic, there are no morals*. Everyone is at liberty to build up his own logic, i.e. his own form of language, as he wishes. All that is required of him is that, if he wishes to discuss it, he must state his methods clearly, and give syntactical rules instead of philosophical arguments. (Carnap 1934a, p. 52)

When he mentions *philosophical arguments* here—and one must remember that, for Carnap, "philosophical" is almost always a term of abuse—he is thinking of claims about the *true nature* of mathematical or logical objects that were threatening to dominate debates in the foundations of mathematics. The sorts of claims, in other words, marshaled in service of the conclusion that this or that logical system is the *correct* system. On Carnap's view, all such arguments are misplaced. Indeed, they are better understood not as assertions but as suggestions concerning which language to adopt (Carnap 1934a, §78). Once one sees that a logic is just a language, "the conflict between the divergent points of view on the problem of the foundations of mathematics disappears" (Carnap 1934a, p. xv). There is no need to show that a possible logical system is correct or legitimate before constructing it. All that is required, Carnap says, is that you define your system in terms of *clear rules*. Given these rules, we can investigate the system and study its features. The only remaining question is whether the system is useful (e.g., Carnap 1956b, p. 41; 1938, p. 34; 1937, p. 4; 1934b, p. 15).

I have presented Carnap as reasoning that since different logical systems are simply different languages, there is no sense in which one of them is uniquely correct. But

you might think that this really depends on what these systems are for. Of course, we're assuming, with Carnap, that they are not best understood as attempting to describe the fundamental structure of the world by formulating the most general laws governing everything whatsoever. But you might suggest an alternative conception that we've so far seen no reason to rule out. On this conception, these systems are attempting to describe or model the meanings or logical forms of natural language expressions—perhaps, in particular, expressions like 'and', 'or', and 'not', as well as 'valid', 'consequence', and so on—as these expressions are used in general or as they are used in scientific discourse (see, e.g., Cook 2005, p. 393; Corcoran 1973). If this is right, then perhaps we can settle which system is correct by attempting to find out what the relevant meanings or logical forms actually are.[12]

Why, then, should we not take these logical systems to be aimed at describing the deep features of ordinary discourse? The problem, for Carnap, is that ordinary discourse *has no deep features* to describe. Like his teacher Frege, Carnap was struck by the *messiness* of ordinary language (see, e.g., Carnap 1963b, pp. 933–944; 1958, §§1, 3; 1956a, §§2–4; 1950b, chp. 1; 1942, §§3, 38; 1936, §4; 1934a, §§74–81; 1932). For instance, he emphasized the ubiquity of vagueness in natural languages, which he attributed to our tendency to clarify our terms only insofar as our immediate purposes require. Tacit linguistic conventions thus leave a great deal undecided, and individual speakers clarify the meanings of their expressions in different and incompatible ways (Carnap 1990, p. 428; 1928b, §174). What's more, according to Carnap, we perform these piecemeal specifications in light of our context-specific interests. This leaves even individual speakers with expressions whose meanings, such as they are, seem arbitrary to them on reflection (1928b, §173). And of course Carnap's worries about natural language did not stop there. He thought that ordinary language suffers from a variety of insidious sorts of ambiguity (Carnap 1958, §3a; 1942, §38; 1932, pp. 73–74; 1928b, §30). He doubted our ability to disentangle truth-evaluable contents from logically irrelevant emotions and mental representations (Carnap 1928a, §8). He bemoaned the presence in natural languages of grammatical but meaningless sentences (Carnap 1932, p. 68; 1928a, §7). And so on. Given all of this messiness, Carnap thought, English expressions generally lack determinate meanings for logical systems to describe or model.

But suppose this messiness, for whatever reason, were no obstacle to finding the meanings or logical forms of expressions of ordinary or scientific discourse. Carnap *still* would have resisted taking logical systems to be attempts to describe or model them, because of what Richard Jeffrey (1994) called Carnap's *voluntarism*. For Carnap, a conceptual scheme or a language is a tool, and it must be evaluated by how well it serves our purposes. Even apart from all its messiness, ordinary language was developed in response to many problems that are no longer our own. Indeed, Carnap thought that ordinary language is shot through with superstition and confusion. But, thankfully, we do not need to accept this inheritance as destiny. In general, on Carnap's view, "the basic forms of human life are within human control" (Carus 2008, p.

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[12] Of course, we do not usually expect there to be one uniquely correct *model* of a phenomenon, since models abstract away from some features and emphasize others in order to serve particular purposes, and different models may better serve different purposes. For more on this perspective, see Shapiro (2014, pp. 43–44; 1991, chp. 1).

21). Wherever we find that the tools currently at our disposal let us down for this or that purpose, the sensible thing to do is to modify them or develop better ones. And all of this goes for the language of science as well as ordinary language. We should not forget, after all, that the set-theoretic antinomies arose *within* expert mathematical practice. Thus, when Russell suggested in his *Principles of Mathematics* that paradox "springs directly from common sense," it was as much the common sense of *mathematicians* as anyone else that was at fault (Russell 1903, §105). Who, in the wake of such conceptual train wrecks, would want to model *existing* mathematical practice? Existing languages are worthy of study, to be sure, since there are no doubt some tasks that they are performing well. Moreover, the cost of any transition to a new language, in any particular context, should not be dismissed when we are considering a change. But for Carnap, at least, historical practice has no authority over us. So even if there were such a thing as the logic embedded in ordinary or scientific discourse, he would refuse to grant this logic any special status.

And this brings us to Carnap's notion of *explication*.[13] The notion makes its first explicit appearance in 'The Two Concepts of Probability' (1945), where Carnap describes "the problem of probability" as one of constructing, from the raw materials provided by our existing (vague, imprecise) ideas about probability, a notion that can provide the basis for a useful theory. A problem of this kind, he says, is a problem of *explication*. Later, in *Logical Foundations of Probability*, he gives the following account of such problems:

> The task of *explication* consists in transforming a given more or less inexact concept into an exact one, or, rather, in replacing the first by the second. We call the given concept (or the term used for it) the *explicandum*, and the exact concept proposed to take the place of the first (or the term proposed for it) the *explicatum*. The explicandum may belong to everyday language or to a previous stage in the development of scientific language. The explicatum must be given by explicit rules for its use, for example, by a definition which incorporates it into a well-constructed system of scientific either logicomathematical or empirical concepts. (Carnap 1950b, p. 3)

The task is not one of simply analyzing the explicandum, of attempting to uncover some meaning or conceptual content that is supposedly already there. The idea is to *replace* an imprecise concept with a precise one. This means that an attempt at explication will have actually failed if it produces a supposed explicatum with the same meaning as the explicandum. But it also means that there is no uniquely correct explicatum for any given explicandum. Rather, a proposed explicatum can only be more or less satisfactory, which is to say more or less useful (Carnap 1956a, p. 8; 1950b, p. 4).

So far explication looks like quite a *local* affair: the replacement, for certain purposes, of an imprecise or otherwise unsatisfactory expression or concept by one that is more precise and more useful. But Carnap's notion of explication is actually more expansive than this. First, we have so far supposed that an explication must target

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[13] The notion of explication has actually received a great deal of attention in the recent literature. See, e.g., Brun (2020), Dutilh Novaes (2020), Pinder (2020), Dutilh Novaes and Reck (2017), Wagner (2012).

some single concept or expression for replacement. In fact, however, as Brun (2020, pp. 933–934) rightly emphasizes, explication can also involve more extensive conceptual and linguistic structures. Second, while our discussion so far might suggest a role for explication as a useful but not tremendously important methodological tool, to be deployed by the scientific philosopher from time to time as the need arises, Carnap had bigger plans for explication. Indeed, he saw explication as something of a *program* for scientific philosophy, involving the development and evaluation of potential languages and language-fragments for the purposes of scientific inquiry. For Carnap, this represented a vision of the core task of scientific philosophy. It offered the scientific philosopher an important and distinctive role, toiling hand-in-hand with the working physicist or the working biologist in the development of her science (cf. Carnap 1934b, p. 19).[14]

At this point, we should take a closer look at what a particular explication involves. The explicatum, we've seen, must be given a *precise* meaning. But what standard of precision does Carnap have in mind? A rather demanding one, it turns out. He says that the explicatum "must be given by explicit rules for its use," and that these rules must be in "an *exact* form, so as to introduce the explicatum into a well-connected system of scientific concepts" (Carnap 1950b, pp. 3, 7) (emphasis in original). At the time of *Logical Syntax*, Carnap famously demanded that these rules be specifically *syntactic* rules. By the time of ESO, however, he expected an explication to be given in the form of a semantical system (see, e.g., Carnap 1947, 1942). A semantical system is a formal language constituted by (i) formation rules and (ii) semantic rules. The formation rules for a system **S** provide a recursive definition of 'sentence in **S**' in the usual way. The semantic rules, in addition to providing a recursive definition of 'true in **S**', determine a two-place relation of *deductive logical consequence* over the sentences of **S**, so that $\phi \vDash_{\mathbf{S}} \psi$ just in case the truth of ψ follows from the truth of ϕ by the semantical rules of **S** alone. Carnap might gloss this idea by saying that $\phi \vDash_{\mathbf{S}} \psi$ just in case ψ follows from ϕ *with (logical) necessity*. They also determine a confirmation function c that takes any two sentences e, h of **S** to a real number $0 \leq i \leq 1$ such that e confirms h to degree $c(e, h) = i$. We might think of this as a three-place relation of *inductive* logical consequence

$$\phi \left\Vert \frac{i}{\mathbf{S}} \psi, \right.$$

holding between ϕ, ψ, and i just in case ϕ confirms ψ to degree i. The idea here would be that ψ follows from ϕ not with (logical) necessity but *with (logical) probability* i. In fact, we can easily subsume the deductive logical consequence relation under the inductive logical consequence relation, by letting $i = 1$. Thus, instead of

$$\phi \vDash_{\mathbf{S}} \psi,$$

we have

$$\phi \left\Vert \frac{1}{\mathbf{S}} \psi. \right.$$

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[14] On the centrality of explication to Carnap's philosophy, see generally Carus (2007).

Of course, all I've done here is a bit of relabeling. The point is to see that, for Carnap, the deductive entailment relation and the confirmation function are each part of the *logical structure* of the semantical system. Indeed, this is how Carnap thinks of *logic* at the time of ESO (e.g., Carnap 1946, p. 592). Logic, on this view, is relative to a semantical system, and the logic of a system is a matter of the inferential connections among sentences settled by the meanings of the expressions of that system. And this is to say that it is a matter of the inferential connections settled by the *semantic rules* of the system, since these rules give the expressions whatever meaning they have.

I said that, at the time of ESO, Carnap "expected" explications to be given in formal semantical systems. This was intended to be noncommittal with respect to whether he *required* them to be given in formal systems. Certainly, in his own work on semantics and probability, Carnap gave explications (of 'meaning', 'analytic', 'confirms', and so on) in semantical systems (e.g., Carnap 1950b, 1947). Moreover, Carnap's favorite examples of explications from the history of science and philosophy were given in formal systems. In *Meaning and Necessity*, for instance, Carnap lists three models of explication: (i) Frege's and Russell's explication of the ordinary word 'one' as the class of all unit-classes, (ii) Frege's and Russell's various analyses of definite descriptions; and (iii) Tarski's semantical account of truth. "[E]ach of these explications," Carnap tells us, "consists in laying down rules for the use of corresponding expressions in language systems to be constructed" (Carnap 1947, p. 8). But none of this proves that, at the time of ESO, Carnap *required* explications to be given in formal systems, that this requirement was something baked into his notion of explication at the time.

That view, while popular, is controversial. And reasonably so, I think, since there is textual evidence cutting both ways.[15] Ultimately, my sense is that, at the time of ESO, Carnap probably did require that explications be given in formal semantical systems, or at least that they be given in such a form that they could straightforwardly be formalized in a semantical system. But any defense of that claim would be tedious and inconclusive. Fortunately, though, I don't think I need a knock-down argument on this point for the purposes of this paper. I have already argued against the view that frameworks are (fragments of) natural languages by identifying several puzzles facing this view. I have provided some initial support for the conclusion that frameworks are semantical systems by pointing out that Carnap's express aim in ESO was to defend his work in semantics, in particular his acceptance of semantical systems with variables ranging over abstracta. In this section, I have attempted to show why it would make sense for Carnap to be concerned with semantical systems in ESO: By that time,

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[15] Perhaps the strongest evidence that Carnap did *not* require explications to be given in semantical systems comes from Carnap's response to P.F. Strawson in the 1963 Schilpp volume (Carnap 1963b), in which he suggests that, although "[t]he use of symbolic logic and of a constructed language system with explicit syntactical and semantical rules is the most elaborate and most efficient method" for developing explications, "[t]he only essential requirement is that the explicatum be more precise than the explicandum" (p. 936). This leaves no doubt that, by the time he was drafting this reply, Carnap allowed explications to be given in an "improved version of natural language" (p. 934). But it's not obvious what this reveals about his understanding of explication at the time of ESO, since his views may have evolved over the intervening years. At the very least, the Strawson reply sits poorly with a number of Carnap's remarks about explication from the time of ESO, for instance his insistence in *The Logical Foundations of Probability* (1950b) that an explicatum must be given by "explicit rules for its use" (p. 3), and that these rules must be in an "*exact* form" (p. 7). As I said, the evidence is equivocal.

explication was at the very center of his philosophical program, and explication, in his own work, invariably meant the construction of semantical systems as possible languages for science. In the next section, I will continue the argument by showing that once we see frameworks as semantical systems, the puzzles raised by Eklund's interpretation disappear.

5 Semantical systems and the I/E distinction

Recall the difficulties that we found with Eklund's claim that a framework is a natural language. First, we found that this claim fit poorly with a number of features of Carnap's discussion in ESO. In particular, it was hard to square with (i) Carnap's frequent references to *constructing* and *establishing* frameworks; (ii) his insistence that a crucial step in the formation of a framework is the introduction of a certain kind of *variable*; and (iii) his explicit focus on the *specialized* languages of science and scientific philosophy. Second, we saw that Eklund's reading implausibly makes pragmatic-external questions into a species of internal question. And third, we saw that while Carnap frequently claims in ESO that various sentences, construed as internal to this or that framework, are *analytic*, he denied that the notion of analyticity is ever properly applied to sentences of natural languages. All of this would be puzzling if Carnap intended frameworks to be ordinary natural languages (or slight variations thereof).

Once we accept that frameworks are not natural languages but semantical systems, the puzzles disappear. If frameworks are semantical systems constructed as possible languages for science and scientific philosophy, then we should *expect* them to be specialized. Likewise, there is nothing strange about mentioning variables in the context of a semantical system, since semantical systems are *formal* languages. And, of course, it is unsurprising that Carnap would claim that various sentences are analytic in this or that framework, since it is precisely in the context of a semantical system that Carnap takes the notion of analyticity to apply.

How does the I/E distinction look once we understand frameworks as semantical systems? Here's a first pass.

(FP) An internal question for a framework **S** is the question whether ϕ, for some sentence ϕ of **S**, where ϕ is understood to have the meaning assigned to it by the semantical rules of **S**, and thus to be confirmed and disconfirmed in the ways that **S** indicates. An external question is simply a question that is not an internal question. It is the question whether ϕ, where ϕ is understood in such a way that the question is not taken to be subject to the discipline of any framework **S**.

While this seems to be on the right track, it faces a serious objection. Recall the bit of evidence that I adduced on Eklund's behalf in §2: Carnap gives *examples* of internal questions in ESO, and those examples look for all the world like sentences of ordinary English. This poses a problem for (FP). One possible response would be to give up the idea that frameworks are semantical systems in favor of Eklund's view that they are natural languages. Given the problems with Eklund's view, this seems unattractive. I

want to discuss two alternative responses that would allow us to continue to think of frameworks as semantical systems.

The first is based on the observation that, because of the familiarity and accessibility of natural languages, Carnap *often* used sentences of natural languages as examples in his work on semantics, even though, strictly speaking, his claims concerned only formal systems.[16] And he explicitly acknowledged that this was what he was doing. In his *Introduction to Semantics* (1942), for example, after stating that he would be concerned solely with formal semantical systems, Carnap warns the reader:

> There will occasionally also occur examples referring to semantical or syntactical features of historical languages, say English or French, apparently belonging to descriptive semantics or syntax. But these examples are in fact meant as referring to semantical or syntactical systems which either are actually constructed or could be constructed in close connection with those languages. (Carnap 1942, p. 14)

In short, even when Carnap seems to be talking about English, he is not talking about English. He is talking about a formal semantical system that reflects certain aspects of English usage. Carnap offers the following illustration of the sort of thing he has in mind:

> Suppose that we make the statement, "The sentences 'Napoleon was born in Corsica' and 'Napoleon was not born in Corsica' are logically exclusive (incompatible) in English." This is meant as based upon a system E of semantical rules, especially a rule for 'not', constructed in consideration of the English language. The system E is tacitly or explicitly presupposed in this statement; it might be that a rule for 'not' has really been given previously, or it might be that it has not but easily could be given. In any case, concepts of logical analysis like 'logically exclusive', 'logically equivalent', etc., can only be applied on the basis of a system of rules. (Carnap 1942, p. 14)

It seems quite plausible that this is what is happening in the natural language examples that we find in ESO.

This gives us our first possible response to the objection:

(R1) Carnap is using English sentences as "examples" of internal statements because he can expect his audience to speak English, and so he can expect his audience to quickly latch on to whatever features of the sentence are relevant for his purposes. But these "examples" are ultimately just stand-ins for sentences in an appropriate semantical system.

This may seem like an odd stylistic or rhetorical strategy for Carnap to have adopted. But, as the passages from *Introduction to Semantics* show, there is simply no doubting that he did, in fact, adopt it in his previous work in semantics. The only question is whether he maintained that policy in ESO. I think that there is a reasonable case to be made that he did.

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[16] Actually, Carnap was using sentences of natural languages for didactic purposes as very rough "translations" of formal sentences as far back as the *Aufbau* (see, e.g., §98).

Notice that (R1) does not require abandoning or modifying (FP). It keeps the standard for internal questions strict—only questions posed in semantical systems qualify—while taking Carnap to be speaking loosely when he offers examples apparently couched in ordinary English. Our second response takes the reverse tack:

(R2) Carnap is speaking literally when he says that certain questions posed in English are internal questions. Internal questions extend beyond questions actually posed in formal semantical systems to include questions posed in English that can be straightforwardly "translated" into a particular semantical system.[17]

We should not take this notion of translatability to ultimately depend on the meaning of ϕ *in English*. Given his concerns about the messiness of natural languages, Carnap tended to look to *speaker meaning* in these sorts of contexts. (Think, for instance, of the way Carnap asks what a certain kind of philosopher could possibly intend when she asks "Do numbers exist?") So a speaker's question whether ϕ will be straightforwardly translatable into a semantical system—and thus, on this account of I/E, an internal question—just if she is prepared to identify the circumstances under which ϕ would be true and those under which it would be false, what she would accept as relevant evidence, and so on. For this is what must be settled in order to state semantical rules for ϕ in an appropriate semantical system.

Responses (R1) and (R2) produce similar predictions about how Carnap should be expected to treat natural language examples. If we accept (R1), then we should expect Carnap to use an English question as an "example" of an internal question only when it is obvious what sort of semantical system he is presupposing. But this will only be the case where it is obvious how to translate that question into a semantical system, which is just when (R2) tells us to expect such an example. Moreover, these are precisely the kinds of natural language examples ("examples") of internal questions that we actually find in ESO. So (R1) and (R2) seem equally adequate on this score.

But consider how external questions should be understood. If we accept (R1), then every question posed in a natural language is, strictly speaking, an external question. If the question purports to concern some matter of fact, then it is a factual-external question. This has the result of making, say,

(1) Is there a white piece of paper on my desk?

a factual-external question, even when understood in its workaday sense, so that it is easily settled by observation. Since Carnap thinks that external questions are cognitively meaningless, this would commit him to the meaninglessness of (1). To be sure, (R1) allows that Carnap could use (1) as an "example" of an internal question. But, speaking strictly and literally, (1) would be cognitively meaningless.

While this result might look like a clear reductio, I actually think that there is something to be said for it. Frege—who was, of course, Carnap's teacher—explicitly claimed that ordinary language sentences are too unruly to have a sense or a truth value (Frege 2013, §§56–67).[18] Similar, if somewhat less forceful, suggestions are

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[17] Since, at various points in his career, Carnap took the acceptability (meaningfulness, intelligibility, etc.) of ϕ to depend on its translatability into a favored language, (R2) does not strike me as an ad hoc move. See, e.g., Carnap (1934a, §81) ("*Translatability into the formal mode of speech constitutes the touchstone for all philosophical sentences*...").

[18] For an illuminating discussion of Frege's views on this point, see Weiner (2010).

scattered throughout Carnap's work. In 'Quine on Analyticity', for instance, he writes that natural language sentences "have no clearly defined meaning" (Carnap 1990, p. 427). In the Schilpp volume, he says that it is "not quite possible to use...ordinary language with a perfectly fixed interpretation" (Carnap 1963a, p. 930). Ultimately, though, even if we suppose that Carnap held that natural language sentences lack first-class meanings, it's clear that he did not want the I/E distinction to lump (1) in with what he saw as the pseudoquestions of metaphysics. All things considered, then, we should adopt (R2), which allows us to acknowledge (1) as an internal question.

This means rejecting (FP) in favor of:

(I/E) An internal question is a question that can be straightforwardly translated as the question whether ϕ, where ϕ is a sentence of some framework **S**, and ϕ is understood to have the meaning assigned to it by the semantical rules of **S**. An external question is a question that is not an internal question.

According to (I/E), then, an external question is a question that *can't* be straightforwardly translated into a semantical system. And this just means that an external question is the question whether ϕ, for some English sentence ϕ, where we are not prepared to acknowledge standards for "testing, accepting, or rejecting" ϕ (Carnap 1950a, p. 23). This is the right result. The suggestion also has the nice feature that it manages to count all normative questions, the perfectly ordinary and the characteristically philosophical alike, as external questions, since, on Carnap's view, to understand ϕ as normative is to understand it in such a way that nothing *could* count as confirming or disconfirming it. (This is a feature and not a bug because Carnap clearly considered all normative questions to be external questions. Semantical systems, after all, were explicitly designed to deal exclusively with "cognitive" claims.)

If (I/E) is correct, then external questions are not, as Eklund suggests, questions posed in no language at all. They are, at least in the usual case, questions asked in ordinary natural languages. I take this to be another nice feature of the view, since Eklund's suggestion renders external questions *obviously* nonsensical, which makes it hard to believe that Carnap really thought that so many philosophers took them seriously. Allowing external questions to be posed in ordinary language, given Carnap's views on ordinary language, makes it much more plausible that Carnap genuinely believed that his critics had been beguiled by them.

This interpretation also provides a more sensible treatment of pragmatic-external questions. On Eklund's reading, recall, internal questions are just questions posed in English. Factual-external questions are questions posed in no language at all. Pragmatic-external questions, he says, are questions about which language we should speak. But, as we've seen, there is no reason, on Eklund's view, for such questions to be posed in anything other than English. And this makes pragmatic-external questions a species of internal question. This problem does not arise on our interpretation. If frameworks are formal semantical systems suited for scientific inquiry, and external questions are questions that are not taken to be subject to the discipline of a formal semantical system, then pragmatic-external questions can be posed in ordinary natural languages, and this makes them external in precisely the same sense that factual-external questions are external. On this reading, pragmatic-external questions are questions posed in ordinary language about which formal semantical system we

should adopt for scientific inquiry, either in general or for some particular research program.

Finally, it's worth noting that our interpretation, unlike Eklund's, takes the I/E distinction to be bound up with the A/S distinction. Eklund suggests that the I/E distinction requires only "that there are different possible English-like languages" such that some (syntactically individuated) sentence ϕ comes out true in some and false in others (Eklund 2009, p. 135). If frameworks are formal semantical systems, however, then frameworks involve fully explicit meaning rules, and such rules produce analytic truths. If, for instance, the numbers framework includes

(6) $\forall n\,(0 \neq Sn)$

as what Carnap called a "rule of truth," then this sentence will be true in virtue of the semantic rules of the framework, which is to say that it will be analytic. Other semantic rules will likewise bring other analytic truths in their wake. Since the I/E distinction can't be drawn without frameworks, and frameworks can't be constructed without creating analytic truths, the I/E distinction, on our interpretation, is indeed tied to the A/S distinction. This, too, I take to be an advantage of our interpretation. For remember that the connection between I/E and A/S was not a point of contention in the Quine-Carnap debate. Carnap *agreed* with Quine that I/E was tied up with A/S (e.g., Carnap 1950a, p. 32 fn.2). While it's always possible that Carnap somehow misunderstood his own views, surely, all else being equal, we should prefer an interpretation that avoids this result.

Before we turn to questions of ontology, I want to briefly address another possible objection to my account.[19] It rests on the observation that questions can't actually be explicitly formulated in Carnap's semantical systems, which are built to handle just assertoric discourse, so that a well formed sentence of a semantical system will always be something that is true or false. How, then, the objection runs, are we supposed to understand the proposal that an *internal question* is a question posed in a semantical system? Now, it is certainly an interesting wrinkle that questions can't be explicitly posed in semantical systems. In response, I want first to point out that (I/E) does not actually say that an internal question is a question *posed* in a semantical system. Setting translational issues regarding natural language sentences aside, it says that an internal question is the question whether ϕ, where ϕ is a sentence of some framework **S**, and ϕ is understood to have the meaning assigned to it by the semantic rules of **S**. Clearly (I/E) *expects* ϕ to be declarative.[20] More broadly, though, I take Carnap to be thinking along the following lines. Let ϕ be some sentence in a semantical system **S**. And suppose that we're fluent in **S**. Then we can take up ϕ as a matter for consideration. We can weigh the evidence regarding ϕ, or even go out and investigate regarding ϕ, where what counts as relevant evidence, and what sorts of investigations might reasonably be thought to produce relevant evidence, are determined by the semantic rules of **S**. In doing all this, I think that we would be addressing ourselves to the

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[19] Thanks to an anonymous reviewer for raising this issue.

[20] To be sure, I have occasionally spoken in this section of questions being *posed in* a given framework. But this was only a convenient shorthand.

internal question whether ϕ, in Carnap's sense. This is how, on Carnap's view, we can take up internal questions in **S** even if questions can't be explicitly formulated in **S**.[21]

6 Ontology

It remains to say something about the role that Carnapian frameworks, understood as formal semantical systems, play in Carnap's arguments on ontological matters. As we've seen, ESO is Carnap's attempt to rebut the charge leveled by fellow empiricists that his acceptance of abstracta is inconsistent with empiricism. His plan is to acknowledge that he accepts abstracta but insist that this is consistent with empiricism. Empiricism is generally understood as the claim that there is no synthetic a priori knowledge, so that all of our substantive knowledge about the world comes from experience. Indeed, this is how Carnap understood empiricism for much of his career (see, e.g., Carnap 1945, pp. 526–27; 1930, p. 143; 1928b, §§106–107), and this is generally how it was understood by the critics to whom he was responding in ESO. So let's start with this understanding. (We will eventually come to Carnap's mature understanding of empiricism, which emerged after his adoption of the principle of tolerance.) How, then, does Carnap's defense go?

The first step is to simply walk through what exactly, on Carnap's view, *is* involved in accepting abstract objects, and to show that no claim to synthetic a priori knowledge is required. Here we find that frameworks make an appearance, since, for Carnap, to accept abstract objects is just to accept a framework for scientific inquiry whose variables range over abstracta. Carnap, for instance, accepts the numbers framework, in which the variables range over the natural numbers. This framework allows its users to ask and answer a variety of questions. For instance, they can ask whether

(7) $\exists n\ N(n),$

where this might be loosely translated into English as the question: Are there numbers? Or perhaps: Do numbers exist? And Carnap tells us that the semantic rules of the numbers framework make the answer rather trivial. For (7) follows directly from

(8) $N(0),$

which is analytic in that framework. Since (8) is analytic, and (7) follows directly from (8), (7) is analytic as well. This, then, is the sense in which Carnap accepts numbers: he accepts a linguistic framework in which (7) is analytic, and (7) is plausibly translated into English as "There are numbers."[22] To accept the natural numbers, by Carnap's lights, is just to accept a certain set of rules for the use of language. Since this need

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[21] It's perhaps worth noting that even Eklund, with the resources of natural languages to hand, sometimes characterizes internal questions in terms of the truth or falsity of declarative sentences (see, e.g., Eklund 2009, p. 134).

[22] Of course, this translation into English can only be a kind of rough approximation, given that English is messy and the numbers framework is precise. The basic idea is just that (7) plays a role in the numbers framework that is sufficiently analogous to the role that "There are numbers" plays in English to make it reasonable to think of (7) as one plausible way of spelling out and making more precise the meaning, such as it is, of "There are numbers."

not involve any claim to a priori insight into the numerical realm, he reasons, it is perfectly consistent with empiricism.

This is not to suggest that Carnap succeeds in making perfectly clear in ESO what he takes to be involved in accepting the numbers framework. Recall that a linguistic framework is constituted, *inter alia*, by a set of semantic rules. One of the semantic rules of the numbers framework will be the following *rule of values* for the numeric variables:

> *Rule of values*: Values of the variables 'n_1', 'n_2', ... are natural numbers.

This looks like an appeal to natural numbers in the *metalanguage* in which Carnap states the constitutive rules of the numbers framework. The question is what we are supposed to make of this, and Carnap simply does not address this question in ESO. There are, however, some hints in later work about the shape of his preferred response. In 'Meaning Postulates' (1952, p. 67), for example, Carnap emphasizes that we do not need to invoke rules of designation or rules of values for a semantical system in order to determine the truth of sentences that are analytic in that system. This suggests that, in such cases, rules of designation and rules of values are superfluous, perhaps of some pedagogical or heuristic value but not essential to the system. Indeed, in 'The Methodological Character of Theoretical Concepts' (1956b), he explicitly holds that his remarks about variables ranging over the natural numbers "should not be taken literally but merely as a didactic help by attaching familiar labels to certain kinds of entities or, to say it in a still more cautious way, to certain kinds of expressions" (p. 46).

How precisely these comments should be understood is a substantial question that falls outside the scope of this paper. What is clear, however, is that the reason that Carnap takes his acceptance of

(7) $\exists n\, N(n)$

in the numbers framework to be consistent with empiricism is that (7) is *analytic* in that framework. Carnap's guiding intuition with respect to what counts as analytic—where this is distinguished from the various explicit criteria and definitions he provided throughout his career—is that analytic statements *say nothing about the world* (e.g., Quine and Carnap 1990, p. 310).[23] Accordingly, their truth *demands* nothing of the world. Thus, Carnap's acceptance of (7) in the numbers framework must not be understood, he insists, as resting on any kind of a priori ontological insight that there are numbers *out there*, existing *in the world*. It rests only on his acceptance of a certain language. So it is perfectly consistent with empiricism. And, of course, the same goes for his acceptance of properties, propositions, and other relevant abstracta.

This concludes the first stage of Carnap's defense. He has walked us through his acceptance of various abstracta, and he has said why he thinks it involves nothing repugnant to empiricism. The second stage involves pressing his critics to articulate their concerns. Carnap's critics were demanding that he provide evidence that numbers exist *before* accepting the numbers framework. These critics would presumably have

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[23] See also Carnap (1934a, p. 41): "[A]n analytic sentence is absolutely true whatever the empirical facts may be. Hence, it does not state anything about facts...*Synthetic statements are the genuine statements about reality*."

acknowledged that numbers exist *in the numbers framework*. What they wanted to know was whether numbers *really exist*, where this was supposed to be a question that the semantic rules of the numbers framework could not answer. Here, Carnap's response is, of course, to point out that these critics are asking a factual-external question. For they have not specified, or even gestured at, a semantical system in which their question could be understood. So Carnap presses his critics: *What exactly do you take your question to mean? What is it that you want to know?* A fully adequate response from the critics would effectively place their question within some framework or other (though presumably not the numbers framework, since the answer is trivial in that framework), rendering it an internal question. Here, again, is Carnap:

> They might try to explain what they mean by saying that it is a question of the ontological status of numbers; the question whether or not numbers have a certain metaphysical characteristic called reality (but a kind of ideal reality, different from the material reality of the thing world) or subsistence or status of "independent entities." Unfortunately, these philosophers have so far not given a formulation of their question in terms of the common scientific language. Therefore our judgement must be that they have not succeeded in giving to the external question and to the possible answers any cognitive content. (Carnap 1950a, p. 25)

What should we make of the reference to "the common scientific language"? It's important to remember that Carnap's critics are fellow *empiricists*, and Carnap effectively equates scientific language with empiricist language. The idea, then, is that Carnap is insisting that his critics clarify their question by placing it within a specifically *empiricist* framework, or, at the very least, to make a start on clarifying their question by framing it in the sorts of terms employed in scientific inquiry. If his critics do not wish to treat their questions as settled by analytic truths, then, for Carnap, they must point to possible observations or experiences that would help to settle the issue, by confirming or disconfirming, at least to some degree, the claim that there are numbers.

The problem, Carnap thinks, is that his critics can't meet this challenge.[24] For he suspects that their doubts are driven by metaphysical intuitions, intuitions that are *themselves* anathema to empiricism. He had good reasons to be suspicious. In a letter to Carnap from 1943, for example, Quine acknowledged that he had not been able to find any basis for his aversion to abstract objects beyond a kind of "inarticulate intellectual dissatisfaction" (Quine and Carnap 1990, pp. 294–95). Later, in 'Steps Toward a Constructive Nominalism', Quine and Goodman wrote that their renunciation of abstract objects was "[f]undamentally...based on a philosophical intuition that cannot be justified by appeal to anything more ultimate" (Goodman and Quine 1947, p. 105).[25] For Carnap, an a priori insight that abstract objects do not exist is no more congenial to empiricism than an a priori insight that they do.[26] Of course, Carnap allowed that his critics were welcome to develop nominalist frameworks. But if they

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[24] This point is emphasized by Alspector-Kelly (2001).

[25] Notably, however, Quine makes no mention of this sort of intuition when he considers how ontological questions are to be settled in 'On What There Is' (1948).

[26] Carnap's vehement rejection of intuition as a source of justification is rightly emphasized by, e.g., Creath (1992, p. 144).

were to do so, this would not show, in a factual-external sense, that numbers do not exist any more than his construction shows, in a factual-external sense, that they do. The key question at that point would simply be the *pragmatic*-external one, the question of which framework is more convenient for scientific inquiry. This completes the second, and final, stage of Carnap's defense.

Now, Eklund thinks that it's important for any interpretation of Carnap's philosophy, and any interpretation of ESO in particular, to explain what he calls Carnap's *deflationism* about ontological questions. And he understands deflationism to be the claim that ontological questions are *shallow*. Unfortunately, I don't really know what 'shallow' is supposed to mean here. One way to flesh the idea out just a bit would be to say that a *deep* question is one that is (i) cognitive, (ii) interesting, (iii) hard to answer, and (iv) important, and that a question is shallow just in case it is not deep.[27] This would make deflationism the view that no ontological question is (i) cognitive, (ii) interesting, (iii) hard to answer, and (iv) important. If this is what Eklund means by deflationism, however, then Carnap was not a deflationist at all. Consider the question whether there are photons or the question whether there are black holes. In the best framework for scientific inquiry, these questions (i.e., suitable translations of them) would presumably be empirical (and, so, cognitive) internal questions, and there is every reason to think that they would be—or would have been, at the appropriate point in the development of science—interesting, hard to answer, and important. Carnap has no reason to deny this. One might try arguing that Carnap takes all internal ontological statements to be analytic. But I don't think this is right. Certainly Carnap never *says* that all internal ontological statements are analytic, and his other philosophical commitments give him no reason to accept it. What Carnap does seem to accept, however, is that all internal ontological statements *regarding abstract objects* are analytic (or contradictory) *in empiricist frameworks*.

This brings us to Carnap's mature understanding of empiricism, developed in the light of his principle of tolerance. Once he had accepted that principle, he no longer understood his commitment to empiricism as the belief that we have no synthetic a priori knowledge. Instead, he understood empiricism as the practical recommendation that we adopt an empiricist framework for science—a framework, that is, that does not contain any non-analytic sentences that can't be confirmed or disconfirmed by possible observations. You might think that this suggests Carnap was a deflationist about ontological questions regarding abstracta in at least the following sense: In his preferred framework for science, no ontological question concerning abstract objects is (i) cognitive, (ii) interesting, (iii) hard to answer, and (iv) important. But I doubt that even this much is true. Certain ontological questions in the best framework for science might be questions about what does or does not follow from the ZFC axioms, for example. By Carnap's lights, the correct answers will be analytic, but the questions may nevertheless be interesting, hard to answer, and important.

But perhaps I've misunderstood what qualifies as a deep question. A deep question, for Eklund, may simply be a question whose answer is a synthetic a priori truth. This would make deflationism the claim that no ontological question has a correct answer

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[27] I include (i) not because I think that it is an intuitively plausible requirement on deep questions but because Eklund clearly takes himself to be dealing with exclusively cognitive questions, so that to show that a question is non-cognitive is to show that it is shallow in his sense.

that is synthetic a priori. If this is what Eklund means by deflationism, and the deflationist claim is itself understood in a factual-external sense, then Carnap again fails to qualify. But we can at least say that Carnap was a deflationist in the following sense: In his preferred framework for science, no ontological question—indeed, no question at all—has a correct answer that is synthetic a priori. Plainly this attenuated sort of deflationism does not flow directly from Carnap's conception of a framework or of the I/E distinction. He allows that one might develop and propose a *non*-empiricist language for science, in which certain ontological questions are supposed to be synthetic a priori. He just insists that he would not understand such a language, and he suspects that it would not prove very useful. Rather, his deflationism, in this sense, is a consequence of his empiricism.

7 Conclusion

Let's take stock. I argued that Carnap's frameworks are formal semantical systems rather than natural languages, and I spelled out the I/E distinction accordingly. Then I explained how Carnap makes use of frameworks and the I/E distinction in ESO to argue that his acceptance of abstracta is consistent with his empiricism. I then considered Eklund's assumption that Carnap was a deflationist about ontological questions, in the sense that he took ontological questions to be *shallow*. I argued that, on two possible readings of 'shallow', this assumption is false. Finally, I suggested that Carnap was a deflationist about ontological questions specifically concerning abstract objects, but only in the following sense: In his preferred framework for science, no ontological question—indeed, no question at all—has a correct answer that is synthetic a priori. This limited sort of ontological deflationism does not follow from Carnap's I/E distinction but from his empiricism. Notice that we have had no need, in the course of developing Carnap's arguments in ESO, to appeal to the sort of ontological pluralism that Eklund attributes to Carnap. This is as it should be, I think, since Carnap was not, in my view, an ontological pluralist in Eklund's sense. I leave the defense of this final point for another day.

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