

ANALYTICITY AND LANGUAGE ENGINEERING IN CARNAP'S LOGICAL SYNTAX

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ABSTRACT

One of the most important events in early analytic philosophy was the analyticity debate between Carnap and Quine. By analyzing this debate, much can be learnt about Carnap's logical empiricism at the time of Logical Syntax. This distinction is in many ways central to Carnap's philosophy, so his defense of it should be illuminating. I will critically discuss two interpretations of Carnap's defense of analyticity, and conclude that while each interpretation does capture a significant portion of Carnap's major philosophical project, neither interpretation on its own can be considered as a complete and satisfactory picture of Carnap's logical empiricism. In their place, I propose an entirely new way to see Carnap's logical empiricism which maintains the positive points of the previous views but avoids their pitfalls, and which also contains a response to Quine's challenges..

Keywords: Rudolf Carnap, Willard Van Orman Quine, analyticity, logical syntax, logical empiricism

A recent trend in Carnap scholarship sees him as offering a view of philosophy as language engineering. This view began to emerge most clearly in the work of Richard Creath (see his (1990), for example), and is now becoming a prominent piece of mainstream Carnap thought. Take, for example, Michael Friedman's introduction to the *Cambridge Companion to Carnap*, where Carnap's project is described as "language engineering for empirical science with only practical consequences in mind" (Friedman 2007, 15). This style of interpretation takes seriously Carnap's reflections on the task of philosophy, such as these remarks from his *Intellectual Autobiography*:

Only later ... did I recognize the infinite variety of possible language forms. On the one hand, I became aware of the problems connected with the finding of language forms suitable for given purposes; on the other hand, I gained the insight that one cannot speak of "the correct language form," because various forms have different advantages in

different respects. The latter insight led me to the principle of tolerance. Thus, in time, I came to recognize that our task is one of *planning* forms of languages. (Carnap 1963a, 68)

Carnap came to think of philosophy as language planning, though I (and others) have taken to using the more general term “language engineering” which encompasses both the planning and analysis of language forms.

What I am going to offer here belongs to this family of views, and serves to further clarify just what exactly is meant by “language engineering” (a term that remains woefully underspecified in the literature). In the explication that follows I wish to draw attention to a fundamental passage, found in §78 of *The Logical Syntax of Language* (as well as other *Syntax*-era works), which has heretofore been neglected by Carnap scholars but provides the key to understanding philosophy as language engineering. With this in hand, I will then turn to a discussion of analyticity and the Quine/Carnap debate, arguing that Carnap’s replies are consistent with this picture of philosophy as language engineering. I then consider the relation between my interpretation and others (specifically, the work of Thomas Ricketts, Warren Goldfarb, and Alan Richardson), and argue that, while these interpretations do get a significant portion of Carnap’s philosophical project correct, they each contain significant interpretive errors. One advantage of my particular version of language engineering is that it can diagnose and avoid these mistakes.

1. Language engineering

The origin of Carnap’s unique vision of philosophy lies in what might be called the “language relativity” of philosophy. This is the idea that philosophical sentences are about language, not the world; that they are therefore essentially language relative; that this relativity has been obscured by the use of the “material mode” of speech; and that this is the reason why philosophical debates are hopeless and futile. Language relativity is an idea that stems directly from Wittgenstein’s *Tractatus Logico-Philosophicus*. Wittgenstein held that the problems of philosophy stem from misunderstanding the logic of our language, and that the real task of philosophy is to perform a “critique of language” – to elucidate, clarify and eliminate philosophical problems.¹ Of course, in Carnap’s hands the “close connection” between philosophy and syntax (1934a, §73) took on a different tone. Carnap did not accept the idea that philosophy is an elucidatory activity – he took Wittgenstein’s view to be “very unsatisfactory,” insisting instead that philosophy is properly thought of as the logical analysis of language (see the tail end of §73 for the divergences between Wittgenstein and Carnap).

¹ In the introduction to the *Tractatus*, Wittgenstein writes: “The book deals with the problems of philosophy, and shows, I believe, that the reason why these problems are posed is that the logic of our language is misunderstood. The whole sense of the book might be summed up in the following words: what can be said at all can be said clearly, and what we cannot talk about we must pass over in silence.” In 4.003 and 4.0031 he identifies philosophy as a critique of language that aims to show that traditional philosophical problems are nonsense, and in 4.112 he describes philosophy as an activity that elucidates and clarifies propositions.

Though he replaced Wittgenstein's idea of philosophy as activity with the idea of philosophy as analysis, Carnap maintained the essential point that philosophy was about language, not the world. This attitude was the driving force behind the development of *Logical Syntax*. In his *Intellectual Autobiography*, Carnap writes:

Since in our view the issue in philosophical problems concerned the language, not the world, these problems should be formulated, not in the object language, but in the meta-language. Therefore it seemed to me that the development of a suitable metalanguage would essentially contribute toward greater clarity in the formulation of philosophical problems and greater fruitfulness in their discussions. (Carnap 1963a, 55)

Having come to accept that philosophy is about language, that its sentences are sentences about sentences, Carnap, driven by the scientific standards of the Vienna Circle, recognized the need for a formal and exact discipline within which one could rigorously deal with the problems of philosophy. This was the chief goal of *Logical Syntax*:

The important thing is to develop an exact method for the construction of these sentences about sentences. The purpose of the present work is to give a systematic exposition of such a method, namely, of the method of 'logical syntax.' ... The aim of logical syntax is to provide a system of concepts, a language, by the help of which the results of logical analysis will be exactly formulable. (Carnap 1934a, xiii)

The logical tools developed in and around *Logical Syntax* were designed to give philosophers a toolbox of exact methods that they could use to deal with philosophical problems.

Because philosophical sentences are language relative, they are incomplete and ambiguous when presented without a language. This is obscured by the material mode of speech (see 1934a, §§64, 74-80), and leads to a mistaken sense of absolutism in philosophy. Carnap writes,

Further, the use of the material mode of speech gives rise to obscurity by employing absolute concepts in place of the syntactical concepts which are relative to language. With regard to every sentence of syntax, and consequently every philosophical sentence that it is desired to interpret as syntactical,² the language or kind of language to which it is to be referred must be stated. If the language of reference is not given, the sentence is incomplete and ambiguous. (1934a, §78)

In other words, philosophical sentences appear to assert absolute facts, and to have definite meanings, when in reality they are open to multiple interpretations. In order to give meaning to a philosophical sentence, a language must be specified.

² Carnap is here leaving open the possibility that someone may not accept that all philosophical sentences are syntactical (see 1934d, 6-7). Carnap himself agrees that all philosophical sentences are syntactical: "translatability into the formal mode of speech constitutes the touchstone for all philosophical sentences" (1934a, §81).

Carnap, in his (1934c, 15) gives two main ways that philosophical sentences can be completed: as true/false assertions about a given language (which he labels type “A”) or as proposals to investigate the consequences of adopting a new language (type “B”).³ In §78 of *Logical Syntax*, Carnap presents the same division in a more descriptive manner: eight different ways of completing philosophical sentences are given: the first six belong to type “A” and the last two belong to type “B.” Elsewhere, Carnap puts the position as such: “a question of the first kind [A] is a theoretical one; it asks, what is the actual state of affairs; and the answer is either true or false. The second question [B] is a practical one; it asks, how shall we proceed; and the answer is not an assertion but a proposal or decision” (1936/7, 3). This division, when combined with the language relativity of philosophy, constitutes the foundation of my version of language engineering. It is only with this idea, this view of philosophy, this division of distinct philosophical tasks, that philosophy can properly be seen as language engineering, as the project of language planning that Carnap speaks of in (1963a, 68). No other interpretation of Carnap has explicitly recognized the importance of these passages.

This idea – the language relativity of philosophy and the subsequent division into two different philosophical tasks – allows for philosophy to become language engineering. In order to read a philosophical sentence as an assertion, the philosopher must design a language for that sentence to be about and then analyze the language to determine the truth value of that sentence. And in order to read such a sentence as a suggestion for a change in language, that new language must be rigorously defined so that the consequences of adopting it can be made clear. This way of doing things aims to bring clarity, conciseness and fruitfulness to the treatment of philosophical sentences.

Carnap’s major philosophical efforts fit naturally into the framework of philosophy as language engineering. Carnap was concerned with the logical analysis of scientific language, a project that he thinks should take the place of traditional, philosophical epistemology – this is the main point of his 1935 lecture, “From Epistemology to the Logic of Science” (1935b). In that lecture he claims that “as the proper task of philosophical work there remains then the logical analysis of knowledge, i.e. of scientific sentences, theories and methods, that is, *the logic of science*” (1935b, 37). The analysis of scientific knowledge is equated with the logical analysis of the sentences, theories and methods of science. In another lecture of the same year, he says that “the function of logical analysis is to analyse all knowledge, all assertions of science and of everyday life, in order to make clear the sense of each such assertion and the connections between them” (1935a, 9-10). This project, which I label Epistemology (keeping in mind that it is not traditional epistemology, but is instead designed as its replacement), consists in making clear the logical features of the language of science. Epistemology is one of two tasks for the philosopher as language engineer, and its sentences fit naturally under heading “A” (as assertions

3 The fact that some philosophical statements can be considered as true or false seems to be missed by Richardson, who claims that “alternative philosophical positions do not divide into the true and the false, but into the more well-suited for this purpose and the more well-suited for that purpose” (2004, 70-1). This is certainly true of those statements intended as proposals, but it neglects those statements intended as assertions.

about a given language).

This task is complicated by the fact that the language of science is complex and vague, its logical structure imprecise. In order to produce results, this analysis must proceed via the use of an artificial, formal language intended as a model of the actual language of science. A particularly cogent statement of the modeling methodology is given in the concluding section of *Logical Syntax*:

The language of science is not given to us in a syntactically established form; whoever desires to investigate it must accordingly take into consideration the language which is used in practice in the special sciences, and only lay down rules on the basis of this. In principle, certainly, a proposed new syntactical formulation of any particular point of the language of science is a convention, i.e. a matter of free choice. But such a convention can only be useful and productive in practice if it has regard to the available empirical findings of scientific investigation. (1934a, §86)

This is an essentially two-step process: first a model is stipulated (a free choice), then it is compared to the actual language of science. This last step determines whether or not the model is a good fit, and provides the answers to the epistemological questions.

In “Testability and Meaning”, Carnap also makes it clear that his syntactical stipulations are intended to function as models of the language of science. Referring to the observable/non-observable distinction, he remarks that “there is no sharp line between observable and non-observable predicates ... for the sake of simplicity we will here draw a sharp distinction ... By thus drawing an arbitrary line between observable and non-observable predicates in a field of continuous degrees of observability we partly determine in advance the possible answers to questions such as whether or not a certain predicate is observable by a given person” (1936/7, 455). Carnap not only acknowledges that a strict distinction is an idealization, he also recognizes that such an idealization is bound to produce artifacts in the model, to “determine in advance” answers to certain questions. The same holds true for his discussion of the analytic/synthetic distinction. Also, in (1934a, §2), he compares the method of logical syntax to that of the physicist, who “relates his laws to the simplest of constructed forms; to a thin straight lever, to a simple pendulum, to punctiform masses, etc. Then, with the help of the laws relating to these constructed forms, he is later in a position to analyze into suitable elements the complicated behaviour of real bodies, and thus to control them” (1934a, §2). The same method is used by Epistemology.

Of course, Carnap is not just famous for his logical work on the language of science, he is also famous (perhaps more so) for his anti-metaphysical arguments. The arguments that he gives at the time of *Logical Syntax* fit perfectly as another branch of language engineering.⁴ While Epistemological assertions fall under

⁴ Carnap's earlier anti-metaphysical arguments, such as those given against Heidegger, don't work in the same way as the *Syntax*-era arguments do. Carnap's anti-metaphysical strategy changed dramatically after his interactions with Wittgenstein's *Tractatus*.

heading “A,” true/false assertions about the structure of some language or other, the anti-metaphysical assertions are best seen as part of heading “B,” proposals for the investigation of the consequences of adopting some novel language. In order to see why this is the case, consider Quine’s parable about Ixmann, the logical positivist (Quine 1963, 401). In reply to the argument that science presupposes metaphysics, Ixmann responds by imagining a race of Martian scientists who speak a Martian language that is perfectly adequate for scientific needs, but in which the metaphysical issues cannot even be expressed. The possibility of this situation shows that science does not carry with it the alleged metaphysical baggage. Quine “applaud[s] this answer, and think[s] it embodies the most telling component of Carnap’s own anti-metaphysical representations”. (1963, 401)

In order to “cure” the scientists of their metaphysical ailments, Ixmann creates a hypothetical (“Martian”) language of science with certain nice features. First, the language is capable of expressing everything that is presently considered science; and second, the troublesome metaphysical question is not even expressible in it. With such a language in hand, the scientist can make the following claim: she *could* speak a language in which all of her science is expressible and the pesky metaphysical question is not expressible at all. In such a language, science can proceed exactly as it does now, and the metaphysician cannot even state his question, let alone demand that the scientist answer it. The hypothetical language is used simply as a reference; it is not a claim about the actual language of science itself. Carnap is able to use the hypothetical language as a system of reference to cure scientifically minded individuals of metaphysics.⁵ Because of its ultimate goal, I’ve taken to calling this project Therapy; it is the other major project of the philosopher as language engineer.

An example of Therapy occurs in Carnap’s discussion of “universal words” in §§76-77 of *Logical Syntax*. These are defined as follows:

A word is called a universal word if it expresses a property (or relation) which belongs analytically to all the objects of a given genus, any two objects being assigned to the same genus if their designations belong to the same syntactical genus. (1934a, §76)

For example, ‘thing’ is a universal word, as “*x* is a thing” is true whenever a thing-designation (i.e. a name) is substituted for *x*. Carnap suggests that universal words “very easily lead to pseudo-problems; they appear to designate kinds of objects, and thus make it natural to ask questions concerning the nature of objects of these kinds” (1934a, §80). A sentence like “the Moon is a thing” looks very much like the sentence “the Moon is a satellite of Earth”, but only the latter sentence expresses an actual fact about the Moon. The first sentence expresses a fact about *the language* used

5 Carnap compares the method of philosophy to that of geography, which also uses hypothetical constructions (lines of latitude and longitude) to draw conclusions: “The complicated configurations of mountain chains, rivers, frontiers, and the like are most easily represented and investigated by the help of geographical co-ordinates – or, in other words, by constructed lines not given in nature. In the same way, the syntactical property of a particular word-language, such as English, or of particular classes of word-languages, or of a particular sub-language of a word-language, is best represented and investigated by comparison with a constructed language which serves as a system of reference” (1934a, §2).

to talk about the Moon, namely that 'Moon' is a thing-designation. Unfortunately, this difference is obscured by what Carnap calls the material mode of speech,⁶ and this obfuscation leads to a metaphysical debate over the nature of "things." Carnap argues that this debate can be neutralized by an exercise in hypothetical language planning: "every language can be transformed in such a way that universal words no longer occur in it, and this without any sacrifice either of expressiveness or conciseness" (§76). In other words, Carnap thinks that it is possible to construct a hypothetical language which is perfectly adequate for science but does not allow for the expression of the metaphysical issue. This is clearly an instance of Ixmann's project of Therapy.

To sum up: my version of philosophy as language engineering is founded upon two main ideas: the language relativity of philosophical sentences and the ensuing need to specify a language for them to be about, and the two different ways that one can do this. Philosophical sentences can be intended as assertions, in which case they are true or false depending on the structure of the language they are taken to be about (or the language that is used to model them, if the original language is too complicated for analysis); the project of Epistemology takes place following this method. Philosophical sentences can also be intended as proposals for adopting a new language, in which case they are not true or false; we look at them only to discover the consequences of adopting such a language. Therapy follows this method. This picture is necessary to understanding the nature of analyticity in Carnap's philosophy.

2. Analyticity in language engineering

Before turning to a discussion of the concept of analyticity in my version of language engineering, it will be helpful to briefly review the criticisms that Quine makes against analyticity, and the replies Carnap offers in favour of it. The ensuing debate is notoriously obscure, as it is not at all obvious that either side truly understands the position of the other. Carnap does not seem bothered at all by the apparently devastating criticisms that Quine thinks he is offering, and the replies that Carnap does manage to give to Quine appear to be completely unsatisfactory (at least, they appeared as such to Quine). And Quine, for his part, never seems to recognize the possibility that it is he who is missing the point, not Carnap. Part of my aim here is to defend this latter possibility, though I fully acknowledge that Carnap does not do a very good job of raising this issue himself. After this summary I will suggest that the replies Carnap gives are precisely the sort of replies that he should give on behalf of analyticity, given his views on the goals and methods of philosophy.

Quine first considers attempts to define analyticity in terms of some other notion, such as definition, synonymy, substitution *salva veritate*, necessity, and semantical

⁶ The material mode is a "transposed mode of speech," which is "one in which, in order to assert something about an object *a*, something corresponding is asserted about an object *b* which stands in a certain relation to the object *a*" (1934a, §80). To assert something about the name 'Moon', namely that it is a thing-designation, something else is asserted about the Moon itself, namely that it is a thing.

rules. All such attempts end up right where they started: in order to make sense of analyticity, Quine argues, you must presuppose an understanding of analyticity.⁷ A proposed epistemic distinction – analytic sentences are confirmed by every possible experience – is rejected because, as a consequence of Quine’s holism, any statement can be held true come what may.⁸ The only sensible option remaining is a definition of analytic-in- L for an explicitly defined formal language L . Such a definition is possible, Quine admits, but it would be of no help in understanding the actual notion of analyticity:

Appeal to hypothetical languages of an artificially simple kind could conceivably be useful in clarifying analyticity, if the mental or behavioral or cultural factors relevant to analyticity – whatever they may be – were somehow sketched into the simplified model. But a model which takes analyticity merely as an irreducible character is unlikely to throw light on the problem of explicating analyticity. (1951, 36)

Without a way to connect ‘analytic-for- L ’ with some feature of scientific discourse, Carnap’s artificially simple languages shed no light on the troublesome concept of analyticity itself. The analytic/synthetic distinction is nonsensical at worst and useless at best; and without it, Carnap’s philosophical position cannot be taken seriously.

Carnap’s replies to these criticisms are puzzling. Indeed, he seems to agree with Quine’s criticisms, but he nevertheless continues to focus on analyticity in formal languages. Carnap certainly understands Quine’s position (see, for example, his (1963b, 918-9)), and he even accepts that proposed definitions of analyticity like “true in virtue of meaning” and “empirically empty” are “not only inexact, but also non-formal, and thus [are] not applicable in syntax” (1934a, §50). But instead of taking the inability to satisfactorily define analyticity in an ordinary language as a critical argument against the existence of a precise analytic/synthetic distinction, Carnap takes it as a reason for why he should only concern himself with analyticity in formal languages.⁹

This appears to entirely neglect Quine’s point about the ineffectiveness of artificial definitions of analyticity in the absence of some empirical criterion. It gets worse: Carnap maintains that while such a criterion would certainly be useful in specifying analyticity, it is surely not necessary to specify analyticity (1963b, 919). Either Carnap is completely confused about the situation or something quite different is going on in his philosophical project. I, of course, suggest the latter: understanding language engineering can help us understand why Carnap gives (and why he should give) the replies that he did.

⁷ Quine memorably characterizes these arguments as “not flatly circular,” but having “the form, figuratively speaking, of a closed curve in space” (1951, 31).

⁸ This is somewhat ironic, given Carnap’s own profession of holism in (1934a, §82).

⁹ He insists “that the concept of analyticity has an exact definition only in the case of a language system, namely a system of semantical rules, not in the case of an ordinary language, because in the latter the words have no clearly defined meaning” (1952, 427). Elsewhere he declares that “my proposals for the explication of analyticity have always been given for a formalized (codified, constructed) language L , i.e., a language for which explicit semantical rules are specified”. (1963b, 918)

Here is how analyticity works within my version of language engineering. The formal definition of analyticity, given in §§50-52 of (1934a), is one of the tools of general syntax that a language engineer can use in either of the two major philosophical projects. Considered in itself it is simply a formal definition with no philosophical commitment, but it gets used in different ways depending on the project at hand. In the project of Therapy, where artificial languages are proposed in order to show that metaphysical problems are really pseudo-problems, analyticity is essential to establish this conclusion. In order to show that a word is universal,¹⁰ and hence eliminable, it must be stipulated that all sentences which predicate an object with that word (e.g. “x is a thing”) are analytic in the hypothetical language. If this is so, they can then be replaced by a syntactical separation (e.g. a syntactical differentiation between thing-designations and other designations) which makes certain questions (like “what is a thing?”) inexpressible. Also, there must be a strict distinction between the analytic and the synthetic to ensure that no scientific content is lost in the new language: the desired scientific content is rendered as synthetic in the hypothetical language.

With this understanding of Therapy in hand, it is clear why Quine’s criticisms of analyticity are mistaken. Quine does not recognize the true role that analytic statements play – they exist only at the level of the freely chosen formal language, not in the original language of science itself, and their purpose is only to show various possible ways that the logical structure of science *could* be formalized. Carnap is not out to capture any feature of the ordinary language of science, the analytic statements of the artificial language serve only to achieve the desired therapeutic moral. The philosophical Therapist has the liberty, by the principle of tolerance, to freely choose a formal definition of analyticity, unconstrained by “mental or behavioral or cultural factors” present in actual scientific practice. This is why Carnap is unconcerned with the vagueness and ambiguity that adheres to the common understanding of analyticity: he is free to stipulate an entirely new concept whose focus is not descriptive accuracy, but Therapeutic effectiveness. Quine, as mentioned in the discussion of “Ixmann,” applauds this anti-metaphysical strategy. He does not seem to recognize that, at least when it comes to Therapy, this is the extent of the project: there is no further problem posed by the concept of analyticity.

In Epistemology things are quite a bit different. Here the distinction is used to capture a fact about the logic and methodology of science. This difference in goal necessitates a difference in how one must reply to Quine’s criticisms. Carnap begins by noting that analyticity is a murky notion, one that is pre-systematically “vague and ambiguous, and basically incomprehensible” (Carnap 1963b, 919). Despite this fact, it is also a notion that is essential to scientific methodology. When Carnap looks at the methodology of empirical science, he sees a fundamental difference in the role that logic and mathematics play when compared to the other statements of the factual sciences: he refers to it as “indispensable for methodological discussions” (1963b, 922).¹¹ Since Epistemology is the logic of science, it must capture this

¹⁰ See (1934a, §76)

¹¹ See (Hillier, 2009) for more on this.

feature of scientific methodology.

The language of science is incredibly complex: Carnap contrasts “a language system, i.e. a language organized according to explicitly formulated rules” with “a historically given natural language,” and then says that “the language of science lies between the two” (1952, 432). Languages like these are so complex that, “the statement of their formal rules of formation and transformation would be so complicated that it would hardly be feasible in practice” (1934a, §2, cf. also §62).¹² So in order to say anything at all about the analytic/synthetic distinction, Carnap must (as a matter of practicality) offer a formal model of the language of science. His formal definition is intended to be

an explication of an inexact concept already in current use. ... The defined concept embraces what philosophers have meant, intuitively, but not exactly, when they speak of ‘analytic sentences’ or, more specifically, of ‘sentences whose truth depends on their meanings alone and is thus independent of the contingency of facts’. (1952, 430)

In other words, the formal definition is intended to model the actual phenomena in the ordinary language of science just as a model of an infinitely deep ocean is intended to model the actual, complicated ocean. Instead of infinitely deep oceans and thin, straight levers, Carnap’s idealizations are things like a rigid analytic/synthetic distinction, well-defined bivalent concepts, and a determinate notion of logical consequence.¹³ Making such formal idealizations is a necessary feature of the Epistemological project of analyzing the logic of science.

In order for the formal model to accurately capture the actual distinction (modeling is, after all, a matter of degree), Carnap needs to find some aspect of analyticity that is formal enough to be captured by such an exact model. The characterizations put forward by Quine (with one notable exception)¹⁴ do indeed capture aspects of analyticity, but they are “not only inexact, but also non-formal, and thus [are] not applicable in syntax” (1934a, §50). A feature of analyticity that is formal enough to be captured exactly must be found, and Carnap thinks he has found such a feature in what he calls the “formally expressible distinguishing peculiarity” of logical expressions:

12 A particularly nice statement of the situation: “the word-language is too irregular and too complicated to be actually comprehended in a system of rules” (§81).

13 Recall the discussion of the observable/non-observable distinction in “Testability and Meaning” mentioned above.

14 Quine’s characterization of analytic truths as those “held true come what may” misses the mark completely. From the outset (the 1935 “Von Erkenntnistheorie Zur Wissenschaftslogik” address), Carnap sought to separate the psychological and the logical aspects of epistemology, focusing solely on the logical character of scientific statements (see also 1934c, 123). Psychological aspects of these statements, such as their being held true come what may, are entirely irrelevant to their logico-syntactic status as analytic: Carnap agrees “that ‘any statement can be held true come what may’. But the concept of an analytic statement which I take as an explicandum is not adequately characterized as ‘held true come what may.’” (1963, 921) In Carnap’s view, “it is not a feature of the explicandum ‘analyticity’ that these statements are sacrosanct, that they never should not can never be revoked in the revision of science” (1952, 431). It also follows that any attempt to see Carnap as engaged in a project of explicating “true, justified belief,” as is suggested by Creath (1990, 3ff), is also fundamentally misguided, as Carnap’s Epistemology does not concern itself with belief (that is a matter for empirical psychology).

If we reflect that all the connections between logico-mathematical terms are independent of extra-linguistic factors, such as, for instance, empirical observations, and that they must be solely and completely determined by the transformation rules of the language, we find the formally expressible distinguishing peculiarity of logical symbols and expressions to consist in the fact that each sentence constructed solely from them is determinate. (1934a, §50)

This characterization – being completely determined by the transformation rules of the language – is offered as a formally expressible aspect of the very same notion of analyticity that “true in virtue of meaning” is intended to capture. The difference between “true in virtue of meaning” and the determinateness criterion is that the latter can be modeled exactly while the former cannot. Carnap proceeds to do just that immediately after this quotation, offering a four-part definition of the syntactical term “logical expression.” The determinateness criterion is easier to model than the “true in virtue of meaning” criterion, but they are both aspects of the same concept of analyticity.

This is why Carnap is so insistent that Quine specify whether he is criticizing the explicandum concept “analytic” (in the language of science) or the explicatum (in the formal language).¹⁵ If it's the former, then Carnap agrees with Quine that there is no sufficiently exact concept of analyticity – this is due to the complex and semi-formal character of the language of science. To say that such characterizations are incoherent is to make a point that Carnap agrees with: “naturally, such an elucidation can be rendered only in terms that are themselves not yet exact” (1952, 430). It is for precisely this reason that Carnap is interested in formal models of the language of science. The only way a meaningful debate could occur is if Quine challenged Carnap's formal definitions, but none of his criticisms seem to be doing so.¹⁶ And even if he did offer criticisms of these definitions, Carnap would simply see these as new proposals for models of the informal and inexact distinction, not as arguments against the intelligibility of any such distinction. Carnap's replies to Quine's criticisms are exactly the sort of replies he should give on behalf of the project of Epistemology.

This exposes just how fundamental the disagreement over analyticity is between Quine and Carnap. Both of them see the incoherence in the ordinary notions of analyticity, but they react to it in different ways. Quine sees it as a sign that there is no such distinction, and that all attempts to give a definition of analyticity are doomed to failure. We should, he urges, “espouse a more thorough pragmatism”

¹⁵ Carnap laments that, “it is not clear whether [Quine] is asking about the elucidation explicandum ‘analytic’ or about an explicatum”. (1952, 430)

¹⁶ At least, none of the criticisms from “Two Dogmas” surveyed here are aimed at Carnap's formal definitions. In §VII of his (1963), Quine does criticize Carnap's attempt to syntactically specify logico-mathematical truth. As a consequence of Gödel's incompleteness theorem, the notion of logico-mathematical truth for a language with enough mathematics can only be specified in a stronger meta-language. This stronger meta-language could include the vocabulary of physics, economics, etc., leading to a syntactical definition of economic truth, for example. Thus, Quine argues, “no special trait of logic and mathematics has been singled out after all” (1963, 400). But the “special trait” of logic and mathematics that Carnap is trying to single out is not the syntactic specificity of logico-mathematical truth, rather it is their role as a formal auxiliary, facilitating inferences between contentful sentences of science. Physics and economics do *not* play this role, so the fact that they can be syntactically specified in a physical or economical meta-language does not diminish the special status of logic and mathematics.

(1951, 46). Carnap, on the other hand, takes the incoherent definitions as motivation to continue to seek such a formal definition in order to exactly specify this essential distinction. What drives Carnap in this endeavour, and what Quine rejects (due to his “web of belief” picture of scientific knowledge), is the perceived difference in methodological role of mathematical versus contentful statements in science. That is, the idea that mathematics and logic operate as an auxiliary calculus that allows for inferences between contentful statements.¹⁷ To convince Carnap that there is no acceptable notion of analyticity, Quine would have to demonstrate that Carnap’s belief in the different methodological character of mathematical sentences is mistaken.

3. Relations to other interpretations

Several other philosophers have offered interpretations of Carnap that focus on philosophy as language planning or language engineering. Two notable examples are the work of Thomas Ricketts and Warren Goldfarb, and that of Alan Richardson. While these interpretations do capture significant portions of Carnap’s philosophical project, neither interpretation on its own can be taken as a satisfactory and complete picture of Carnap’s logical empiricism. One of the advantages of my particular version of language engineering (motivated by the division given in 1934a, §78) is that it can incorporate the positive aspects of these interpretations while at the same time both diagnosing and avoiding their problems.

3.1 Thomas Ricketts and Warren Goldfarb

First, consider the view of Carnap presented by Thomas Ricketts and Warren Goldfarb, which first appeared in their (1992) and is also found in Ricketts’ (1994) and (2003), and Goldfarb’s (1997). Ricketts describes Carnap’s project as the coordination of a formal calculus with a used language, which he views as an amorphous collection of speech dispositions.¹⁸ The formal calculus is “imposed like a grid on an investigator’s used language” (Ricketts, 2003, 263). This imposition gives the used language a logical structure, and in doing so it fixes the role of the analytic sentences as external devices added to enable sound inferences between empirical truths:

By the stipulation of a language, a logical structure is imposed on descriptions of empirical reality. This structure enables users of the language soundly to infer empirical truths from empirical truths. The analytic sentences, those whose truth is fixed by the stipulation of a language, are contentless auxiliaries for such inferences. (Ricketts, 1994, 179)

The logical structure of a calculus is imposed “*solely for the purpose of Wissenschaftslogik* [the logic of science], of recasting epistemic evaluations as

¹⁷ For more on this, see (Hillier, 2009).

¹⁸ See Ricketts 2003, 260ff, and 274.

the syntactic (later semantic) descriptions of sentences – and so of investigators linguistic behavior – that this projection makes available” (Ricketts, 2003, 264). And the purpose for this imposition is to use the syntactic descriptions to eliminate philosophical pseudo-problems – this is the goal of Ricketts’ version of *Wissenschaftslogik*.¹⁹

Philosophical debates are, on this view, debates over the logical structure of a language, in particular over its evidential rules. It is precisely because of this that these debates are pseudo-problems, as there is no fact of the matter about the logical structure of a language:

Speech habits do not even in principle fix a unique calculus instantiated by the language. If I imagine the speech habits of investigators in agreement with a given calculus, I imagine speech habits that also agree with any number of variant calculi. (Ricketts, 2003, 262)

Any debate over the evidential rules of a language is pointless, as a language doesn’t uniquely instantiate a calculus. The resolution of a philosophical debate consists in showing that it is a mere verbal squabble.²⁰ Any number of variant calculi can be imposed on a language, hence there is nothing truly at issue in the debate.

Ricketts’ *Wissenschaftslogik* is a therapeutic exercise designed to show the emptiness of philosophical (as opposed to scientific) debates. It does so by showing the possibility of aligning many different calculi with the ordinary language of science. This project is therefore best seen as a piece of what I have called Therapy, where a freely chosen formal calculus is imposed on the ordinary language or practice of science in order to draw anti-metaphysical morals. This project relies on the underdetermination of calculus by language to construct one of a number of possible variant calculi, typically one wherein metaphysical issues cannot even be raised. It is this project that Ricketts and Goldfarb correctly describe. They also correctly diagnose Quine’s misunderstandings about Carnap’s project, and the confusing debate that ensues: “This unsatisfying standoff is, to a considerable extent, the product of Carnap’s and Quine’s different understandings both of logical notation and *of the application of logic to the language of science*” (2003, 258). The heart of the debate, the central feature of Carnap’s position that Quine neglects, is the relationship between Carnap’s artificial languages and the language of science. Unfortunately, however, I do not think Ricketts and Goldfarb have provided a complete understanding of the philosophical project of *Logical Syntax*.

While they have captured a significant portion of Carnap’s philosophical project (the project of Therapy), there are many passages in *Logical Syntax* itself as well as other syntax-period works like “The Task of The Logic of Science” (1934b)

¹⁹ The imposition of a grid is useful in “distinguishing genuine issues from pseudo-problems. ... Formalization of [any] debate is to enable us to understand exactly what sort of difference exists between investigators” (Ricketts 1994, 193). See also Carnap’s (1934a, §2).

²⁰ This is in accord with Carnap’s statements that metaphysical controversies appeared to him “sterile and useless ... inconclusive... at cross purposes ... [with] hardly any chance of mutual understanding, let alone of agreement”. (1963a, 44-5)

and “Formal and Factual Science” (1934c) which seem to exhibit a project at odds with that described by Ricketts and Goldfarb. That is, they do not seem to fit the mold of imposing a conventionally chosen artificial language (from among the many possible artificial languages) onto an amorphous language in order to extract syntactic and epistemic results that emerge only from the coordination of such languages.

Consider, for example, the following list of questions identified in “The Task of the Logic of Science”:

Is the law of the constancy of the velocity of light in relativity theory a stipulation or a factual sentence? Does general relativity theory contain a logical contradiction? ... Is such and such a theory, t_2 , compatible or incompatible with a theory t_1 ? If compatible, is t_2 contained in the sense of t_1 , or does the content of t_2 go beyond that of t_1 ? In the latter case, what part of the content of t_2 goes beyond t_1 ? Is the concept c_n reducible to the concepts c_1, \dots, c_m ? Do the concepts c_1 , and c_2 (which differ in their definitions) have the same meaning? ... Do the two sentences p_1 and p_2 (which differ in their wordings) have the same sense or not? Does p_2 follow from p_1 with logical necessity? Or at least with the necessity of the laws of nature? (1934b, 147)

These questions do not sound like Carnap is imposing a logical structure on the language of science, it sounds like a structure is already there, and that Carnap is out to answer questions like these about it. The language of science is not an amorphous collection of speech dispositions, it appears to have a rich, theoretical structure, and Carnap is interested in this structure. The same feeling emerges in §85 of *Logical Syntax*, where Carnap discusses Einstein’s “Zur Elektrodynamik bewegter Körper”.²¹ The stated intent of this analysis is to demonstrate that

In all scientific discussions, object-questions and questions of the logic of science, i.e. syntactical questions, are bound up with one another. Even in treatises which have not a so-called epistemological problem or problem of foundation as their subject, but are concerned with specialized scientific questions, a considerable, perhaps even a predominant, number of the sentences are syntactical. They speak, for instance, *about* certain definitions, about the sentences of the domain which have been hitherto accepted, about the statement or derivations of an opponent, about the compatibility or incompatibility of different assumptions, and so on. (1934a, §85, 328)²²

Examining a treatise in the sciences should reveal both object sentences (“if a

21 This is an obvious point, but one worth making: Carnap is here looking at Einstein’s *theory*, not his *speech dispositions*.

22 It is worthwhile to recall that the stated purpose of *Logical Syntax* is to “give a systematic exposition of ... an exact method for the construction of these sentences about sentences” (*Syntax*, xiii). One of the goals of *Syntax* is to provide exact reconstructions of such syntactical sentences which, Carnap suggests, are prevalent in mathematical and scientific treatises.

magnet moves, then an electric field results”) and syntactical sentences *about* these object sentences (“Maxwell’s laws lead to asymmetries in their application”), and a quick examination of the initial sentences of Einstein’s treatise does just this. But according to Ricketts and Goldfarb, syntactical sentences of the logic of science are not found *within* science, they are only *imposed on* science. Since Carnap identifies Einstein’s sentences as part of the logic of science, it is implausible to maintain, as they do, that the logic of science proceeds by correlating linguistic practice with artificial languages, as nothing Einstein says is to that effect (and neither are Carnap’s paraphrases).

Another substantial project that does not fit within the Ricketts and Goldfarb interpretation is Carnap’s syntactical treatment of the Unity of Science. This project asks “questions about the syntactic relations between the different languages that form part of the language of unified science” (Carnap 1934b, 56). More specifically, it asks three questions about the relation between the language of physics and that of biology (the same questions hold when comparing physics and psychology, for example). First, can the concepts of biology be incorporated into the language of physics? Second, are biological laws of the same form as the laws of physics? And finally, are biological laws derivable from the laws of physics? Carnap quickly answers “yes” to the first two questions, but has no answer for the third. He claims that “this question cannot be answered given the present state of biological research; numerous experimental investigations are still required before it can be decided” (1934b, 57). The state of biological knowledge at Carnap’s time was insufficient to determine whether or not the laws of biology are derivable from those of physics. In order to solve this syntactical problem, Carnap will have to work closely with the biologists, psychologists, sociologists and other scientists; this is in harmony with Carnap’s belief that “all work in the logic of science, all philosophical work, is bound to be unproductive if it is not done in close cooperation with the special sciences” (1934a, §86).

This project does not fit very well under the Ricketts and Goldfarb view. Carnap is talking about the syntactical structure of the various languages of science: they have concepts and laws, and the laws are related in certain syntactical ways. They are certainly not amorphous collections of speech dispositions. And even if the logical relations of interest to Carnap were the ones he imposes on top of the languages, why would the third question remain open? It seems that one could choose relevant artificial languages so that the biological laws are derivable from the physical laws, but one could also choose an artificial language where this is not the case (just as Ixmann had the freedom to choose a variant language of science for his Martians). It should not be regarded as an open question, and certainly not one that relies on the actual empirical sciences for an answer.²³ But of course this is not what is seen in Carnap: he goes to great lengths to insist that no conclusion can be drawn at the present time.

23 Carnap’s interest in the actual languages of biology and physics also seems to go against Ricketts’ claim that he is “not, of course, interested in describing calculi that conform to the speech habits of actual groups”. (Ricketts 2003, 263)

Finally, recall that, for Ricketts and Goldfarb, Carnap takes the ordinary language of science to be an amorphous collection of speech dispositions with no inherent logical structure. It is for this reason that Carnap is free to impose any number of artificial languages on top of it. But this claim is objectively false: Carnap claims that there *is* a logical structure inherent in the ordinary language of science, it's simply obfuscated by the complicated nature of this language (a hybrid between a formal and a word language). In *Logical Syntax* itself, Carnap talks about the formal part of a language: "syntax is concerned with that part of language which has the attributes of a calculus – that is, it is limited to the formal aspect of language" (1934a, §2). He also states that, "when we say that the objects of logical syntax are languages, the word 'language' is to be understood as the *system of the rules* of speaking, as distinguished from the acts of speaking" (1935a, 41). This mistake, as well as those mentioned above, are symptomatic of a more general error: attempting to fit the entirety of Carnap's philosophical project under the heading of Therapy. By making a distinction between Therapy and Epistemology in such a way as to see *both* as examples of language engineering, my view does not suffer the tension that results if Ricketts' interpretation is thought to be complete.²⁴

3.2 Alan Richardson

A similar problem arises for the work of Alan Richardson, given primarily in his (1997), (1998) and (2004). Richardson focuses on Carnap's project of logical analysis, which is identified as the proper task of philosophy in Carnap's 1935 address "Von Erkenntnistheorie Zur Wissenschaftslogik" ("From Epistemology to the Logic of Science"):

As the proper task of philosophical work there remains then the logical analysis of knowledge, i.e., of scientific sentences, theories, and methods, that is, *the logic of science*. One can of course still use the designation 'epistemology,' only the earlier, ambiguous formulations of questions must be avoided. (1935b, 36-7)

Carnap's logical analysis of scientific sentences, theories and methods is put forth as a purified form of Epistemology, which is why I labeled this branch of language engineering as such.

At the outset, Richardson immediately distances this project from the sort of thing Ricketts and Goldfarb describe: "Carnap's guiding vision is not the move from the utterly inarticulate and nonrational to the logically precise, but the move from an informal framework with implicit and vague logical rules to a formal framework with explicit logical rules". (1997, 161) Instead of moving from an amorphous linguistic practice to a formal calculus, Richardson's Carnap is interested in moving from the "informal framework" of the language of science, with its "implicit and vague logical rules", to a formal framework that makes these rules explicit. Because of this difference, the projects that gave Ricketts and Goldfarb so much trouble fit

²⁴ The tension I mean here refers to the difficulty of envisioning projects like the syntactical treatment of the Unity of Science as a piece of the Therapy methodology.

naturally in this description of Epistemology as the logical analysis of scientific theories. The questions from “Task,” the analysis of Einstein’s theory of relativity, and the discussion of the Unity of Science all aim to make precise what is presently imprecise in the language of science, which agrees with Richardson’s version of Carnap’s Epistemology.

Perhaps the most important task for Epistemology is the explication of the analytic/synthetic distinction, as discussed above. Richardson wisely focuses on this as well, and presents an interpretation of Carnap’s defense of this distinction in his debate with Quine.²⁵ Carnap thinks that there actually is a notion of analyticity in the language of science, so despite an impressive string of failures to define it (as aptly demonstrated by Quine), he continues to seek an acceptable, formal definition. This quest is motivated by a methodological observation: Carnap believes that the analytic/synthetic distinction is “indispensable for methodological discussions” (1963b, 922). He describes the methodological observation as follows:

Science uses synthetic and analytic sentences in the following manner. The factual sciences establish synthetic statements, e.g., singular statements for the description of observable facts or general statements which are introduced as hypotheses and used tentatively. From the statements thus established the scientists try to derive other synthetic statements, in order, for instance, to make predictions concerning the future. The analytic statements served in an auxiliary function for these inferential operations. All of logic including mathematics, considered from the point of view of the total language, is thus no more than an auxiliary calculus for dealing with synthetic statements. (1934c, 127)

Carnap sees logic and mathematics as playing a different role in the sciences than observations and hypotheses do, and because the goal of Epistemology is to make precise the methodological workings of science, it must render this distinction precise.²⁶

Carnap’s methodological interests are critical to Richardson’s interpretation. He claims that these interests stem directly from Carnap’s neo-Kantian heritage:

the project from which Carnap takes his perspective – the generally neo-Kantian and conventionalist project – trains its eyes on methodological issues in the exact sciences as the locus of the most significant lessons for reflection on the nature and scope of knowledge. Moreover, this project connects such methodological issues to questions of logical form. (Richardson, 1998, 225)²⁷

25 Note that Richardson’s explanation of the nature of analyticity is very different from the one I offered above; I return to this point later.

26 The analytic/synthetic distinction “answers long-standing methodological issues within his own philosophy of science regarding the place of mathematics in the system of knowledge” (Richardson 2004, 63-4)

27 Richardson’s (1998) makes an excellent case for a neo-Kantian reading of Carnap’s *Der Logische Aufbau der Welt*, and the concluding chapters suggest that this neo-Kantianism is maintained into *Logical Syntax*. See also Friedman 1999.

As a purely logical neo-Kantian, Carnap seeks to differentiate the analytic from the synthetic in a formal manner, and show the role that analytic sentences play in constituting scientific knowledge in general.²⁸ This neo-Kantian consideration drives Carnap's interest in analyticity and informs his reply to Quine.

Quine's criticisms of analyticity neglect the unique, constitutive role that analytic sentences play in the language of science: "it is not clear that Quine's objections to analyticity touch the methodological role for analytic judgments that motivates Carnap's concern" (Richardson 1997, 161). None of Quine's criticisms challenge the constitutive role of analytic statements; instead they challenge definitions of analyticity like "held true come what may." These criticisms miss the point, according to Richardson:

To say that a particular sentence is 'analytic' is not to say that it gets highest marks on an antecedently understandable question of confirmation; rather, it is to say that the sentence is one of the principles that first present the framework within which *all* questions, including epistemological ones, first make sense. (1998, 223)

Analyticity isn't something that emerges in virtue of a confirmation mechanism, it is rather something that is essential if a confirmation mechanism is to exist *at all*. Indeed, analyticity is a prerequisite for the meaningfulness of *any* epistemological question, including questions about analyticity itself. All Carnap can do is expose the notion of analyticity in the language of science, he cannot defend the notion, nor can he define it on the basis of some antecedent notion.²⁹ Asking him to do so is literally asking the impossible on this neo-Kantian view.

Quine does not properly acknowledge this feature of analyticity in his debates with Carnap. He continues to ask for a factual basis of Carnap's definitions of analyticity, and is continually frustrated by Carnap's lack of a response. The reason that Carnap does not give the desired response is because he cannot! There is no factuality prior to analyticity, so any attempt to explicate analyticity in terms of something like "truth independent of the facts" or "held true come what may" is rendered impossible.³⁰ Under this interpretation, the reason why Carnap's replies to Quine are so puzzling is that the challenge itself is puzzling: no further clarification can be given for the fundamental notion of analyticity; all that can be done is to give a precise, formal explication of it.

As interesting and nuanced as this story is, I fear that it may have placed too much

28 A similar sentiment is found in recent work by Michael Friedman: "Carnap's mature philosophical position therefore provides us with an echo of Kant, in so far as Carnap simply (and rightly) takes it for granted that the kind of empirical knowledge paradigmatically exhibited by modern science is itself only possible in the first place on the basis of a prior formal structuring of our knowledge claims by modern mathematics". (Friedman 2006, 51)

29 The previous quotation from Richardson continues: "For Carnap, there is no deeper level of description to which any definition of analyticity for a language must answer. There is no external, antecedent, language-transcendent epistemological perspective from which the point of the analytic-synthetic distinction can or must be understood. The logical description of a linguistic system is just the deepest level of description available, and the definition of analyticity is part of such a description". (1998, 223)

30 See (Richardson 1998, 224, fn. 11), as well as (Richardson 2004, 76) for statements of the role that analyticity plays in constituting factuality.

neo-Kantianism in *Logical Syntax*. While the replies offered on behalf of Carnap are exactly the sorts of replies expected from someone who holds a transcendental view of the analytic/synthetic distinction, I do not think that they match the *actual* replies given by Carnap in his debates with Quine. Carnap went to great lengths to make all aspects of his philosophy explicit, so we should expect his neo-Kantian commitment to a transcendental analytic/synthetic distinction to appear quite clearly. Alas, no such statement occurs. Even worse, there are statements that seem to contradict the claim that analyticity is not meant to, and cannot, explicate some antecedent, framework independent notion. There is also the troubling remark that “it is possible to reconstruct the language of science in such a manner that it contains only synthetic statements. This need not diminish the content of science”. (1934c, 126) Denying the necessity of the analytic is not something that a neo-Kantian philosopher of science should do.

When dealing with the notion of analyticity, Carnap accepts “truth based on meaning,” “empty,” and “without empirical significance” as terms that “clearly seem to have essentially the same meaning as ‘analytic’” (1963b, 922). These remarks do not appear consistent with a neo-Kantian view of the analytic. Carnap should not equate analyticity with these other definitions, as these other definitions only make sense given a prior notion of analyticity. Even worse is his admission that “a pragmatist concept, based upon an empirical criterion, might serve as an explicandum” for analyticity (1963b, 919). An empirical criterion should not even make sense outside of a definition of analyticity, let alone be able to serve as the basis of one. A neo-Kantian should not say that there is a target explicandum of “analytic,” and he should definitely not say that an empirical criterion could help in finding it. Carnap continues to say that such an empirical criterion would be helpful in specifying analyticity, but surely is not necessary; what he should have said (if he truly was a neo-Kantian) was that it is *impossible* to explicate analyticity in terms of some prior empirical criterion. At the very least, a neo-Kantian Carnap should be expected to say *something* about the methodological, framework-constitutive role of analytic sentences, or that the analytic/synthetic distinction must be in place before “confirmation,” “fact” and “meaning” even make sense. There are no such statements in Carnap’s defense of analyticity.

Clearly something has gone wrong here. I think the mistake lies in Richardson’s use of the neo-Kantian idea that there is no notion of “fact” outside of a linguistic framework. Richardson claims that,

there is no linguistic-framework transcendent notion of “matter of fact” that can be fixed and relative to which logical structure varies freely. On the contrary, the notion of “matter of fact” is given only internal to a linguistic framework and on the basis of the analytic/synthetic distinction for that framework. (2004, 76)

And also that,

the whole notion of ‘matter of fact’ is internal to a logico-linguistic

framework for Carnap. Thus he is not motivated by the desire to show that logic is independent of “the facts,” but rather to show that but for a prior specification of a logical structure the very notion of ‘the facts’ is without sense. (1998, 217)

In defense of these claims, he cites Ricketts’ (1994), in particular his claim that “Carnap, in adopting the principle of tolerance, rejects any such language-transcendent notions” (Ricketts 1994, 180). This is a particularly neo-Kantian sounding idea, so it is perhaps not that surprising that Richardson appeals to it in an explication of Carnap’s neo-Kantian epistemology.

The problem lies in the fact that project of Ricketts’ Carnap works differently than that of Richardson’s. As noted above, Ricketts and Goldfarb describe the project of Therapy, while Richardson describes Epistemology, and in virtue of the distinction Carnap draws in (1934a, §78), these projects are fundamentally different. The former is based on interpreting philosophical sentences as proposals for the construction of a new language form (which cannot be seen as true or false), while the latter interprets them as assertions about an existing language (which can be true or false). Ricketts’ Carnap imposes artificial languages like grids upon the ordinary language of science for the elimination of metaphysical pseudo-problems, while Richardson’s Carnap tries to make precise the currently imprecise logical structure of science. In other words, Ricketts isn’t interested in the notion of analyticity in the *actual* language of science, while Richardson is. For the project of Therapy, the actual notion of analyticity doesn’t matter at all as the language proposed is purely hypothetical; this is why no “language transcendent notion of fact” is relevant to Carnap’s project. For Epistemology, however, the actual notion is most certainly relevant. Richardson’s Carnap cannot claim that there can be no meaningful question asked about analyticity, especially since Carnap himself seems to think there can be. Both Ricketts and the neo-Kantian Carnap agree that there are no relevant facts of the matter, but for very different reasons. It is this similarity that tempts Richardson to “borrow” Ricketts’ response to Quine, but such a response is not valid on behalf of Epistemology. Understanding language engineering in the way that I do allows for the diagnosis and prevention of this error: by recognizing the separation between the two projects, one is no longer tempted to borrow resources from the other, no matter how tempting they may sound. Instead, what is necessary is a defense of analyticity that follows the rules of Epistemology, such as the defense I offered above.³¹

³¹ Such a defense also has the virtue of staying closer to the actual remarks that Carnap makes in response to Quine.

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