

LSL in a Nutshell

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1 Introduction

The purpose of this very short paper is a bit ambitious: I aim to provide a quick-and-dirty synopsis of Rudolf Carnap's *The Logical Syntax of Language (LSL)*. I am writing this for two specific audiences: (1) those who do not have any desire to wade through Carnap's famously difficult text, but want to have a general idea of what it is about, and (2) those who would like to read it but are worried they do not have the necessary background in logic and mathematics. It is devoid of the mathematics and complicated logical notation used by Carnap. This should alarm some readers, because clearly the most important aspect of the book is its revolutionary take on the nature of logic, logical frameworks, and philosophical theories *as* logical frameworks. I am, then, not even close to doing this book justice, but I have done the best that I can.

In *LSL*, Carnap constructs two artificial symbolic languages: Language I and Language II, or L1 and L2 - each of which contains both an *object language* and a *metalanguage*. The metalanguage is used to talk about the object language, and Carnap talks about both the object language and the metalanguage using, get this, a *metametalanguage* of sorts. Unlike the metalanguage and the language itself, this "metametalanguage" (which I will from now on call "MML") is not explicitly constructed. However, Carnap also uses the MML in another way: to talk about

L1 and L2 aside from their respective object-languages and metalanguages. Carnap also uses this MML in “Empiricism, Semantics, and Ontology” - an article which ought to be viewed as an extension of the theory presented in *LSL*: it is in “Empiricism, Semantics, and Ontology” that he elaborates on the notion of linguistic frameworks (similar in many ways to L1 and L2) by providing explanations of which questions are external or internal to a framework, and how these questions can and should (or cannot and should not) be answered.

2 *The Logical Syntax of Language and the Language of Convention*

In the foreword of *The Logical Syntax of Language*, Carnap describes the problem he has set out to address, namely, the problem that arises when we strive for the “correct” or “true” logic. To eliminate this problem and the “wearisome controversies which arise as a result of it”¹, he puts forth a rather startling thesis: we can construct a formal language (I will refer to these simply as “languages” from hereon) or several languages, and as long as we have clearly defined the syntax as well as all of the terms in our language, we are free to choose to use that language. We can choose our newly constructed language, or, for that matter, any language, and no justification or proof of its “truth” need be given. There is no question of whether this is the “correct” or “true” language, Carnap points out - only the question of what follows from choosing some particular language or other. The choice between languages is a matter of convention: truth becomes *truth-in-language-L* (in which *L* is some arbitrary language which one has either constructed or accepted). In other words, truth itself becomes conventional.

This thesis, which is both that we are free to adopt whichever language we want and that the choice between languages is a matter of convention, is called *The Principle of Tolerance*,

¹Carnap (1937)

and Carnap extends its application beyond its obvious place in mathematics, to philosophy and science. For Carnap, philosophy simply is the logical syntax of language, and philosophical views should be thought of as different languages or linguistic frameworks. Controversies over which philosophical view is “correct” or “true” are just as wearisome to Carnap as those that arise when we try to figure out which logic is the “true” or “correct” one. Questions over whether a philosophical theory is “correct” are pseudo-questions, for the real philosophical questions, according to Carnap, are questions about the consequences of choosing a specific linguistic framework.

Philosophical “truth”, over which so much controversy has arisen, is conventional, and we are free to choose between languages, as Carnap points out: “*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.”²

To show that this thesis is possible, Carnap proceeds to construct two formal languages, Language I and Language II. Language I (L1) is a simple language, in which only a few basic concepts are contained, but Language II (L2) is a more complex language with more expressive power, in which “all of the sentences both of classical mechanics and classical physics can be formulated”³. Both L1 and L2 contain formation and transformation rules - formation rules being syntactical rules and transformation rules being rules of deduction - which can be formulated in syntactical terms. In order to demonstrate that it is possible to formulate these syntactical terms (the syntax of the language) in terms of the linguistic framework itself, he creates two additional languages. The two new languages reside within each language (that is, are within each L1 and L2): an object-language, containing the terms and the grammar of the respective language, and a metalanguage, which is used to describe the object language and

²Ibid., p. 52

³Ibid, p. xiv

the rules and sentences formed by the terms in the language. These two languages, the object-language and the metalanguage, are both part of the language itself: each language, L1 and L2, has these two additional languages within it.

While constructing the object-language and the metalanguage of L1 and the object-language and metalanguage of L2 - now, bear with me here, because this gets confusing - Carnap uses what I will call a *metametalanguage* (MML), which he implicitly constructs when describing both L1 and L2. Unlike the object languages and metalanguages of L1 and L2, the MML is not explicitly constructed, but his reasons for implicitly constructing it are clear: just as a metalanguage is necessary within a specific linguistic framework for describing the object-language of that framework, one cannot speak about the languages themselves without constructing a language in which to talk about and evaluate them. The choice of whether or not to use this specific MML (or another one) is one of convention. However, as soon as we speak of different languages/linguistic frameworks, and take the principle of tolerance seriously, we have begun using Carnap's MML - that, or we have implicitly created one of our own, and the rules of that language are constructed via the ways in which we evaluate linguistic frameworks. In some sense, we have accepted Carnap's conventionalism by convention.

To better understand how we can accept Carnap's conventionalism just by choosing to use his MML (or one that we have constructed), let's go over this one more time, and then we'll let it rest until later. Linguistic frameworks can be thought of as proposals: we can create a framework by defining clearly the terms of our language and giving the formation and transformation rules (in the way Carnap goes about constructing L1 and L2). As long as we have constructed our language in this way, we've given a proposal of sorts: that is, we've offered a language in which claims about mathematics, science, or philosophy can be made, and the consequences of those claims discovered and evaluated. A linguistic framework is, in effect, a proposal about how we can talk about the world. Using the principle of tolerance, we can establish that the

choice between linguistic frameworks is a pragmatic one: no specific language is the “correct” or “true” language, and so we have only to decide which linguistic framework will prove to be the most useful, fruitful, etc., for our purposes.

From a Carnapian view, even those who don’t make any consciously “conventional” decision regarding the choice of a framework and those who don’t construct their own languages are working within a specific linguistic framework: they have axioms, they have definitions for the terms used in their view, they show what claims come out true or false under their view, and they show which premises lead to which conclusions. Within the language one has chosen, there will, inevitably, be an apparent ontology that comes along for the ride. For example, if one has chosen (by convention or not) a mathematical realist framework, then the framework will contain sentences such as “there exists an n such that n is a number” which will come out true within the framework, and others that will come out false (there will also be those which are undefined).

The question that nearly always arises regarding whatever framework we choose is whether or not the objects spoken of in that language *really* exist independent of the framework. From this question, a lot of ontological controversies ensue: if we are working within some language, are we ontologically committed to whatever is in that language?

3 “Empiricism, Semantics, and Ontology”

Carnap addresses this question in “Empiricism, Semantics, and Ontology” (1950) in response to wary empiricists who were hesitant to incorporate abstract entities into their philosophical theories. The empiricist who wishes to make use of abstract entities, Carnap points out, need not think that he’s “embracing a Platonic ontology”, because the acceptance of a language contain-

ing abstract entities is “perfectly compatible with empiricism and strictly scientific thinking”⁴. In other words, accepting a framework which contains abstract terms (such as numerals, propositions, properties, natural kinds, and the like) does not entail any ontological commitment of any kind.

Though there are obvious differences between *The Logical Syntax of Language* and “Empiricism, Semantics, and Ontology”, the latter can and should be viewed as a natural extension of the former. To show that the empiricist need not worry about ontological commitments with regard to abstract entities, he elaborates on the notion of linguistic frameworks, and introduces a distinction between two kinds of questions we can ask about the existence of these entities.

When we consider whether or not to introduce abstract entities (or, really, any entities!) into a language, we have to construct a “system of new ways of speaking” about them.⁵ Questions about the existence of these entities can be divided into two distinct categories: internal questions and external questions. Questions concerning whether specific entities or systems of entities *really* exist are external to the linguistic framework in question, and are, in most cases, nothing more than pseudo-questions. Questions regarding the existence of specific entities within the linguistic framework are internal questions, as they are internal to the framework in question. Providing answers to these internal questions can be a matter of simply seeing which entities are present in our framework, finding empirical evidence for their existence, or offering an a priori defense of their existence - like formulating new expressions within the framework to account for their existence, or showing that their existence can be expressed within the framework.

Controversy of internal questions is, Carnap claims, both controversy over which language we should adopt and controversy over how we should structure our language. When faced with such a quandary, we must “make the choice whether or not to accept and use the forms

⁴Carnap (1950), p. 206

⁵Ibid., p. 206

of expression in the framework in question”⁶. Accepting the framework in question carries with it the acceptance of the forms of expression within that framework; if the framework in question contained sentences of the sort “there is an x such that $x = y$ ”, then, if the sentence was true in that framework, questioning whether whatever entity was the “ y ” existed would be a question of whether the sentence containing that entity came out true within the framework. The answer to the question would be an analytic statement. Such acceptance doesn't carry with it any metaphysical or ontological weight, and, in the spirit of *LSL*, Carnap says that if we don't like this, we are free to construct our own language. On this note, let's return to external questions.

There are two types of external questions (recall that these are questions which are asked independently of some framework). First, there are those which Carnap calls pseudo-questions, and, second, there are those which have to do with choosing one language over another. Pseudo-questions are those which are, in effect, meaningless, like questions such as “do numbers really exist?” - without a linguistic framework in which numbers are part of the object-language, questions like this just don't make any sense. The other type of external question (regarding which framework to accept) is not by any means a pseudo-question, and it is external only because it can't be formulated or answered within a specific language containing only an object-language and a metalanguage. It can, however, be both formulated and answered in the MML from *LSL*.

Indeed, Carnap uses an MML throughout his discussion of abstract entities, linguistic frameworks, and internal and external questions in “Empiricism, Semantics, and Ontology”. Without this, such a discussion would not be possible. Formulating the question of which linguistic framework we ought to choose within the MML is simple, and answering it is, in many ways, just as simple as answering questions which are external to a linguistic framework.

Remember that, in *LSL*, Carnap outlined the principle of tolerance, claiming that we should

⁶Ibid., p. 207

be tolerant of different linguistic frameworks, that we are free to choose the language best suited to our purposes. Keeping this in mind, and employing his MML (i.e., working in a framework outside the linguistic frameworks), we can answer an external question such as “which framework should I choose?” by pointing to the framework which we think will be most useful for our purposes.

These sorts of external questions quickly become questions internal to our MML framework, answered by seeing which entities we need for our purposes and choosing a language that contains the entities in its object-language, using empirical criteria to choose between frameworks, or, if we cannot find a suitable framework, by constructing our own. The choice, Carnap says, is a pragmatic one - we can use any linguistic framework that proves useful in our respective investigation.

4 Concluding Remarks

So, there you have it: *The Logical Syntax of Language* in a nutshell - and, of course, not just *LSL*, but “Empiricism, Semantics, and Ontology” as well! In fact, reflecting on Carnap’s philosophical project as a whole, and not just “Empiricism, Semantics, and Ontology” (which most philosophers seem to do these days), we see that “Empiricism, Semantics, and Ontology” makes far more sense in light of *LSL*. One might even go so far as to say that it is understandable only as an extension of *LSL*: whereas *LSL* is focused primarily on developing linguistic frameworks, “Empiricism, Semantics, and Ontology” is focused entirely on analyzing these frameworks.

5 Bibliography

Carnap, Rudolf (1937). *The Logical Syntax of Language*.

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