

CARNAP'S PRAGMATISM

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One of Carnap's overarching aims was to set philosophy on a firm scientific footing. He relied primarily on two ideas to achieve his ideal of a scientific philosophy: verificationism, according to which only empirically testable or logically determinate sentences are meaningful, and the Principle of Tolerance, which held that we are free to choose whichever system of empirical knowledge is most expedient. The logical empiricism embodied in these views is widely believed to have been decisively refuted by a variety of objections.

My dissertation seeks to clarify the content and aims of Carnap's tolerance and verificationism, and to defend the resulting view against some of the most influential objections to logical empiricism. I argue that both tolerance and verificationism are manifestations of Carnap's fundamentally pragmatic conception of scientific language; for Carnap, precise formulations of scientific theory—"languages for science"—are to be viewed as instruments for the derivation of intersubjective observational knowledge.

Verificationism, on my interpretation, is the decision to narrow one's options for a language for science to those languages in which every sentence is either empirically testable or logically determinate. This decision is motivated by Carnap's

pragmatism: any sentence that is neither empirically testable nor logically determinate makes no contribution to the aim with which the pragmatist uses scientific language.

I use this pragmatist account of verificationism to respond to two objections. The first is Hilary Putnam's version of the argument that verificationism is neither empirical nor analytic, and is therefore meaningless by its own lights. According to Putnam, Carnap's construal of verificationism as significant in a practical, but non-cognitive, sense, in response to the objection, presupposes verificationism. Carnap's response is therefore viciously circular. I respond that Carnap's non-cognitive conception of verificationism presupposes pragmatism, and not verificationism, and thereby avoids Putnam's circularity. Second, there is a widespread belief that verificationism requires a criterion of empirical significance in order to demarcate the empirically testable sentences, but that no such criterion can be formulated. I reply that by adopting the pragmatic conception, the verificationist can select her favored language in the case-by-case manner described by Goldfarb and Ricketts, without a criterion of empirical significance.

Carnap's pragmatism maintains that the goal of scientific language is the derivation of observation reports. It therefore helps itself to a notion of observation report, of observation language. This notion is another major source of skepticism about logical empiricism. I argue that Carnap's account of observation language in "Testability and Meaning" is sufficient for the purposes of his pragmatism. On this account, a term is observational to the extent that it can be applied on the basis of minimal observation and inference. A degree of observationality can then be arbitrarily designated sufficient and necessary for a term's being observational in the language. I show that this approach to fixing the observation language is not vulnerable to van Fraassen's objections.

Finally, pragmatism helps to clarify Carnap's Principle of Tolerance. According to a widely held view, Carnap's tolerance rests on "relativity to language": since a language for science provides the rules for inquiry—be these semantic or evidential rules—language cannot itself be subject to such rules. So interpreted, the Principle of Tolerance is able to provide a critique of what I call 'first philosophy', i.e., the doctrine that the choice of concepts or rules in science can be constrained by considerations external to these rules.

Carnap does reject first philosophy, and his reasons for doing so include the reasons identified by the language relativity interpretations. Nonetheless, these interpretations omit two important aspects of tolerance. First, Carnap's pragmatism provides a second line of response to first philosophy: even if first philosophical considerations were clear or intelligible, they would not be *relevant* in science, as they would not advance the pragmatist's goal of efficiently deriving observable predictions. Second, I maintain that Carnapian tolerance opposes another broad approach to theory or language choice. I call this approach 'dogmatism'. The dogmatist deviates from her current language or theory as little as possible; to borrow a phrase from Quine, she adopts a "maxim of minimal mutilation". Although the dogmatist remains at all times entrenched in her language, availing herself of scientific considerations alone, her approach is opposed by Carnap's pragmatism, which instructs us to adopt the most efficient language, no matter how much deviation from current practice this would involve. In Carnap's metaphor, when navigating the "ship of logic", the dogmatist is hesitant to "cast... off from the *terra firma* of the classical forms"; the Carnapian pragmatist, by contrast, travels on the "boundless ocean of unlimited possibilities".

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1.0 INTRODUCTION

1.1 THE LOGICAL EMPIRICIST IDEAL

Logical empiricism emerged on the philosophical scene in the late 1920's as an ambitious movement seeking to set philosophy on a firm, scientific footing. Its practitioners claimed to have exposed as meaningless questions that in principle did not admit of a scientific resolution. Their most famous doctrine that was put to this end was their verificationism, according to which only empirically testable or logically determinate sentences are meaningful. Rudolf Carnap, perhaps the most influential logical empiricist, supplemented verificationism with his "Principle of Tolerance", which held that we have complete freedom when choosing between systematic formulations of our scientific knowledge. There is no "correctness" that enters into such a choice and that could require us to choose one language rather than another.

By the 1960's, the combined effect of a variety of objections was a widespread perception within the philosophical community that the logical empiricist program was fundamentally unworkable.¹ Three such objections stand out as particularly

¹Ron Giere has suggested to me that logical empiricism's decline was more due to a general *ennui* with the logical empiricists' approach and the arrival of a new generation of philosophers with their own concerns and motivations than to explicitly stated objections. Even if the explicitly stated objections do not entirely account for the shift away from logical empiricism, I suspect that they catalyzed it.

influential. First, the logical empiricists understood logical determinacy in a broad sense that included truth in virtue of meaning, or analyticity. W.V.O. Quine argued that the logical empiricist's conception of analyticity, by which they hoped to include mathematics within the sphere of the scientific and cognitively meaningful, was unacceptably obscure. Second, Carl Hempel, David Kaplan, and others refuted several of the logical empiricists' attempts to characterize the criterion of empirical testability that verificationism demanded. Third, Norwood Hanson, Putnam, Bas van Fraassen, and others argued that verificationism presupposes an unfeasible distinction between observation and more abstract theory.

The decline of logical empiricism was coeval with, and likely helped to enable, several subsequent philosophical movements. First, there was the ascension, in the 1970's, of the "analytic metaphysics" typified by David Lewis and Peter van Inwagen. While this literature is quite varied, it is certainly not, on the whole, governed by the kinds of standards of scientific legitimacy that the logical empiricists had sought to codify and promote.² Meanwhile, those who remained committed to the ideal of scientific philosophy were fragmented. Some adopted naturalism along the lines advocated by Quine. (Just how Quinean naturalism differs from the views of the logical empiricists is a delicate question.) Others carried on with the philosophical study of scientific theories without seeking any precisely formulated overarching conception of scientific philosophy.

It is against this background that I will make the case for a reconsideration of the original logical empiricist ideal of a scientific philosophy. I believe that Carnap's fundamental step in this direction, when properly understood, still looks promis-

²Analytic metaphysics is often thought to have been abetted by Quine's claim to have shown that there is no boundary between science and metaphysics; see Quine [60, 61]. For an argument against this interpretation of Quine's views on metaphysics, see Huw Price [54].

ing from our current perspective. The fundamental step I have in mind is what I will refer to as ‘Carnap’s pragmatism’; this is the practical decision to use scientific language as an instrument for the derivation of intersubjective observational knowledge. Once the role of pragmatism in Carnap’s views is properly appreciated, other important aspects of his program become more plausible—I have in mind, in particular, his Principle of Tolerance, his critique of metaphysics, and even his infamous verificationism.

Those who have followed work on Carnap’s philosophy over the last three decades may wonder whether there is a need for another interpretation or defense of Carnap. Beginning in the 1980’s and continuing into the following decades, a secondary literature developed around the insightful scholarship of Steve Awodey, André Carus, Richard Creath, Michael Friedman, Warren Goldfarb, Alan Richardson, Thomas Ricketts, and others. And more recently, some philosophers have invoked Carnap’s distinction between internal and external questions to criticize some of the excesses of analytic metaphysics.

My Carnapian view overlaps to varying degrees with some of the philosophers just named; the affinities with the interpretations of Creath and Ricketts are particularly strong. However, I believe that my account of pragmatism adds to the Carnapian project in two broad respects. First, the fundamentality of Carnap’s pragmatism has not been fully appreciated. While many other commentators have noted that Carnap views verificationism, e.g., as a practical proposal, to be motivated by values and preferences (as opposed to evidence), such discussions typically lack sharp formulations of the pragmatist values or of how they recommend verificationism.

Second, the lack of attention to pragmatism has led to a truncated picture of the Principle of Tolerance. As is well known, tolerance maintains that the scientist or scientifically-oriented philosopher can choose whichever linguistic tools she finds use-

ful, without regard for epistemic or cognitive justification. It is widely believed that, for Carnap, this is due to a kind of “relativity to language”: since language provides the rules for inquiry—be these semantic or evidential rules—language cannot itself be subject to such rules. Interpreted in this way, the Principle of Tolerance is able to provide a critique of what I call ‘first philosophy’, i.e., the doctrine that the choice of concepts or rules in science can be constrained by considerations external to science. Now I think that Carnap does reject first philosophy, and that his reasons for doing so include the reasons identified by this line of interpretation.

But although the various language-relativity interpretations are neither exegetically incorrect nor philosophically flawed, they do not tell the whole story of Carnap’s tolerance, as they leave out two important points. First, Carnap’s pragmatism provides a second line of response to first philosophy: even if first philosophical considerations were clear or intelligible, they would not be *relevant* to linguistic choices in science; they would not advance the pragmatist’s goal of efficiently deriving observable predictions. Second, I maintain that Carnapian tolerance opposes another broad approach to theory or language choice. I call this approach ‘dogmatism’. The dogmatist remains at all times entrenched in her language, availing herself of scientific considerations alone—she is not guilty of first philosophy, and she does not contravene any of the language relativists’ strictures. She wishes to deviate from her current language as little as possible; to borrow a phrase from Quine, she follows a “maxim of minimal mutilation”. This view is opposed by Carnap’s pragmatism, which instructs us to adopt the most efficient language, no matter how much deviation from current practice this would involve. In Carnap’s metaphor, when navigating the “ship of logic”, the dogmatist is unwilling to “cast... off from the *terra firma* of the classical forms” [11, xv]; the Carnapian pragmatist, by contrast, travels on the “boundless ocean of unlimited possibilities”.

Although the opposition between tolerance and dogmatism has flown under the radar, I believe that it is an important aspect of tolerance. Dogmatism is pervasive in contemporary philosophy and has not, to my knowledge, been confronted with as plausible an alternative as I believe pragmatism to be. Carnap's pragmatism is of particular use in ontology. The critique of ontology that Carnap develops in his later work, I maintain, is a special case of the Principle of Tolerance and of verificationism: Carnap opposes decisions to posit or reject entities that are motivated by either first philosophical or dogmatic reasons. The decision to quantify over an entity or not, like other decisions concerning the structure of our scientific language or "total theory", should advert to only pragmatic considerations. I believe that this approach can accommodate much of what is interesting and successful in "analytic metaphysics"—the Carnapian pragmatist would ask many (though not all) of the analytic metaphysician's questions, though she would occasionally employ different methods for constructing and evaluating answers.

1.2 PREVIEW

I begin my discussion of Carnap's pragmatism in earnest in Chapter 2. I characterize the problem that tolerance, quasi-syntax, and verificationism were introduced to solve and then show that Carnap's solution depends critically on pragmatism. The chapter's focus is on Carnap's "syntax" era views, though it occasionally looks ahead to later formulations of views that had already been articulated, or that were natural developments of syntax-era ideas. The problem is to set metaphysical speculation on a scientific path. I characterize the Carnapian anti-metaphysical stance in terms of two components. The first is a requirement to formulate philosophical theses as

proposals of artificial, deductively systematized languages for science. The second is the Principle of Tolerance. This holds that languages for science are not answerable to conceptions of the metaphysical structure of reality. During the syntax period, tolerance involved “quasi-syntactic” translations of philosophical theses into claims about a language’s grammar or proof theory; in this form, the philosophical theses could not hope to bear on language choice as metaphysician intended. Carnap required that philosophical theses be translated as syntactic claims because he believed it to be the only way that such theses could hope to meet his verificationist criterion of meaning. And he adopted the verificationist criterion, I claim, because of his pragmatism.

As I noted above, Carnap’s pragmatism holds that a language for science is an instrument whose purpose is to help us inferentially manipulate observation reports. Thus, the logico-mathematical and theoretical (empirical) components of a language are auxiliaries for the observation language. And in selecting an observation language, we should opt for the candidate that is easiest to manipulate. From this point of view, if an expression is not logical and does not add to predictive power, then it should not be included in the language—it enlarges the language without making the language better able to achieve its purpose. And I argue that verificationism is the outcome of constructing our language in this way. This is how pragmatism grounds verificationism.

Chapter 3 explores the implications of Carnap’s embrace of Tarskian semantics for his tolerance and pragmatism. After his “move to semantics”,³ Carnap replaces his quasi-syntax conception with his distinction between internal and external ques-

³As I note in §2.2, talk of Carnap’s “move to semantics” is problematic, as Carnap had already employed semantic resources in constructing Language II in the *Logical Syntax of Language*. Nonetheless, Carnap does adopt a different attitude towards the concepts of meaning and reference after his assimilation of Tarskian semantics.

tions in order to develop a critique of ontology. I begin by noting that Carnap's critique of ontology is a special case of his Principle of Tolerance; the central point of his critique is that the decision to postulate an entity should not be constrained by considerations of ontological correctness. How does the internal/external ('i/e') distinction contribute to this critique? I argue that the i/e distinction is essentially the verificationist's distinction between cognitively meaningful and meaningless—the internal questions are the meaningful questions, which pertain to sentences of languages constructed according to verificationist strictures ("empiricist" languages); while the external questions are those that do not. I then invoke the dogmatic approach to language or theory choice, discussed above, to show that the i/e distinction does not suffice for Carnap's critique of ontology in its entirety. In seeking to minimize deviations from her current language, the dogmatist does not contravene verificationist strictures. She does, however, violate the pragmatic imperative to adopt the most expedient deductive device. Finally, I compare Carnap's pragmatism to other views that share important similarities, *viz.* American pragmatism, pragmatic philosophies of science, and van Fraassen's constructive empiricism.

Carnap's pragmatism maintains that the goal of scientific language is the derivation of observation reports. It thus helps itself to a notion of observation report and, more generally, of observation language. In Chapter 4, I present Carnap's mature account of the distinction between observation and theoretical language. On this account, a term is observational to the extent that it can be applied on the basis of minimal observation and inference. It is then up to the logician of science stipulate that some degree of observability, so understood, is to be sufficient and necessary for her language's binary concept of an observation term. I argue that this account avoids van Fraassen's objections to the distinction between observational and theoretical language, and that it fits with Carnap's critique of the protocol sentence

debate that took place between members of the Vienna Circle in the early 1930's.

Chapter 5 contains my responses to two of the most historically influential objections to verificationism. The first objection holds that the verificationist requires a criterion of empirical significance in order to precisely identify which terms of an arbitrary language contain empirical content, but that, in light of the repeated failure of attempts to formulate such a criterion,⁴ we should conclude that there is no such criterion to be had. In response to this objection, I argue that complete pessimism is unwarranted, as Creath's [31] amendment to Carnap's [19] criterion remains intact. Moreover, even if a counter-example to Creath's criterion were discovered, Carnapian pragmatism can, without a criterion of empirical significance, demarcate cognitively meaningful discourse at the verificationist's desired point: a direct appeal to Carnap's pragmatism would eliminate the same class of non-empirical, non-logical expressions as would a pragmatically motivated criterion of empirical significance, if the latter were successful. This more direct method of instituting verificationism is a version of Goldfarb and Ricketts's [40] case-by-case approach to the selection of languages for science.

The second objection discussed in Chapter 5 holds that the verificationist criterion is not empirically testable, nor is it analytically true or false, and that it is therefore cognitively meaningless by its own lights. Carnap's response to this objection is well known: he maintains that advocacy of a language for science is a recommendation or imperative, and that a lack of cognitive meaning is not a drawback of utterances of these kinds. Putnam [55] objects to Carnap's response to the objection. He argues that Carnap's construal of verificationism as a practical proposal itself presupposes verificationism, and that this makes Carnap's response

⁴Earlier criteria of empirical significance are stated by A. J. Ayer [4] and Carnap [9, 10] and refuted by Church [30] and Hempel [43].

viciously circular. I respond that Carnap's construal of verificationism as a practical proposal presupposes pragmatism and not verificationism, and is therefore not circular in the manner described by Putnam. In the course of my response, I clarify the status of verificationism—I explain its internal and external construals, and clarify the sense in which it is a pragmatic decision and not a theory of meaning in the traditional sense. I then consider whether pragmatism succumbs to the analogous “self-undermining” objection that inclusion of a pragmatist thesis within our language for science would not itself be pragmatically useful. I argue that pragmatism is a preference concerning formal languages, and that, since preferences need not apply to themselves, pragmatism is not self-undermining. Finally, I consider what reason there is to adopt a pragmatist conception of science in the first place. I suggest that pragmatist preferences be understood as derivative of a desire to avoid fruitless disputes.

Chapter 6 contrasts my pragmatist interpretation with the language relativity interpretations of tolerance discussed above. According to these interpretations, our freedom to choose languages for science, for Carnap, is due to problems with the notion of a language-transcendent fact, i.e., a fact that could render false a sentence that is stipulated to be true. I distinguish two kinds of language relativity interpretation—correctness-relativity and content-relativity. I then discuss the relationship between language relativity and pragmatism. The two views are compatible, and Carnap's pragmatism may even motivate the language relativist's rejection of the notion of language-transcendent fact. However, there are two important differences between the two approaches. First, unlike pragmatism, language relativity accounts do not provide any response to the dogmatist, and second, if the notion of language-transcendent fact turns out to be scientifically legitimate, then the pragmatist, but not the language relativist, can accept it without giving up tolerance.

Chapter 7 situates Carnap's critique of ontology with respect to deflationary views in contemporary metaontology. Ontological deflationism holds that there is no substantive issue at stake in ontological debates. The view comes in two main varieties: ontological anti-realism, according to which ontological assertions lack determinate truth-values, and quantifier variance, according to which ontological debates result from equivocation in the disputants' uses of their quantifiers. Drawing on the discussion of chapter 3, I show that Carnap's i/e distinction involves a verificationist version of anti-realism. I contrast this anti-realism with that of David Chalmers [29]. I then consider whether Carnap was a quantifier variantist. I argue that he was not a quantifier variantist in the sense of Eli Hirsch [44, 45]. On the other hand, Carnap's doctrine of content-relativity implies a version of quantifier variance that is substantially different from Hirsch's.

2.0 THE SYNTAX PERIOD: TOLERANCE, QUASI-SYNTAX AND PRAGMATISM

2.1 TOLERANCE AND CARNAP'S ANTI-METAPHYSICAL STANCE

Imagine a discussion between a logicist, a formalist, and Carnap. The logicist asserts, “Numbers are classes of classes of things”, and the formalist disagrees, stating, “Numbers belong to a special primitive kind of objects” [11, 300]. Carnap stresses that the discussion must be conducted with great care, as the question has the propensity to elicit pointless metaphysical speculation, as opposed to fruitful scientific work. The logicist and the formalist are wary of Carnap’s distinction between the metaphysical and the scientific approaches to their question, and ask for clarification. Carnap responds that the debate can be put on a scientific footing in two steps.

The first step is to have the two logicians clarify their views by construing them as statements within artificial, formal languages with explicitly stated grammatical and inferential rules, i.e., into Carnapian *languages for science*. Absent such a construal, according to Carnap, the disputants’ assertions do not meet scientific standards of clarity and precision. The precision that regimentation into an artificial language for science brings to an advocated theory is supposed to clarify, and perhaps settle,

questions that looser formulations leave open. Carnap gives as an example of such questions: “[i]n what way can the macro-concepts of physics (e.g., temperature, density, velocity of sound, etc.) be defined in terms of micro-concepts (electro-magnetic field, gravitational field, electrons, etc.)?” [24, 47] According to Carnap, natural languages are “unsystematic and logically imperfect” [11, 2]; “only in a symbolic language has it proved possible to achieve exact formulation and rigid proofs” [11, 3]. In his unpublished paper “Quine on Analyticity”, he discusses one kind of logical deficiency of natural languages that can be avoided in artificial language systems. He considers Quine’s [61, 32]

indecision over whether one should use the word [‘green’] for something unextended, i.e., for a single space-time point.... This unclarity of ‘green’ in ordinary language is not important.

Naturally, in laying down a language system, however, it cannot be tolerated.... so long as he [the language designer] has made no decision on this [whether ‘green’ may be applied to a single space-time point], he has still not given ‘G’ [his explicatum for ‘green’] a completely clear meaning. [25, 429]

What is the relation between a flesh and blood person’s linguistic performances and an artificial (and presumably abstract) Carnapian language for science? Carnap suggests that the physical utterances can be interpreted as sentences of a language for science by means of the kind of *correlative definitions* through which Hans Reichenbach [64, 63] proposed to relate axiomatic to physical geometry: “[b]y means of correlative definitions it is determined which symbols of the physical language are to correspond to the primitive symbols (or to certain defined symbols) of the axiomatic system” [11, 79]. The correlative definitions will also relate the grammatical rules of the two languages, so that composite symbols of the physical language are correlated with composite symbols of the language for science. Carnap does not say much about the constraints on a correlative definition. He proposes that correlative definitions

“[agree] with the actual historical habits of speech of” the speaker of the physical language [11, 228], but does not give a precise account of what such agreement amounts to.

In requiring that philosophical theses be regimented in this way, Carnap is not demanding that scientists or philosophers abandon natural language entirely when communicating in the laboratory, in the field, or even in their publications. I take him to envision precise formulations of the various theories under discussion, and of the interrelations between these theories, waiting in the wings, should the scientists working on them encounter difficulties or enter into apparently intractable disputes. To “choose” or “use” a language for science is to have it available and to resort to it for such purposes.

Let us suppose that the logicist and the formalist take Carnap’s first step. The obliging logicist thus explicates her thesis (‘Numbers are classes of classes of things’) as advocacy of a set-theoretic definition of the natural numbers. The formalist explicates her thesis (‘Numbers are basic entities’) as the proposal of the use of Peano arithmetic (‘PA’) without an explicit definition of the natural numbers.

This first step alone does not insulate the debate against speculative metaphysics. For each logician now tries to justify her formal system in what Carnap regards as a misguided way. The logicist now asserts that, since numbers *are* classes of classes of objects, they must, on pain of misrepresenting the facts or the metaphysical structure of numbers, i.e., on pain of *cognitive incorrectness*, be *defined as* classes of classes of objects. And the formalist asserts that, since numbers *are* basic entities, numbers must be implicitly *defined in terms of* PA. That is, the logicist argues as follows:

(L1) Numbers are classes of classes of individuals.

Therefore,

(L2) Numbers must be defined in terms of class expressions.

(L3) The formalist language L_F does not define numbers in terms of class expressions.

Therefore,

(L4) We should not adopt L_F as our language for science.

The two logicians have re-cast their debate in terms of advocacy of formal languages, as per Carnap's suggestion, but their advocacy now takes the form of issuing metaphysically-driven "prohibitions", as Carnap would put it, against alternative conceptions of the numbers.

Carnap seeks to dissuade the logicians from this kind of argument in the second step of his contribution to the conversation. This second step is his Principle of Tolerance, which holds that

[i]n logic, there are no morals. Everyone is at liberty to build up his own logic, i.e. his own form of language. 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. [11, 52].

Carnap now tells the disputants that cognitive correctness—faithfulness to the facts as they conceive them—should not enter into the choice of a language; the decision to use a formal language for scientific purposes is not a matter of cognitive correctness. The disputants are free to choose whichever language most efficiently achieves the purposes for which it will be used. The choice of such a language brings with it cognitive standards for the acceptance or rejection of sentences within the language. But the initial choice of a standard is not itself held to this kind of standard. This denial of the accountability of language choice to metaphysical justifications, I claim, is a rejection of arguments, like (L1)-(L4), that move from characterization of a

language as incorrect in this sense to the conclusion that the language is inadequate for science.

For some skeptics of metaphysics and scientifically-oriented thinkers, tolerance, at least in spirit, has significant appeal. Carnap maintains that it is, “as far as special mathematical calculi are concerned, the attitude which is tacitly shared by the majority of mathematicians” [11, 52]. However, tolerance’s precise content and philosophical underpinnings are far from clear. Many philosophers balk at tolerance’s sharp distinction between the cognitive acceptance of a sentence and the non-cognitive, pragmatic acceptance of a language. Moreover, my brief discussion above offered no reason why the logicist or the formalist should abandon their dispute by accepting the tolerant conception of the choice between their languages. After all, isn’t it the case that there either are numbers or there aren’t? And if this is the case, shouldn’t the existence or non-existence of numbers influence our decision to quantify over them?¹

2.2 QUASI-SYNTAX

In the previous section, I discussed Carnap’s contention that philosophy, when done right, is the logical analysis of scientific theories. Such an analysis would concern axiomatizing physics, mathematics, and logic, as well as the logical relations between theories and observation reports; philosophical questions, in so far as they can be

¹A straightforward problem with logicist’s argument is that (L1)-(L3), if they provide a reason not to adopt L_F , provide only a defeasible reason not to adopt it, and therefore do not entail the conclusion’s all-things-considered judgment. Of course, this is not Carnap’s objection to the argument. Carnap does not take (L1)-(L3) to provide even a defeasible reason not to adopt L_F . So the target of his objection is the claim that philosophical doctrines like (L1) provide reasons not to adopt languages whose commitments conflict with this answer.

made sense of, are questions of the logic of science.

But what, precisely, is “logical analysis”? A major theme of Carnap’s work in the early 1930’s is the thesis that logic must eschew philosophical notions of meaning and reference. On Carnap’s view at this time, logic is concerned solely with what he called ‘syntax’: “[t]he *logic of science* (logical methodology) is nothing else than the *syntax of the language of science*” [11, 7]. Carnap characterizes the logical syntax of a language as the “formal rules” governing the language, where a rule is formal if

no reference is made in it either to the meaning of the symbols (for example, the words) or to the sense of the expressions (for example, the sentences) but simply and solely to the kinds and order of the symbols from which the expressions are constructed. [11, 1]

However, Carnap’s construction and “syntactic” analyses of Language II, his languages for intuitionistic and classical mathematics, respectively, show that Carnap’s conception of syntax is broader than the contemporary one. Whereas we now understand a language’s definition of implication to be syntactic only if it is recursive, Carnap’s definitions of logical consequence in Languages I and II are not recursive.² Carnap’s definitions of consequence for both languages ensure that, if every instantiation of a universally quantified sentence p is provable from a set G of sentences, then p is a consequence of G , even if p is not itself provable from G . These definitions allow Carnap to say that the Gödel sentence, which says of itself that it is not demonstrable and by which Gödel proved Peano arithmetic to be incomplete, is a consequence of the empty set, i.e., analytic.

However Carnap understood syntax, his syntax period was characterized by an antipathy towards the semantic notions of meaning and reference. The combination of Carnap’s conception of philosophy as logic of science, together with his rejection

²Thanks to Tom Ricketts for help with this point.

of the notions of meaning and reference, lead him to his quasi-syntax conception of philosophy. To explain this conception, I will begin with Carnap’s method of demarcating the philosophical sentences to which the account was to apply. Carnap relies on two criteria for identifying a sentence as philosophical. The first is the occurrence of semantic notions like meaning or reference [11, §75]. The second is the occurrence of “universal words” [11, §76], i.e., of predicates that hold analytically of all names of the type level to which they apply. Carnap gives as examples of universal words ‘thing’, ‘object’, ‘property’, ‘relation’, and ‘fact’ [11, 293]. Most intuitively philosophical theses are, I believe, likely to meet one of these two criteria.

Many philosophical assertions *prima facie* appear to concern non-linguistic objects, e.g., numbers, properties, minds, material objects, etc. Carnap believes that this appearance is deceiving. He maintains that many philosophical statements seemingly about non-linguistic objects (i.e., statements in the “material mode of speech”) are to be translated into sentences about the logic of science, i.e., into the “formal mode of speech”. Philosophical sentences that have no such translation are to be rejected as meaningless. Carnap’s syntactic understanding of the logic science—in particular, his rejection of philosophically loaded semantic notions—leads him to require that these claims about the logic of science be about syntax,³.

Philosophical statements in the material mode must, then, on pain of meaninglessness, be translatable into the formal mode. Carnap gives the following account of translation from the material mode into the formal mode. Quasi-syntactic sentences are translated from the material into the formal mode on the basis of the terms occurring in them. The sentence $\ulcorner P(a) \urcorner$ is quasi-syntactic with respect to sentence $Q(\ulcorner a \urcorner)$

³As noted above, Carnap’s notion of syntax in the *Logical Syntax of Language* includes substitutional semantics. However, the syntactic claims into which he proposes to translate philosophical theses are all syntactic in the narrower present day sense.

if (1) $\ulcorner Q \urcorner$ is a syntactic predicate (in the material mode: designates a syntactic property) and (2) every application of $\ulcorner P \urcorner$ to an object is equivalent to an application of $\ulcorner Q \urcorner$ to a name of this object. If there is a $\ulcorner Q \urcorner$ that meets (1) and (2) for $\ulcorner P \urcorner$, then Carnap says that the syntactic sentence $Q(\ulcorner a \urcorner)$ translates the quasi-syntactic $\ulcorner P(a) \urcorner$ from the material mode into the formal mode of speech. A predicate or a sentence is quasi-syntactic if the relevant translation exists; otherwise, it is not. Ricketts [69, 240-241] gives the example: ‘is a positive integer’ is quasi-syntactic with respect to ‘is a numeral’ because every positive integer has a name that is a numeral. ‘Is red’ is not quasi-syntactic because there is no syntactic property that belongs to all and only names of red things.⁴

2.3 TOLERANCE AND QUASI-SYNTAX

Carnap warns that uncritical use of the material mode in philosophy can give rise to pseudo-disputes. The pseudo-disputes that arise in this way are precisely those that tolerance is supposed to dissolve. And the requirement to translate quasi-syntactic statements into the formal mode dissolves these pseudo-disputes by replacing claims about the structure of reality, with which a language might be thought to conflict, with a syntactic statement that is not relevant to the choice between languages for science. In this way, Carnap’s conception of quasi-syntax provides a precise means for implementing the Principle of Tolerance.

The role of quasi-syntax in tolerance becomes apparent once we translate the logicist’s premise (L1) into the formal mode. (L1), ‘Numbers are classes of classes of things’, is a material mode sentence that contains the universal word ‘number’.

⁴For an objection to Carnap’s notion of quasi-syntax, see Carus [28, 256-261].

Carnap suggests as a formal mode translation:

(L1') "Numerical expressions are class expressions of the second level" [11, 300].

(This is an acceptable translation, by Carnap's criteria, because 'numbers' is quasi-syntactic with respect to 'numerical expressions', and 'classes of classes of things' is quasi-syntactic with respect to 'class expressions of the second level'.)

Formal mode translations of philosophical theses, such as L1', are trivially obvious claims about some particular language or set of languages. This is why Carnap expects translation into the formal mode to dissolve philosophical disputes. (L1'), for example, is implicitly restricted to certain languages of which it is true. Once the sentence has been translated into the formal mode and relativized to the desired languages, any disagreement about it should disappear. For example, if (L1') is true of the logicist's L_L , then the formalist can acknowledge as much, regardless of her attitude towards L_L 's definitions of the numbers. Logical analysis thus reveals the dispute between the logicist and the formalist to concern uncontroversial syntactic claims. In particular, (L1') provides no reason not to accept L_F . To simply say that numerical expressions are class expressions of the second level in some language is not to take a stand on the advisability of adopting L_F . Given the quasi-syntactic conception of philosophy, the logicist's argument is invalid.

Any argument that purports to advance metaphysical reasons not to adopt a language will likely face a response of the same form. The attempt to state these reasons will presumably be philosophical, and therefore quasi-syntactic. Instead of facts limned by the philosopher and that language could be, in the words of Goldfarb and Ricketts, "correct to" [40, 62], there are only facts about the grammar or proof theory of particular languages. As Ricketts puts it, "unlike the pseudo-object statements they are to supplant, syntactic sentences do not appear to present

an array of ontological facts which ground or constrain the construction of a language for science” [70, 188].

There is, therefore, an important connection between the Principle of Tolerance and the doctrine of quasi-syntax. If tolerance holds that metaphysical notions of correctness are out of place in deliberations about language choice, then the foregoing discussion shows that quasi-syntax would provide a basis for tolerance. According to the quasi-syntax view, metaphysical assertions are at best disguised syntactical claims that are not suitable to guide or constrain language choice.

The interpretation of tolerance that I am presently articulating bears certain similarities to that of Steve Awodey and Carus [3]. Awodey and Carus take Carnap’s quasi-syntactic conception of philosophy to involve an abandonment of the Wittgensteinian conception on which the rules of language are “objectively determinate and discoverable artifacts of the nature of representation” [3, 35].⁵ Though Awodey and Carus take quasi-syntax to be an important step in Carnap’s progress towards tolerance, they do not take it to be sufficient; they maintain that between Carnap’s initial formulations of quasi-syntax and tolerance, there remained “obstacles... to be overcome on the logical front” [3, 35]. The obstacles that Awodey and Carus have in mind here are certain difficulties confronting Carnap’s early formulations of logicism [3, §3]. There are two points worth mentioning here. First, tolerance, as I

⁵Friedman has a similar view of tolerance, and in particular of its relationship to Carnap’s disagreement with Wittgenstein:

[t]he key move of the *Logical Syntax* is the rejection of the ‘logical absolutism’ of the *Tractatus*. There is no longer a single language in which all meaningful sentences are formulated, and there is no longer a single set of privileged logical sentences (the tautologies of the *Tractatus*). Instead, there is an indefinite multiplicity of distinct formal languages or linguistic frameworks, each with its own characteristic set of logical truths or analytic sentences. [37, 183-84]

have characterized it, is independent of logicism. The challenges for the latter are therefore obstacles to Carnap’s broader philosophical project, though they are not obstacles to tolerance *per se*. Second, tolerance does not follow from the existence of a plurality of languages, i.e., from abandonment of the Wittgensteinian conception of a single language that captures the nature of representation; to say that there are many languages is not to say that the choice between them is non-cognitive.

Of course, the quasi-syntax view involves a strikingly counter-intuitive interpretation of metaphysical discourse. It therefore invites the question, why does Carnap conceive of philosophy as quasi-syntactic—why does he require philosophy to be logic of science?

2.4 QUASI-SYNTAX AND VERIFICATIONISM

The requirement that philosophy be translatable into the logic of science flows from Carnap’s *verificationist criterion of meaning*.⁶ In Carnap’s mature formulation, verificationism holds that a sentence is cognitively meaningful⁷ if and only if it is translatable into a sentence of an *empiricist language*.⁸ Carnap conceived of the empiricist languages as those languages every term of which is either empirically significant or logical.⁹ With a criterion of empirical significance for terms, and a logical vo-

⁶Thanks to Tom Ricketts for reminding me of this, and for pointing out that this point allows me to unify my treatments of the Principle of Tolerance in Carnap’s syntax and semantics periods.

⁷Cognitive meaning is the kind of meaning in virtue of which a sentence acquires a truth value. Cognitively meaningless sentences may have other kinds of meaning. For example, imperatives, commands, and expressions of approval may have what Carnap [21, 1000-1003] calls “optative” emotive meaning.

⁸Carnap first conceives of verificationism in terms of translatability into an empiricist language in his [9] and [10].

⁹It should be noted that the requirement of translatability into an empiricist language does not require that we currently reject as meaningless or unclear any claim for which we do not, at present,

cabulary, we can define empirical significance for sentences as the absence of terms that are neither empirically significant nor logical. An empiricist language is then one in which every sentence is either analytic or empirically significant. I will say more about Carnap’s conceptions of empirical significance, logical vocabulary, and analyticity below.

Philosophical questions that are not translatable into an empiricist language are cognitively meaningless according to Carnap’s verificationism. Other questions currently dealt with by philosophers concern objects that are investigated by empirical scientists, for example, by psychologists. According to Carnap, in these “departments of philosophy the psychological questions must first of all be eliminated; these [questions] belong to psychology, which is one of the empirical sciences, and are to be handled by it with the aid of its empirical methods” [11, 278]. Philosophy must be logic of science, then, as per the quasi-syntax view, because philosophy is not a part of empirical science. To meet the verificationist criterion, philosophy must become analytic, and one way to do this is to become syntactic.

How does Carnap understand the concepts of empirical significance and logical vocabulary in terms of which he characterizes the empiricist languages? Unfortunately, he was unable to develop a satisfactory conception of the logical vocabulary. In *The Logical Syntax of Language* (*‘Syntax’*), his canonical formulation of his syntax-era views, he attempts to give a general definition of ‘logical expression’ [11, §50]. The basic idea of this account is that the class of logical expressions is the largest class such that every sentence constructed solely from elements of it is logically determinate. Carnap later abandoned this approach, and for good reason;

possess such a translation. A concept that is at present unclear may, for whatever reason, strike us as *potentially* explicable in verificationist terms. According to the verificationist, of course, if a claim continues to resist translation into an empiricist language, it must for that reason eventually be discarded.

the mathematician Mac Lane demonstrated that “in general, there is no *unique* such maximal set of symbols” [2, 233]. After abandoning this approach, and after his assimilation of Tarskian semantics, Carnap came to expect semantics to furnish a definition of ‘logical expression’. However, he himself did not succeed in providing such a definition.¹⁰ Since Carnap’s work on these issues, philosophers and logicians have made progress towards defining the logical vocabulary. For an assessment of the prospects of Carnap’s philosophy of logic and mathematics in light of the current state of work on these topics, see Awodey [2], particularly pp. 244-45.¹¹

There is a great deal more that could be said about Carnap’s understanding of logicality and its relationship to his verificationism. However, these issues lie outside the scope of this essay. My contention is that an understanding of pragmatism helps with the problems associated with the second criterion for admissibility into an empiricist language, *viz.* empirical significance. Informally, the empirically significant terms are those that “[make] a difference for the prediction of an observable event” [19, 49]. Carnap’s formal work on empirical significance in his [9], [10] and [19] aimed to give a precise definition of this idea for an arbitrary language.

Today, the project of formulating a criterion of empirical significance is widely believed to have failed. This is a second source of skepticism about Carnap’s verificationism. I address this worry in §5.1.

¹⁰See Awodey [2, 234-35] for citations and discussion.

¹¹If it turns out that the leading criteria of logicality fail to admit the desired class of expressions, then I believe Carnap could resort to the other criterion for admissibility, *viz.* empirical significance. Such an approach, in my view, would work for mathematics, for example. I believe this solution to be consistent with Carnap’s basic philosophical commitments and preferences with the exception, of course, of his logicism.

2.5 CARNAP'S PRAGMATISM

In the previous section, I argued that the quasi-syntax conception that fueled Carnap's critique of metaphysics in his syntax period depends for its motivation on verificationism. But the latter doctrine is plainly not a suitable motivational resting point. What Carnap needs is a prior motivation for verificationism. And so Carnap came to view verificationism as a practical proposal to be made on the basis of its pragmatic advantages [10, 33]. This is in accordance with his Principle of Tolerance, which, as I note in §2.1, views language choice as non-cognitive. But what is the pragmatic conception of language choice appealed to here, and what are the pragmatic advantages of verificationism? These questions bring me to my central concern, Carnap's pragmatism.

Carnap's full pragmatic conception of science did not come to him all at once and it is never fully spelled out in any single work. However, it can be pieced together from remarks occurring in a variety of texts. Carnap's first step towards pragmatism occurs in 1932, in his paper "On Protocol Sentences". It is here that Carnap first describes the choice of a fragment of the scientific language (in this case, the observation fragment) as a matter of "practical utility" [23, 458], and not of the "correctness of assertions" [23, 465]. I will here borrow the words of Awodey and Carus [3, 39], who nicely articulate the importance of this paper, in which "a new tone had suddenly entered [Carnap's] writing, one he would stick with from then on, and that would become deeply characteristic". They continue: "the sense of discovery and enthusiasm is palpable.... And [Carnap] is very much aware that it represents an even more radical departure from his and the Vienna Circle's previous position".¹²

¹²Whereas I take the crucial innovation here to be a conception of the choice between languages

Carnap returns to this practical conception of language choice in 1947's *Meaning and Necessity*. There, he spells out this practical conception through his characterization of language as an instrument to be used for a chosen purpose:

the choice of a certain language structure... is a practical decision like the choice of an instrument; it depends chiefly upon the purposes for which the instrument—here the language—is intended to be used and upon the properties of the instrument. [17, 43]

The decision to use a language for science is the practical decision to use an instrument. Languages, like other instruments, have purposes for which they are to be used. The decision to use a particular language is practically justified to the extent that the language achieves this purpose efficiently. There is no “categorical imperative” to use language for some privileged cognitive purpose, regardless of our aims, desires, and preferences. The evaluation of the choice of a language is therefore entirely relative to the end for which it will be used. I will call this general practical conception of language choice *generic pragmatism*.

For Carnap, the specific purpose of scientific language is the description and accurate prediction of observable events. This is *Carnap's pragmatism*.

Carnap first explicitly introduces his distinctive brand of pragmatism in his 1934 paper, “Formal and Factual Science”. There he applies the view to logic and mathematics, i.e., to the “formal sciences”, which are composed of analytic sentences:

[s]cience uses synthetic and analytic statements 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

as a matter of practical utility, Awodey and Carus take the innovation to be a new emphasis on “precise statements of definitions and rules” instead of “vague *Erörterungen*” [3, 40]. I discuss this contrast in connection with Carus's [28] interpretation further in §5.8 below.

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. *Formal science* has no independent significance, but is an auxiliary component introduced for technical reasons in order to facilitate linguistic transformations in the *factual sciences*. [15, 127].

This view is echoed five years later in “Foundations of Logic and Mathematics”. There, Carnap examines “the role of logic and mathematics as applied in empirical science”, and finds that these two formal sciences “furnish instruments for deduction, that is, for the transformation of formulations of factual, contingent [i.e., empirical] knowledge” [12, 2]. If mathematics is understood to be “an instrument of deduction within the field of empirical knowledge rather than as a system of information, then many of the controversial problems are recognized as being questions not of truth but of technical expedience” [12, 50].

Logic and mathematics thus serve an auxiliary function on behalf of the observational and theoretical sub-languages. (The theoretical language axiomatizes general empirical laws that posit unobservable entities.) And for Carnap, the theoretical language, in turn, is auxiliary to the observational language. In the following passage, from 1956’s “The Methodological Character of Theoretical Concepts”, Carnap describes the purpose of a language’s theoretical postulates:

[f]or an observer X to “accept” the postulates of [theoretical laws] T means here not simply to take T as an uninterpreted calculus, but to use T together with specified rules of correspondence C for guiding his expectations by deriving predictions about future observable events from observed events with the help of T and C . [19, 45]

To adopt a system of theoretical postulates *just is* to employ the postulates as an instrument for deriving observational predictions.

The observational sub-language is charged with the “description of observable

events” [19, 41], including both the recording of observations and the formulation of predictions. As I noted above, the choice of an observation language is a matter of “practical utility” [23, 458], and not of the “correctness of assertions” [23, 465]. Although Carnap does not, in [23], identify the purpose relative to which the various postulates are to be evaluated for their practical utility, it is plausible that he again has in mind his pragmatic conception: I think it plausible that Carnap’s use of ‘practical utility’ in connection with language choice should generally be understood as referring to the Carnapian pragmatist’s aims. A central consideration pertaining to the choice of an observational vocabulary, then, is the ease with which it can be manipulated and the efficiency with which it interacts with the theoretical and formal languages. For example, for Carnap, a reason not to formulate observation statements along the lines suggested by Otto Neurath is its syntactic complexity [23, 465].¹³

Carnap’s pragmatism accounts for his preference for various desiderata for language choice. The familiar criteria for language choice that Carnap urges in a number of works (e.g., Carnap [16, 221]), *viz.* expediency, fruitfulness, and simplicity, are the properties whose possession he believes best equips languages to carry out their descriptive and deductive tasks in empirical science.

The Carnapian pragmatist uses her language for science in order to derive, as efficiently as possible, observable predictions that match her record of her actual observations, i.e., her “protocol”. This ideal governs her *choice* of a language. Such a choice is typically made in one of two kinds of circumstances. First, the logician of science may discover a more effective way of deriving a set of observation

¹³Neurath gives the following example to illustrate how he would formulate observation statements: “Otto’s protocol at 3:17 o’clock: [Otto’s speech-thinking at 3:16 o’clock was: (at 3:15 o’clock there was a table in the room perceived by Otto)]” [53, 93].

reports that matches her protocol equally well. Second, through the collection of new evidence, a recalcitrant observation report—one that contradicts an observable prediction entailed by the language’s theoretical postulates—may be added to the protocol.

According to Carnap, “[t]here are no established rules for the kind of change which must be made” [11, 317] in response to a recalcitrant observation. This is a consequence of the holistic conception of theory testing that Carnap advances in the *Syntax* and maintains throughout his career. According to this holistic conception, observational predictions are typically entailed only by sets of sentences containing multiple theoretical postulates as well as descriptions of the experimental context, and, consequently, any of the members of the set responsible for a false prediction, or even the consequence relation subsisting between the set and the prediction, may be held responsible and revised. In some cases, we can restore consistency with the protocol by revising our description of the experimental setting. For example, we may decide that our measuring equipment was not set up in the way we had assumed in our description of it. In familiar, but less common cases, when the recalcitrant observations cannot be blamed on the experimental set-up, we may decide to revise the language’s theoretical postulates. In such cases, a general theory is “falsified” by observation. Still less commonly, one might revise the logical or mathematical rules that were employed in the derivation of the false prediction, so as to return the language to consistency with observation. Finally, the observation report with which the prediction conflicts may be revised; perhaps it is discovered that the observer suffered a hallucination, or, we might decide that our observational concepts, or the structure of our observation sentences, are defective.

A final pragmatist criterion, which is distinctive of the observation language, is *intersubjectivity*. Users of a common observation language should be able to use

their language to communicate with one another. I take it to be clear enough that science is a social enterprise, and that scientific language must for this reason be intersubjective.

I should note here that my pragmatist interpretation leans heavily on the notion of an observation sentence. This notion must bear philosophical weight, as it figures in the pragmatist’s formulation of the aim of science. The Carnapian pragmatist must therefore confront the influential challenges to the logical empiricists’ distinction between observational and theoretical language. I discuss and respond to van Fraassen’s challenges to this distinction in §4.3.

I began this section by noting that Carnap’s verificationism stood in need of motivation, and I claimed his pragmatism fit the bill. We are now in a position to appreciate the pragmatist case for verificationism. The addition of sets of descriptive, non-empirical terms—sets of non-observational terms that make no “difference for the prediction of an observable event” [19, 49]—would not improve the language *qua* deductive instrument for science. As Goldfarb and Ricketts put it, the addition of such vocabulary “doesn’t add to explanatory scope” [40, 75]. It would, however, increase the language’s complexity. Non-empiricist languages, as compared to empiricist languages, thus have the drawback of being more complex and, from the pragmatist perspective, have no compensating advantage. When choosing a language for science, therefore, the Carnapian pragmatist will immediately eliminate from consideration the non-empiricist languages. This restriction to empiricist languages just is Carnap’s verificationism.¹⁴

¹⁴I discuss this point in greater detail, in response to objections to verificationism, in §§5.3-5.4.

2.6 CONCLUSION

I began with an interpretation of the role of the Principle of Tolerance in Carnap's anti-metaphysical stance. I construed tolerance as a rejection of arguments that move from premises about the metaphysical structure of reality to conclusions about how a language for inquiry should be structured. I then explained how Carnap's quasi-syntax conception of philosophy supports the Principle of Tolerance, so understood: the quasi-syntax conception requires philosophical theses to be translated into statements about the syntax of a particular language or set of languages. And in this form, they cannot, in and of themselves, yield conclusions about the advisability of any language. Quasi-syntax, in turn, rests on verificationism; Carnap believed that the most promising way of bringing philosophical doctrines in line with verificationism was to render them analytic by construing them as syntactic. And finally, I presented Carnap's pragmatism and explained how it underlies his advocacy of verificationism. In this way, Carnap's tolerant, anti-metaphysical stance traces back through quasi-syntax, to verificationism, and finally to pragmatism. Now there may be still more fundamental principles or attitudes underlying pragmatism (I address this issue in §5.8). However, pragmatism is relatively fundamental in light of its role in the above-mentioned theses and attitudes, and therefore merits further investigation.

3.0 THE SEMANTICS PERIOD: TOLERANCE AND THE I/E DISTINCTION

As I have already noted, the Principle of Tolerance first appears in Carnap's work in his paper "On Protocol Sentences" [23]. And as I have also noted, at the time this paper was published, Carnap maintained a syntactic philosophy of logic. By 1936, however, under Tarski's influence, Carnap had abandoned his syntactic conception and had come to see the concepts of meaning and reference as useful and legitimate in the construction and interpretation of languages for science.

This move to semantics raises questions about Carnap's continued adherence to tolerance. Many of Carnap's initial formulations of the Principle of Tolerance made explicit reference to his syntax views. Moreover, the move to semantics involved an abandonment of the quasi-syntax conception of philosophy. Carnap continued to view philosophy as the logic of science—he continued to require, for the reasons discussed in §2.1, that philosophical theses be construed as proposals regarding artificial languages for science—but this view ceased to manifest itself as the claim that philosophy is concerned with the syntax of scientific language; Carnap abandoned his quasi-syntax conception of philosophy. But on the interpretation of the previous chapter, quasi-syntax played an important role in Carnap's Principle of Tolerance.

These considerations invite the questions: can Carnap maintain his tolerance in

the absence of his syntactic philosophy of logic? And, if he can, what form does tolerance take? Carnap explicitly answered the first question in the affirmative (see his [13, 247] and [20, 18]). With regard to the second question, his most explicit discussions of his critique of metaphysics during his semantics period centered on the internal/external ('i/e') distinction. This circumstance naturally leads one to expect the i/e distinction to, as Ricketts puts it, "take up the slack" [69, 247] in the absence of quasi-syntax. This chapter argues that Carnap's pragmatism provides a common foundation for the Principle of Tolerance in the two major periods of Carnap's thought, but that tolerance takes on different shapes due to his abandonment of his quasi-syntax conception. The i/e distinction is just the verificationist's way of distinguishing between the cognitively meaningful and meaningless. The i/e distinction thus plays a role in Carnap's critique of ontology, but it is neither the fundamental basis nor a sufficient condition for tolerance.¹ It is rather pragmatism that is both sufficient for and fundamental to Carnap's critique of ontology.

3.1 TOLERANCE AND THE I/E DISTINCTION

As we have seen, tolerance denies that considerations of metaphysical correctness should guide our choices of languages for science. After his move to semantics, the independence of language choice from ontology became Carnap's main focus in his discussions of tolerance and metaphysics. Carnap gives his most sustained discussion of his views on the topic in "Empiricism, Semantics, and Ontology" ('ESO'). There, he defends quantification over abstract objects, for semantical purposes, against nom-

¹Ricketts [69] also argues that the i/e distinction does not ground a successful critique of metaphysics, but his reasons for pessimism are different than mine.

inalistic objections.² Carnap concludes ESO admonishing the nominalist for issuing “dogmatic prohibitions”:

[t]o decree dogmatic prohibitions of certain linguistic forms instead of testing them by their success or failure in practical use, is worse than futile; it is positively harmful because it may obstruct scientific progress. [16, 220-21]

In place of the nominalist’s dogmatic prohibitions, we should take a tolerant approach to choosing an ontology:

Let us grant to those who work in any special field of investigation the freedom to use any form of expression which seems useful to them; the work in the field will sooner or later lead to the elimination of those forms which have no useful function. *Let us be cautious in making assertions and critical in examining them, but tolerant in permitting linguistic forms.* [16, 221]

The approach that Carnap criticizes here is similar to the logicist’s approach discussed in §2.1. The logicist took the formalist’s language to incorrectly characterize the numbers, and wrongly took this fact to eliminate formalistic languages for science from consideration. In his “Replies and Systematic Expositions” [21] in the Schilpp volume devoted to him, Carnap returns to the critique of ontology begun in ESO. He gives the example of the logicians X_1 and X_2 , who are deliberating about which language they should adopt. X_1 , the *moderate platonist*, opts for the language L_1 , in which ‘There are classes of classes’ (or an analogous symbolic formulation) is analytic. He chooses this language “because of its greater wealth in means of expres-

²The paper was a direct response to Nagel [52] and Quine and Goodman [41]. The latter objected to abstract objects on the basis of a “philosophical intuition that cannot be justified by appeal to anything more ultimate” [41, 105]. Nagel held that “the choice of a language explicitly recognizing entities like propositions” or infinitesimals is to be made on the basis of “evidence relevant for affirming with warrant that there are such entities as infinitesimals or propositions” [52, 472]. (Or at least, this seems to have been Carnap’s interpretation of Nagel’s remarks; see Carnap [16, 218], [20, 64].)

sion and means of deduction” [21, 873]. X_2 , the *moderate nominalist*,³ (‘nominalist’ when there is no risk of confusion) denies that classes of classes exist and opts for the language L_2 , in which ‘There are no classes of classes’ is analytic. Carnap explains that he

would object only if [the moderate nominalist] were to say to [the moderate platonist]: “In contrast to you, there is no possibility for me to choose between the two languages [L_1 and L_2]. On the basis of careful considerations I have arrived at the following two ontological results:

(6) There are classes of objects.

(7) There are no classes of classes of objects. [21, 873]

The moderate nominalist’s argument, to which Carnap objects in this passage, is as follows:

(N1) There are no classes of classes.

(N2) L_1 is committed to the existence of classes of classes.

Therefore,

(N3) I cannot choose L_1 as my language for science.

The moderate nominalist’s argument aims to establish that L_1 is incorrect on ontological grounds— L_1 posits objects that, from the moderate nominalist’s point of view, do not exist; L_1 is ontologically committed to objects that are not in the domain of the nominalist’s preferred language L_2 . I will call this particular way in which L_1 appears incorrect to the moderate nominalist *ontological extravagance*. Although Carnap sets out to defend the use of abstract linguistic forms against arguments like the nominalist’s in both ESO and [21], it is clear that he would equally defend the nominalist against analogous platonistic objections to the use of nominal-

³I call X_2 the *moderate nominalist* because his preferred language posits classes. He is not, therefore, a radical nominalist.

istic languages.⁴ The platonist who makes such arguments accuses the nominalist's language of a different kind of incorrectness, which I will call *ontological poverty*. For the nominalist's language to be ontologically impoverished, from the platonist's point of view, is for her (the platonist) to believe that there are objects to which the nominalist cannot refer, and that the nominalist's catalogue of objects is therefore incomplete. When Carnap denies that language choice should be accountable to ontological doctrine, I claim, he is rejecting arguments that move from characterization of a language as incorrect in either of these senses to the conclusion that the language is inadequate for science.

3.2 WHAT IS THE INTERNAL/EXTERNAL DISTINCTION?

I have argued that the aim of Carnap's critique of ontology is to resist arguments like the moderate nominalist's, which take correctness of ontological commitment to bear in a particular way on the choice of a language for science. How does Carnap hope to achieve this aim? Having abandoned the quasi-syntax response discussed in the previous chapter, how does Carnap now respond to the moderate nominalist's argument? His focus in ESO and elsewhere is on the meaninglessness of what he calls 'external questions'. It is natural, therefore, to assume that Carnap's critique of ontology is entirely a matter of his i/e distinction. In this section, I argue that the i/e distinction is just the distinction between sentences that are and sentences that are not translatable into an empiricist language for science; Carnap's assertion that there is such a distinction, and that the external statements are cognitively

⁴In ESO, Carnap notes that the nominalists "may possibly be right" [16, 221], but to be "right", here, would be to construct a sufficiently efficient language that does not quantify over abstract objects.

meaningless, just is, then, his verificationism. My discussion will help to prepare for my argument, in §3.3, that the i/e distinction is neither fundamental to nor sufficient for Carnap’s critique of ontology.

In ESO, Carnap argues that a recognition of “a fundamental distinction between two kinds of questions concerning the existence or reality of entities” [16, 206] is necessary for a clear understanding of such questions. This distinction is the i/e distinction. In order to ask an internal question about the existence of *F*s, we must first adopt a system of linguistic rules, a *linguistic framework*, to govern our *F*-talk. Having adopted an appropriate linguistic framework, the internal question ‘Are there *F*s?’ can be “formulated with the help of the [framework]. 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” [16, 206]. By contrast, a question of existence is “meant in the external sense” if it is “meant absolutely and objectively, i.e., not relative to this or that language” [21, 873].

These characterizations of the i/e distinction suggest that the internal questions are questions of existence that pertain to the truth of a sentence of an empiricist language, whereas the external questions are questions of existence that do not. The internal questions may be answered by either empirical or logical methods, and this suggests that their answers can be translated into an empiricist language for science, i.e., into a language in which every sentence is either analytic or empirical. If this understanding of the internal questions is granted, and if the internal and external questions are to be disjoint and collectively exhaustive of existence questions, as seems to be Carnap’s intention, then when Carnap characterizes the external questions as those that are independent of any language, we must take him to mean that they are independent of any *empiricist* language. There are two other considerations lending support to this interpretation. First, the external questions are surely not

independent of *all* languages; for example, they are surely meant to be sentences of the natural languages in which they are stated. Second, this interpretation of the i/e distinction makes sense of Carnap's claim that the external questions are "pseudo-questions" [16, 209], i.e., cognitively meaningless. As we have seen, Carnap's verificationism holds that a sentence is cognitively meaningful, or truth-apt, if and only if it is translatable into a sentence of an empiricist language.⁵

Carnap believed that philosophers' questions of existence are typically external. The question 'Are there numbers?', in its internal sense, can be answered by simple logic. The answer is therefore so obvious that "nobody... would either assert or seriously consider a negative answer" [16, 209]. "This makes it plausible to assume that those philosophers who treat the question of the existence of numbers as a serious philosophical problem and offer lengthy arguments on either side, do not have in mind the internal question" [16, 209].

The verificationist rejection of external questions as cognitively meaningless is

⁵There is some disagreement about what kind of linguistic apparatus is required to draw the i/e distinction. One point of contention separates Matti Eklund, for whom only a language or language-fragment is required [34, 132], from Chalmers, for whom some kind of controversial "theoretical apparatus" is required [29, 80]; Eklund [35] points out this contrast between his view and Chalmers's. On the interpretation I have just proposed, the i/e distinction can be drawn with respect to any empiricist language.

Carnap's characterization in ESO of linguistic frameworks raises another kind of question about the resources required to construct a framework. Carnap states that the framework for a given kind of abstract object includes a set of variables of a certain type level or order. To adopt the framework of properties, for example, is to allow variables of quantification to occupy predicate positions. Quine argues, on the basis of this account, that Carnap's i/e distinction "is of little concern to us apart from the adoption of something like the theory of types" [59, 209]. By contrast, the internal questions, as I have characterized them, may be posed within empiricist languages regardless of the types or orders they contain. My interpretation is supported by Carnap's [21], where he explicitly drops type level from his account of the i/e distinction. There, he draws the distinction with respect to two languages that contain "one kind of variable, which are not type-restricted" [21, 872].

thus one way in which the i/e distinction figures in a critique of arguments like the nominalist's. According to Marc Alspector-Kelly, Carnap's response to his nominalist critics, such as Quine and Goodman, who "accuse him [Carnap] of Platonistic commitments", was to "[accuse] them back of *a priori* metaphysical intuition-mongering in which no empiricist should indulge" [1, 103]. The intuitions that are off limits to the empiricist are, I take it, pseudo-theses that are neither analytic nor empirical. To rule out such intuitions as cognitively meaningless requires no more than the verificationist rejection of external questions.

There is no doubt that Carnap saw this verificationist criticism of external questions as central to his critique of ontology, and thus to tolerance. However, I want to make two points about the role of the i/e distinction in Carnap's critique of ontology. First, the critique of ontology deriving from the i/e distinction is not fundamental. I have argued that it rests on verificationism, and verificationism, as we saw in the previous chapter, rests on pragmatism. The accusation that external statements are meaningless really amounts to the claim that the means required to formulate them are of no use for scientific inquiry. Second, the Carnapian pragmatist rejects a pattern of decision-making in scientific language choice that cannot be understood entirely in terms of the external questions. I turn to this second point in the next section.

3.3 DOGMATISM, THE INTERNAL/EXTERNAL DISTINCTION, AND PRAGMATISM

Carnap does not, or at least, should not regard reliance on an external premise as the only mistake the moderate nominalist might be making. In his writings on ontology,

Carnap repeatedly criticizes a kind of ontological question of which the external questions are a strict subclass. Carnap voices this criticism when he denies that the introduction of ontologically committal linguistic forms, or “ways of speaking”,

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 justification because it does not imply any assertion of reality. [16, 214]

The problematic “question of reality” referred to here is one whose answer, it is believed, will justify, in a theoretical or cognitive sense, a decision to adopt new ontologically committal linguistic forms. Carnap denies the priority of ontological inquiry over language choice that the question presupposes, regardless of how this inquiry is conducted, i.e., regardless of whether it involves resources that cannot be captured in an empiricist language. The moderate nominalist’s argument, for example, is to be rejected regardless of whether (N1) (‘There are no classes of classes’) is internal or external. Thus, the problematic questions of existence are those that are posed prior to the adoption of a language, and whose answers are believed to constrain the choice of a language. Many questions of this kind will be external, but some will be internal.

While Carnap rarely singles out for criticism internal existence questions that are intended to constrain language choice, in his [21], he explicitly rejects the moderate nominalist’s argument on the internal interpretation of (N1). This suggests that he was to some extent aware that internal statements could be misused in arguments like the moderate nominalist’s. Carnap argues that (N1) of the nominalist’s argument, meant as an internal, analytic claim of a language like L_2

would merely say that in [the moderate nominalist’s universe of discourse] D_2 there are no classes of classes. But this statement is not incompatible with the sentence

(4) [i.e., ‘There are classes of classes’] in L_1 because (4) says that in [the moderate platonist’s] different universe of discourse, D_1 , there are classes of classes. Thus we see that the difference between [the moderate platonist] and [the moderate nominalist] is *not* a difference in *theoretical* beliefs as X_2 seems to think when he makes the pseudo-assertion (7) [i.e., (N1)]; it is merely a *practical* difference in preferences and decisions concerning the acceptance of languages. [21, 873]

This passage shows that Carnap’s rejection of the moderate nominalist’s argument is not conditional on (N1)’s being external. The problematic approach to questions of existence is to take the answers to constrain the choice of a language; such an approach is problematic regardless of whether the question and answer are internal or external.

The passage also suggests an account of what is wrong with the nominalist’s argument on the internal interpretation of (N1). I will delay my assessment of this account until §7.2.2. For now, I want to explore the differing motivations that might lead the moderate nominalist to assert the different versions of (N1), and then propose on Carnap’s behalf an objection to the moderate nominalist’s argument with (N1) construed internally. If (N1) is external, the moderate nominalist’s approach resembles what is sometimes called ‘first philosophy’⁶—the moderate nominalist attempts to establish the incorrectness of a scientific language by means of intuition or insight that is supposedly prior to and unconstrained by science.

If (N1) is internal, on the other hand, then the moderate nominalist’s argument might be motivated by *dogmatism*, i.e., by the doctrine that, when choosing between artificial languages for science, one should, all things being equal, prefer the language that best captures the patterns of reasoning that we currently endorse. These currently endorsed patterns of reasoning may be dispositions toward particular uses of

⁶I use the term in roughly the sense of Quine [62], though my use specifically concerns Carnapian languages for science.

colloquial language, or they may be the rules of an adopted language for science. To return to the moderate nominalist's argument: given the dogmatic desire to preserve elements of the current language, the current use of L_2 provides defeasible reason to reject languages that are committed to classes of classes.

The dogmatist might be motivated by the idea that one's "conception of 'the way things really are' is represented by the language that formalizes [one's] total theory" [68, 196], and that deviations from the current language are therefore likely to take one away from the way things really are.⁷ Or the dogmatist might adopt *Quinean conservatism*, i.e., the doctrine that we should "[favor] the inherited or invented conceptual scheme of one's own previous work" [58, 20] over novel conceptual schemes, all things being equal. According to Quinean conservatism, therefore, when forced to make an alteration to our current scientific framework, we should aim to make the most minimal alteration possible. Quine's stated views on the criteria of language choice do not conflict with Carnap's pragmatism, as Quine takes simplicity to trump conservatism [58, 20-21]. For this reason, Quine would only call on conservatism to resolve choices between languages that are equally good from the Carnapian pragmatist's point of view.

I believe that dogmatism is prevalent in contemporary metaphysics. And in its most prevalent form, it conflicts with Carnap's pragmatism. For example, Theodore Sider's favored methodology in metaphysics includes dogmatism as a component:

[o]ne approaches metaphysical inquiry with a number of beliefs. Many of these will not trace back to empirical beliefs, at least not in any direct way. These beliefs may be particular, as for example the belief that I was once a young boy, or they may be more general and theoretical, for example the belief that identity is transitive.

⁷Ricketts [68, 196] points out that this dogmatist criterion of language correctness cannot serve in a non-question-begging objection to tolerance. This may be true, but it is consistent with my argument. I claim that dogmatism opens a gap between the i/e distinction and tolerance; I am not using dogmatism to argue that tolerance is wrong.

One then develops a theory preserving as many of these ordinary beliefs as possible, while remaining consistent with science. [75, xvi]

(Sider elsewhere emphasizes that the match between a metaphysical theory and ordinary beliefs is one desideratum among many, and that typically it should not play a “dominant” role in our assessment of the theory [76, 385]. Sider leaves open whether and under what circumstances match with current belief can outweigh other desiderata.) David Manley [50, 4] characterizes this methodology as “mainstream metaphysics”.⁸ On this view, match with ordinary belief epistemically constrains the adoption of a metaphysical doctrine, and in this way plays a cognitive role in the adoption of such a doctrine. Where theories are construed as formal languages, as in Carnap’s view, the mainstream metaphysician would hold that the adoption of such a language should be constrained by match with ordinary belief.

Carnap’s pragmatism provides him with a straightforward objection to dogmatism, and to the version of the nominalist’s argument that presupposes dogmatism: given the aims for which the Carnapian uses scientific language, the moderate nominalist’s argument is invalid. If the controversial theorem of L_1 were incorrect, from the moderate nominalist’s perspective, then at the cost of an incorrect theorem, the moderate platonist’s language would receive a “greater wealth in means of expression and deduction” [21, 873] than the nominalist’s. Indeed, from the Carnapian perspective, the incorrect stipulation is not, in and of itself, a cost; the correctness of a language’s postulates from our current perspective is not even among the properties that, like simplicity, etc., are relevant to choosing a language. Having correct stipulations does not, in and of itself, make a language a more effective instrument for describing or deriving observation reports. In short, in and of itself, the preservation

⁸Manley adds the caveats that the methodology described by Sider has “only come to ascendancy lately and is still widely challenged” [50, 4].

of current practices does not make a language a more effective deductive instrument for science.

Now it is true that we are frequently more *familiar* with a language in so far as it matches our current practices, and this kind of familiarity will count in favor of the language from the perspective of Carnap's pragmatism. We will, in general, be better able to derive predictions within a familiar language, within which we are accustomed to performing derivations. However, a preference for familiar languages is distinct from dogmatism. Dogmatism, unlike a preference for familiarity, advocates preserving current practice even in cases where we are equally familiar with a deviant set of rules. For example, a nominalist may employ a system of mereological axioms in place of arithmetic, and yet be, as a result of her formal training, as familiar with first order arithmetic as with mereology. The dogmatist will maintain that a mereological language's match with the nominalist's current practice provides a defeasible reason for the nominalist to employ it. For the Carnapian pragmatist, since the nominalist is no more familiar with the mereological than with the arithmetical language, and since match with her current practice does not, therefore, secure any pragmatic advantage, the match with current practice does not provide a defeasible reason for the nominalist to use the mereological language.

Carnap does not explicitly reject dogmatism. However, the following remarks in the Forward to the *Syntax* are suggestive:

[u]p 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 the 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'. [11, xiv]

The first attempts to cast the ship of logic off from the *terra firma* of the classical forms were certainly bold ones, considered from the historical point of view. But they were hampered by the striving after ‘correctness’. Now, however, [with the adoption of the Principle of Tolerance] that impediment has been overcome, and before us lies the boundless ocean of unlimited possibilities. [11, xv]

Here Carnap criticizes the thesis that deviations from the current language form require some special justification. Such a criticism suggests, in contrast to dogmatism, that match with the adopted language does not provide a defeasible justification that must be outweighed by some competing consideration. It is also worth noting that, though Carnap frequently discusses desiderata for language choice, he never includes match with the current language among them.⁹

Carus is, to my knowledge, the only commentator to note the anti-dogmatic element in Carnap’s thought. He describes a “radical↔conservative axis” “representing the degree of willingness to depart from our inherited practices and the conceptual schemes embedded in them” [27, 346], and locates Carnap on the radical end of the spectrum. Carus glosses Carnap’s radicalism as follows:

[f]rom his earliest writings, it was Carnap’s deep conviction that human kind had a responsibility to choose and shape its own institutions—including its scientific language and scientific practices—rather than to accept them passively.... Philosophy, for him, including especially the entire program of explication, was highest-level linguistic or conceptual engineering, the planning and optimization of the future of the species. [27, 349]

In his elaborations of Carnap’s radicalism, Carus focuses on Carnap’s rejection of metaphysics [27, 349] and of constraints deriving from “the modalities of sense perception and, intimately bound up with them, the categories of everyday common sense” [28, 124]. My claim is that Carnap’s anti-dogmatism rejects, in addition, the constraint of preserving current scientific practice.

⁹Thanks to Nuel Belnap for pointing this out to me.

I claimed that dogmatism might motivate the moderate nominalist's assertion of (N1) in its internal sense as part of the argument (N1)-(N3). The idea is that, given the dogmatic desire to preserve elements of the current language, the moderate nominalist's current use of a language in which it is analytic that there are no classes of classes gives him a defeasible reason to reject languages that are committed to classes of classes. Hence his conclusion that he cannot choose L_1 , which is so committed.

Thus the two strands of Carnap's critique of ontology—the anti-conservatism with which he objects to (N1) in its internal sense and the verificationism with which he objects to (N1) in its external sense—both trace back to his pragmatism.

I should emphasize that Carnap's pragmatist critique of ontology is unlikely to persuade the committed ontologist. What Ricketts says of empiricism in the following passage holds also of Carnap's pragmatism:

[e]mpiricism is not a theoretical matter; there is no right or wrong to it, for in logic there are no morals. Carnap's advocacy is backed up only by his endorsement of the evidential standards, the language use, that he believes typify science. It is in this sense, then, that Carnap's application of the criticisms of "pseudo-problems" and "nonsense" are ultimately *ad hominem*. [68, 195]

My suggestion is that Carnap's pragmatism is the underlying scientific conception with respect to which his applications of 'pseudo-problem' and 'nonsense' are *ad hominem*—when Carnap characterizes something as a pseudo-problem, he hopes to show his fellow Carnapian pragmatists that they are committed to rejecting it.

3.4 PRAGMATISM, INSTRUMENTALISM, CONSTRUCTIVE EMPIRICISM

Carnap did not describe himself as a ‘pragmatist’. However, the term recommends itself for two reasons. First, while Carnap’s pragmatism is significantly different from most forms of American pragmatism it also shares some core ideas with the latter. An example of an important tenet of American pragmatism that does not figure in Carnap’s philosophy is the denial of the fact-value distinction. For a discussion of this and other contrasts, see Alan Richardson [66]. On the other hand, the pragmatists’ idea that truth is in some sense a practical matter bears affinities to the generic pragmatism of which Carnap’s pragmatism is a determination. Thus C. I. Lewis regards theoretical virtues like “intellectual consistency and economy, completeness and comprehension, and simplicity of interpretation” as “important ends” whose centrality in theory evaluation is due to their role in the “long-run satisfaction of our needs in general” [49, 267]. Of course, even this conception differs from Carnap’s in numerous respects. Most notably, Lewis does not apply these pragmatic considerations to the choice of an artificial language for science, he does not see the efficient derivation of predictions as the fundamental aim in science, he does not extend the pragmatic criterion to the philosophy of perception, and he does not derive the critique of metaphysics to which Carnap’s pragmatism gives rise.

A second reason for my choice of terminology is its affinity with a different pragmatist strand in the philosophy of science. Scheffler characterizes the “pragmatic attitude” [74, 182] as the view according to which the theoretical terms of a scientific theory are meaningful, and the sentences containing them truth-apt, regardless of whether they are reducible to (i.e., eliminable in favor of) observation terms. The pragmatist holds this position because she understands meaningfulness in terms of

“function, utility, and system in science.... rather than as independently specifiable” [74, 183-4].

The Carnapian pragmatist, like the pragmatist described by Scheffler, does not require the complete reducibility, in the sense of eliminability, of the theoretical language to the observational language. Complete reducibility in this sense is not necessary for language to fulfill its pragmatic function: an irreducible theoretical language can contribute to the derivation of observation reports. And Carnap’s stated criteria of empirical meaningfulness leave room for such irreducible theoretical languages. If we are to introduce a predicate into the theoretical language, Carnap, in “Testability and Meaning”, requires only that we be able to identify observable conditions under which we can infer the presence or absence of the property signified by the predicate.¹⁰ The criterion of empirical significance that Carnap defines later in “The Methodological Character of Theoretical Terms” reckons a theoretical term as empirically meaningful if it occurs in a sentence that, together with “correspondence rules” and other sentences antecedently certified as empirically meaningful, entails an observation statement.

Having located Carnap’s with respect to some other understandings of pragmatism, it may be helpful at this point to do the same with respect to a recent and influential position in the philosophy of science that bears important similarities to Carnap’s pragmatism, *viz.* van Fraassen’s constructive empiricism.

Van Fraassen’s constructive empiricism has taken up the empiricist mantle in the wake of logical empiricism’s decline. But, as van Fraassen emphasizes, while constructive empiricism is in important respects a successor to logical empiricism, it is

¹⁰Carnap [9, §8] calls the theoretical property “reducible” to the observable ones when such conditions can be stated. This usage of ‘reduction’, unlike the contemporary one, does not involve eliminability.

likewise in important respects a result of rejecting certain fundamental assumptions of logical empiricism. My interpretation of Carnap’s pragmatism, which, I would argue, is the paradigmatic form of logical empiricism, however, may seem to erase some of the differences between the two views. I will now locate the remaining differences. I argue that Carnap is not, contrary to van Fraassen’s contention, committed to construing scientific theories non-literally. Rather, constructive empiricism and logical empiricism differ (i) in the senses in which they claim science to *aim* for empirical adequacy, and (ii) on whether theories should be understood syntactically or semantically. Van Fraassen’s most most significant objection takes aim at the logical empiricists’ attempts to distinguish between observation and theory on the basis of syntax. I discuss and respond to this objection in §4.3.

The central contention of constructive empiricism is that “[s]cience aims to give us theories which are empirically adequate; and acceptance of a theory involves as belief only that it is empirically adequate” [78, 12] (quoted in [51]). In particular, on this view, acceptance of a scientific theory does not involve belief in its truth.

The most notable similarity between constructive empiricism and Carnapian pragmatism is the way in which both reject what van Fraassen calls ‘scientific realism’, i.e., the doctrine that “[s]cience aims to give us, in its theories, a literally true story of what the world is like; and acceptance of a scientific theory involves the belief that it is true” [78, 8]; quoted in [51]. Both reject the first conjunct of scientific realism, i.e. the thesis that science aims at truth. And they deny this thesis not because they deny that scientific theories *are* true or false, but rather because they deny that the truth of a theory bears on its acceptability. For both views, empirical adequacy, instead of truth, is the primary aim of science.

But whereas the constructive empiricist rejects the second conjunct of scientific realism—the thesis that acceptance of a scientific theory involves belief in its truth—

the Carnapian pragmatist need not. The constructive empiricist considers statements concerning the empirical adequacy of a given scientific theory to be legitimate objects of belief and assertion, but does not regard the theory itself as believable or assertible; if the theory were assertible, then, presumably, its truth would also be, as the two assertions are equivalent. There is nothing in Carnapian pragmatism that entails such a conception of belief and assertion. It is open to the Carnapian to hold that assertion and belief are possible within a language for science and that the postulates, as well as certain synthetic though highly empirically confirmed sentences, are to be believed or asserted by those who adopt the language. And if such a sentence is to be asserted, then so is its truth in the language. But, again, the truth that in this way is held to characterize the sentences of a chosen language need not serve as an aim around which to orient inquiry. For the Carnapian pragmatist, we decide on a language by considering pragmatic desiderata. Having adopted a given language, we will then be willing to assert its postulates, and to assert them to be true.

I turn now to two further differences between Carnap's pragmatism and constructive empiricism.

Literalness. Van Fraassen claims that the logical empiricists, though they accepted that scientific theories are true or false, deny that they are *literally* so. He argues as follows:

On the positivists' interpretation of science, theoretical terms have meaning only through their connection with the observable. Hence they hold that two theories may in fact *say the same thing* although in form they contradict each other. (Perhaps the one says that all matter consists of atoms, while the other postulates instead a universal continuous medium; they will say the same thing nevertheless if they agree in their observable consequences, according to the positivists.) But two theories which contradict each other in such a way can 'really' be saying the same thing only if they are not literally construed. [78, 10-11]

This argument presupposes that the logical empiricists accepted a version of verificationism according to which, if two consistent theories have the same observable consequences, then they “say the same thing”. The problem with van Fraassen’s argument is that, though some logical empiricists may have accepted this kind of verificationism, most did not, particularly as their views matured. Kaplan aptly describes this evolution in the logical positivists’ verificationism:

The connection [asserted by verificationists to hold between cognitive meaning and experience], however, appears to have weakened with age. When the thesis was first suggested, as part of a program to eradicate metaphysics (or at least that part of it which was considered unconnected), the required connection amounted to an actual *identification* of cognitive meanings with certain experiences. But slogans like, ‘the meaning of a sentence *is* the method of verification’ have gradually faded to requests that ‘(meaningful concepts) be logically connectible with the terms of a suitably chosen observation basis’ [48, 169].

But if logical empiricists abandoned the claim that the content of a statement is to be identified with its confirming experiences, there is no reason to ascribe to them, as van Fraassen does, the view that theories “say the same thing” if their observational consequences are the same.

One might still worry that, even if Carnap’s brand of verificationism is not formulated as an identification of content with observable consequences, it nonetheless commits him to the latter. In order to address this worry, I will now explain two of the principal conceptions of content that Carnap developed in the course of his career. Neither of these conceptions identify content with observable consequences. Carnap’s first major account of content is set out in the *Syntax*. There, the content of a sentence is taken to be the class of its *synthetic* consequences [11, §49], which includes consequences in the theoretical language, and which therefore contains as a subclass the sentence’s observable consequences. Theories may therefore, on this ac-

count, agree in their observable consequences and yet, in so far as they entail different sentences in the theoretical language, differ in their content. And theories with different theoretical postulates will in most cases—including, presumably, van Fraassen’s example of the theory of atoms and the theory of the continuous medium—differ in their theoretical consequences.

The second conception of content I wish to discuss is presented in *Meaning and Necessity*. In this work, Carnap avails himself of richer semantic resources in his analysis of meaning. He calls his finest grained conception of content developed there *intensional isomorphism*; two expressions are intensionally isomorphic just in case they are composed of analytically equivalent sub-expressions that are arranged in the same way, where sameness of arrangement does not require that occurrence at the same positions. For example, ‘ $2 + 5$ ’ and ‘ $\text{sum}(\text{II}, \text{V})$ ’ are intensionally isomorphic because the difference in position between ‘+’ and ‘sum’ is an “inessential syntactic device” [17, 57]. Carnap’s notion of intensional isomorphism could be used to explicate sameness of “what is said” by theories by taking the theory T_1 to say the same as theory T_2 iff every sentence of T_1 is intensionally isomorphic to a sentence of T_2 , and *vice versa*. Clearly, two theories could have the same observable consequences and yet fail to be intensionally isomorphic. With respect to van Fraassen’s example, the concept of an atom, invoked in the one theory, is not analytically equivalent to any concept invoked in the theory of the continuous medium; and all of this is consistent with the hypothesis that they have the same observable consequences.

It is not my intent to advocate either of Carnap’s accounts of content. Rather, I hope to have shown that his verificationist criterion of meaning, at least as he understands it, leaves him with a variety of resources with which to analyze the content of theories. On his two primary accounts, empirically equivalent theories need not say the same thing. Therefore, van Fraassen’s argument for the claim that verification-

ists must interpret scientific theories non-literally rests on a false presupposition.¹¹

The Aim of Science. The constructive empiricist and the Carnapian pragmatist see empirical adequacy, and not truth, as the primary aim of science. However, they mean quite different things when they talk about science’s “having an aim”.

[T]he constructive empiricist distinguishes between the aim of an individual scientist or group of scientists (which may be fame, glory, or what have you) and the aim of science itself. The aim of science determines what counts as success in the enterprise of science as such [78, 8]. Because the constructive empiricist does not identify the aim of science with whatever goals the majority of scientists may have, he denies that constructive empiricism is a thesis in sociology subject to the kind of empirical confirmation or disconfirmation any scientific thesis faces. Instead, constructive empiricism is to be understood as a philosophical description of science that seeks to explain how an empiricist can regard the activity of science as consistent with the empiricist’s own standards of rational activity. Like the interpretation of any human activity, constructive empiricism is constrained by the “text” of the scientific activity it interprets. Within those constraints, it succeeds or fails according to its ability to provide an interpretation of science that contributes to our understanding of science, making intelligible to us various elements of its practice. [51]

Constructive empiricism aims to accurately describe scientific practice while making various aspects of science intelligible. This, we are told, is to be contrasted with a sociological study of the aims of individual or communities of scientists.

In contrast to constructive empiricism, Carnap’s pragmatism, on my interpretation, does not seek to describe “the aim of science itself”. Nor is it a sociological theory. Rather, it is a preference with which one may approach the logic of science, i.e., the choice of Carnapian languages for science. The Carnapian recognizes the adoption of empirical adequacy as the aim for science to be a practical, and not a theoretical matter, a question of preference and not of fact.

¹¹Soames [77] also takes the logical empiricists’ verificationism to imply that empirically equivalent theories are in some sense equivalent in meaning.

Because of their distinct statuses, Carnap's pragmatism and constructive empiricism are supported and undermined by different kinds of considerations. Since Carnap's pragmatism is not an attempt at accurate description or interpretation—either of the sociological or of the philosophical kind—of scientific practice, it is less imperative that it be consistent with the scientific “text”, i.e., with the observed behavior of the scientific community. If the scientific community on the whole turned out to be dogmatic—if theories continued to dominate research agendas despite being less expedient and no more empirically adequate or familiar than an alternative—this would not give the Carnapian any reason to include dogmatism among the aims for which she uses languages for science (though it should, perhaps, make her cautious about rejecting such an aim). The constructive empiricist, by contrast, wants to give an accurate philosophical description, or interpretation, of actual scientific practice. Therefore, if the scientific community turned out to be dogmatic, the constructive empiricist would have reason to recognize the minimization of theory revisions as an aim of science itself.

3.5 CONCLUSION

I have argued in this chapter that Carnap's tolerance survives his embrace of Tarskian semantics and his consequent abandonment of his quasi-syntax conception of philosophy. With this move, however, the Principle of Tolerance comes to depend more directly on verificationism, which Carnap now articulates in the form of the i/e distinction, and on pragmatism. Pragmatism's contribution to Carnap's tolerant critique of ontology goes beyond grounding the i/e distinction; in addition, it provides Carnap with a response to the dogmatist, who argues intolerantly against alterna-

tive languages while relying only on internal statements of her language for science. Having argued these point, I concluded the chapter by clarifying the similarities and dissimilarities between Carnap's pragmatism, on the one hand, and other forms of pragmatism, or van Fraassen's constructive empiricism, on the other.

4.0 THE OBSERVATION LANGUAGE

4.1 INTRODUCTION

Carnap's pragmatism holds that the purpose of scientific language is to facilitate derivations of factual knowledge, i.e., of observation sentences. Pragmatism thus presupposes that a language for science can be divided into reports of observation and statements of more abstract theory. I believe that we should expect an explanation of the distinction between observation and theory that is appealed to here. And Carnap should share this expectation, particularly given his stringency with regard to the admission of concepts into the language for science. But can a satisfactory explanation be given? One might think not, in light of the objections of Hanson, Putnam, and [78] to the logical empiricists' conception of observation.

I will argue that Carnap's mature conception of observation, as presented in "Testability and Meaning", is suitable for his pragmatism. I will also defend this conception against van Fraassen's objections to the distinction between observation and theoretical language. Finally, I will argue that the "Testability and Meaning" ('TM') conception of observation language is largely compatible with Carnap's attempted resolution of the Vienna Circle's protocol sentence debate in "On Protocol Sentences". In that paper, Carnap attempts to resolve the debate between phenom-

analists and physicalists within the Vienna Circle by claiming that the phenomenal and physicalist observation languages are both legitimate observation languages that are to be evaluated on the basis of their “practical utility” [23, 458]. There is a natural concern that the TM account does not count all of the languages considered by Carnap as legitimate observation languages. I show that this worry is misplaced in regard to the phenomenal observation language and Popper’s physicalist proposal, as these are understood by Carnap. And while some of Neurath’s peripheral suggestions concerning the observation language conflict with the TM account, there is sufficient overlap between the latter and the core of Neurath’s views to ground the kind of critique Carnap attempted to provide.

4.2 THE “TESTABILITY AND MEANING” ACCOUNT OF OBSERVATION LANGUAGE

Carnap’s most thorough discussion of the observation language, to which all other components of language are auxiliary, occurs in TM. His later [22] articulates essentially the same view. In TM, Carnap does not attempt a precise definition of observability, offering instead “rough explanations”, which are to make the meanings of ‘observable’ and related terms “clear enough for present purposes” [9, 454], i.e., for the purposes of defining methodological concepts like ‘testable’. His explanations are also adequate, I believe, for the purposes of his principle of pragmatism. Carnap’s account of observation centers in particular around the following explanation:

Explanation 1. A predicate ‘P’ of a language L is called *observable* for an organism (e.g. a person) N, if, for suitable arguments, e.g. ‘b’, N is able under suitable circumstances to come to a decision with the help of few observations about a full

sentence, say ‘P(b)’, i.e. to a confirmation of either ‘P(b)’ or ‘ \sim P(b)’ of such a high degree that he will either accept or reject ‘P(b)’. [9, 454-55]

Carnap then adds the further condition on ‘P’s being observable for N that N must be willing to accept or reject ‘P(b)’ “quickly” [9, 455], i.e., on the basis of few inferences [22, 226].

I will illustrate the resulting account of observation language through its application to the question of whether the use of measuring instruments allows us to observe otherwise unobservable objects. Carnap [22, 226] notes that physicists are inclined to count terms as observational if we can apply them with the help of *simple* instruments like a balance scale, a thermometer, or an ammeter. And he believes that this approach to the observation vocabulary is legitimate. On the other hand, if N must rely on advanced, *complex* instruments in order to come to a decision concerning the application of ‘P’, then P is not observational for N. Carnap’s earlier remarks in “Testability and Meaning” are naturally read in this light:

the predicate ‘an electric field of such and such an amount’ is not observable to anybody, because, although we know how to test a full sentence of this predicate, we cannot do it directly, i.e. by a few observations; we have to apply certain instruments and hence to make a great many preliminary observations in order to find out whether the things before us are instruments of the kind required. [9, 455]

I believe that we should take Carnap to be referring here to complex instruments whose reliability can only be established through substantial observation and inference.

Carnap [22] contrasts the physicist’s demarcation of the observational vocabulary with the philosopher’s. To the philosopher envisioned by Carnap, “‘observable’ has a very narrow meaning”, applying only to “properties directly perceived by the senses” such as blue, hard, and hot [22, 225]. If an object or property can be detected only

with the help of instruments, then the philosopher Carnap has in mind would not count it as observable.

Carnap maintains that neither the physicist nor the philosopher is uniquely correct about what is observable. According to Explanation 1, ‘P’ is more observational for N the fewer observations and inferences are required for N to come to a decision regarding ‘P(b)’. There is therefore “a continuum which starts with direct sensory observations and proceeds to enormously complex, indirect methods of observation. Obviously no sharp line can be drawn across this continuum; it is a matter of degree” [22, 226]. Or at least, colloquial use does not exhibit sharp boundaries between ‘observational’ and ‘theoretical’. However, this is a point at which the logician of science’s artificial language systems can increase the precision of scientific language by introducing an “arbitrary” [9, 455] cut-off point. This simplification does not make the notion of observability any less suited to carry out the work Carnap assigns it, *viz.* serving in accounts of empirical significance or of other methodological notions such as testability (see Carnap [9, 455]).

The determination of whether a given predicate is observational thus falls to some “biological or psychological theory of language as a kind of human behavior, and especially as a kind of reaction to observations” [9, 454] [quoted in [71, 205]]. It is through the empirical study of language users that we would determine whether they accept or reject various predications quickly enough and on the basis of a suitably small class of observations for the predicate to count as observational.

The TM account of observation language meets the Carnapian pragmatist’s need, discussed above, for a distinction between observation and theoretical language. Pragmatism characterizes the aims of scientific language in terms of the derivation of observation sentences. Having adopted the TM account, we clarify this aim as that of deducing sentences composed of terms that can be quickly applied on the basis of

few observations.

But what reason is there to understand observation in this way? Are alternative conceptions incorrect?¹ And if so, is the TM account not the kind of metaphysics that the Carnapian pragmatist means to eschew? My proposal for the Carnapian pragmatist is that she appeal to her pragmatism in order to motivate the TM account that underlies it. One might object to this bootstrapping gambit in the following way. We cannot even formulate Carnapian pragmatism without an account of the theory/observation distinction already in place; pragmatism is the proposal to use languages for science in order to inferentially manipulate observation reports. But the notion of an observation report appealed to here presupposes a distinction between observation and theory. And since pragmatism in this way presupposes the distinction, we cannot appeal directly to pragmatism to justify a particular way of drawing the distinction.²

Thomas Ricketts (personal communication) has suggested a defense of the bootstrapping approach to justifying the TM account through pragmatism. The Carnapian begins with an inchoate pragmatism; she is inclined to view scientific language as an instrument for the deduction of observation reports, but she has a still vague, pre-theoretical understanding of what an observation report is. She wishes to make this inchoate idea precise, and considers a variety of options. Her central desideratum is that the notion of observation language be endorsed by the resulting (relatively) precisified pragmatism. So if the TM account enjoys a decisive advantage over alternative conceptions, it is its provision of the most coherent overall pragmatism.³

¹This question was put to me by James Shaw.

²This objection was put to me by Mark Wilson.

³As James Shaw has pointed out to me, this response is in line with Carnap's general view of the relationship between pragmatism and the observation language. Above, I quoted the following

The choice of a cut-off along the observationality continuum, which sets up a dyadic ‘observable’ predicate, requires a similar kind of bootstrapping. Prior to the choice of a cut-off, we have no clearly defined observation language, and therefore, no precise statement of the Carnapian pragmatist’s aims in science; again, we have only a kind of inchoate pragmatism. And we must again anticipate the consequences of choosing a particular cut-off, including the expediency, empirical adequacy, and intersubjectivity of the resulting language, and then choose the cut-off that best realizes these values. Disagreements about where to draw the cut-off are in this sense pragmatic. Unfortunately, the pragmatic desiderata with which such disputes will be settled are less precise than those that come into play after the adoption of a cut-off point and a resulting precisification of pragmatism.

I take it that a general conception of observation language of the kind provided by TM, in contrast to particular postulates for structuring the observation language, will itself make at most a small contribution to the derivation of observation reports within our language for science. So what kind of pragmatic considerations might recommend a general criterion like Explanation 1? Recall (§2.5) that, according to the Carnapian pragmatist, the choice of an observation language is governed by criteria such as empirical adequacy, intersubjectivity, and expediency. The TM account could plausibly be licensed by these criteria: the fewer inferences and observations are required to apply the term—the better the term accords with Explanation 1—the more empirically adequate, intersubjective, and expedient the term is likely to be,

passage:

[exact characterizations of the protocol sentences] are to be understood as suggestions for postulates; the task consists in investigating the consequences of these various possible postulations and in testing their practical utility. [23, 458]

On this view, pragmatism is used to evaluate proposals for structuring the protocol language and is thus, at least in this vague form, prior to the choice of a particular protocol language.

all things being equal.⁴

4.3 VAN FRAASSEN'S OBJECTIONS

The Carnapian pragmatist's account of observation is among the targets of van Fraassen's objections to logical empiricism's syntactic conception of scientific theories. Van Fraassen believes that the distinction between observation and theory cannot be drawn syntactically, that a language for science cannot be separated into observational and theoretical sub-languages.⁵ He advances two objections to the syntactic conception of the theory observation/distinction.

Van Fraassen attributes the first objection to Grover Maxwell. It holds that our observational terms are "theory-laden", that what we observe, or what we attend to in our observations, is a function not only of what is before our eyes, so to speak, but also of which theory we accept. "The way we talk, and scientists talk, is guided by the pictures provided by previously accepted theories.... Hygienic reconstructions of language such as the positivists envisaged are simply not on" [78, 14].

This argument assumes that a term cannot count as observational if it is theory-laden. I see no reason to accept this assumption. Certainly, it is not implied by Explanation 1. The plausible thought behind Explanation 1 is that we are able to

⁴It seems to me that the following alternative to the TM account is worth exploring. Instead of justifying the TM account by appeal to the pragmatist's criteria of empirical adequacy, intersubjectivity, and expediency, we could appeal directly to these criteria in determining whether, or to what extent, an expression is observational. This would amount to taking a term to be observational to the extent that it is empirically adequate, intersubjective, and expedient.

⁵Van Fraassen does not deny that there is a distinction between observables and unobservables; he merely denies that there is a corresponding distinction between expressions in a language. His rejection of the syntactic conception of the distinction between observables and unobservables leads him to adopt his model-theoretic alternative.

apply some predicates with relatively little inference and on the basis of relatively few observations, and that these predicates are naturally considered observational. It is no objection to this view to point out that such predicates are theory-laden in the sense indicated by van Fraassen. I suspect that the more theory-laden a term, the further along the inferential side of Carnap's observational-theoretical continuum it will be. But this does not imply that such terms will be *too* far along the continuum, for our purposes, to count as observational. Nothing Carnap has said requires us to draw the cut-off line in such a way as to exclude all theory-laden terms.

Van Fraassen might reply that if it is conceded that the observational vocabulary is theory-laden, then there are no grounds for privileging the observation vocabulary over the theoretical vocabulary.⁶ There are at least two responses to this reply that are available to the Carnapian pragmatist. First, we are likely to have a special interest in predicates that we can apply *quickly*, on the basis of few observations and inferences, and that are part of an empirically adequate theory. Such predicates will be useful in ordinary life, playing the practical role that intuitively observational concepts are supposed to play.

The second response makes draws on a view Scheffler calls *instrumentalism*. The core thesis of instrumentalism is that the observation language is *intuitively clear* [74, 187]. For the instrumentalist, the theoretical language is meaningless because it is irreducible to observational language and is not itself intuitively clear in the same way. The Carnapian pragmatist, in contrast to the instrumentalist, denies that intuitive clarity is necessary for cognitive significance; she regards the theoretical language as cognitively meaningful even if it is intuitively unclear. She can, however, adopt the instrumentalist's core thesis and maintain that the observation language's intuitive clarity is a reason to privilege it, though she privileges it methodologically and not

⁶James Shaw suggested this response on behalf of van Fraassen.

semantically. Of course, this response presupposes that the same term may be both theory-ladenness and intuitively clear. But this presupposition is apt; if observation is as thoroughly theory-laden as is often maintained, then many observational concepts are both theory-laden and intuitively clear. For example, the concept of an apple is plausibly theory-laden, but is nonetheless also as good a candidate for intuitive clarity as any other concept. It is worth noting in this connection that predicates meeting the criteria set out in the TM account are likely to be intuitively clear, though I cannot presently demonstrate that they are in any way exceptionally so. I should also note that this response, to be fully satisfactory, would require an account of intuitive clarity; unfortunately, I do not presently have such an account to offer.

The second objection to the syntactic approach considered by van Fraassen is original to *The Scientific Image*. I quote the argument in full.

The empirical import of a theory cannot be isolated in this syntactical fashion, by drawing a distinction among theorems in terms of vocabulary. If that could be done, T/E [the “set of testable, or observational, consequences” of theory T] would say exactly what T says about what is observable and what it is like, and nothing more. But any unobservable entity will differ from the observable ones in the way it systematically lacks observable characteristics. As long as we do not abjure negation, therefore, we shall be able to state in the observational vocabulary (however conceived) that there are unobservable entities, and, to some extent, what they are like. The quantum theory, Copenhagen version, implies that there are things which sometimes have a position in space, and sometimes have not. This consequence I have just stated without using a single theoretical term. Newton’s theory implies that there is something (to wit, Absolute Space) which neither has a position nor occupies a volume. Such consequences are by no stretch of the imagination about what there is in the observable world, nor about what any observable thing is like. The reduced theory T/E is not a description of part of the world described by T ; rather, T/E is, in a hobbled and hamstrung fashion, the description by T of everything. [78, 54-55]

Van Fraassen thus argues as follows:

- (1) There are unobservable objects that have no observable properties. In particular,

the unobservable object a (Absolute Space) lacks the observable properties P and Q (having a position and occupying a volume). That is, $\sim Pa \wedge \sim Qa$.

Therefore, quantifying into the ‘ a ’ position,

(2) $\exists x(\sim Px \wedge \sim Qx)$.

(3) (2) describes, or is about, the unobservable a , but is stated using only the observational predicates ‘ P ’ and ‘ Q ’, the quantifier, and the negation symbol; (2) thus belongs to the observation language.

Therefore, from (1) and (3)

(4) There are sentences of the observation language that describe unobservables. Indeed, the observation language contains descriptions of everything.

The problem for Carnap that this argument brings out is that the distinction between observational and theoretical, at the level of predicates, does not yield an adequate observational/theoretical distinction for sentences. ‘There is something with neither position nor volume’ is composed of observational terms, but it does not report the kind of observation that we should take to confirm or disconfirm theories—the statement should not appear on a scientist’s record of her observations and thereby empirically confirm or disconfirm theories.⁷

James Shaw (personal communication) suggested that the Carnapian, in response to this objection, could deny that observationality is compositional. And he pointed out that this response is motivated by the TM account of observation language. A sentence, made up of two predicates that, individually, meet the criterion stated in Explanation 1, might not itself meet an analogue of the criterion for sentences. This seems to be the case with van Fraassen’s ‘ $\exists x(\sim Px \wedge \sim Qx)$ ’: while both predicates are individually observable, in general, one will not assent to either the sentence or

⁷Thanks to James Shaw for helping me to see the force of the objection.

its negation on the basis of few observations and inferences. By thus imposing a criterion of observationality on sentences, in addition to the criterion for predicates, one might hope to exclude the problematic sentence from the observation language.

A worry about this approach is raised by the potential existence of sentences that are (i) composed of observational terms; (ii) not themselves observational; and (iii) not themselves empirically significant unless observational. On the proposal under consideration, such a sentence would be cognitively meaningless, according to verificationism, in spite of being composed of individually cognitively meaningful terms. For example, suppose that the predicates ' F ' and ' G ' are observational, but that ' $\forall x(Fx \rightarrow Gx)$ ' is not, and that it does not, together with the appropriate accompanying theoretical postulates and correspondence rules, imply an observation report. This would be an unwelcome result; if F and G are legitimate concepts, then presumably there is a fact of the matter concerning whether everything that's an F is a G . It's one thing to maintain that observationality is not compositional; it's another to hold that cognitive meaningfulness isn't.

Luckily, this problem admits of a simple remedy. We need merely extend the class of empirically significant sentences to include non-observational sentences composed of observable predicates. And this can be done by adding to the definition of empirical significance (§5.1) a further clause stating that any sentence composed of observational or logical terms is empirically significant; we simply re-allocate, by fiat, the sentences meeting (i)-(iii) from the class of observational sentences to the class of empirically significant (but non-observational) sentences.

4.4 CARNAP'S CRITIQUE OF THE PROTOCOL SENTENCE DEBATE

I turn now to a different kind of challenge to the TM account of observation. The challenge is to show that the TM account can satisfy Carnap's philosophical ambitions with regard to the protocol sentence debate, i.e., his view that disputes about the "correct" form of observation report are misguided in much the same way as are disputes about the "correct" account of numbers.

I will begin with a brief overview of the protocol sentence debate. The various members of the Vienna Circle all presupposed a distinction between observation and theoretical language (or "protocol" and "system" language). They disagreed about various aspects of the observation language. Disagreements on this issue between Carnap, Neurath, and Moritz Schlick came to the fore through several exchanges that took place in the early 1930's. These exchanges constitute the protocol sentence debate. The disagreements concerned answers to the following questions:

- What kinds expressions should be included in the observation language?
- What structure should sentences of the observation language have?
- Can observation sentences be revised in light of the accumulation of further observational evidence?
- How should the observation language relate to the theoretical language?

Carnap [8, 46-47] considers four kinds of *phenomenal* observation language:⁸

⁸Carnap notes that the languages he discusses are typically called 'languages of direct experience' or 'phenomenal languages'. He prefers the term 'primary language' [8, 44]. 'Phenomenal language' is recommended by the fact that, as the points below demonstrate, his languages explicate various traditional phenomenal understandings of the contents of experience.

- In the first, “[t]he elements that are directly given are the simplest sensations and feelings”. Observation sentences are thus of the form: ‘here, now, red’.
- In the second, “[w]ords like ‘blue’ do not occur in protocol statements but appear first of all in derived propositions (they are words of higher type)”. This approach can be carried out by taking observation sentences to be descriptions of any of three different kinds of experience:
 - “[p]artial *gestalts* of single sensory fields, e.g., a visual gestalt”, e.g.: ‘red circle, now’; or
 - “[e]ntire sensory fields, e.g. the visual fields as a unity”; or
 - “the total experience during an instant as a unity still undivided into separate sense-regions”.

Neurath leveled two main criticisms against Carnap’s phenomenal languages. First, he took them to presuppose the erroneous thesis that observation statements are indubitable, that once an observation statement has been added to the scientist’s protocol, it can under no circumstances be removed. And second, he took phenomenal languages to be subjective, as opposed to intersubjective, which is unacceptable of a language for science [53, 96-7].⁹ In place of Carnap’s phenomenal languages, Neurath advocates an observation language containing expressions referring to intersubjectively observable physical objects (including the observer) and observation sentences that may be removed from a protocol to which they belong.

Carnap responds to these criticisms in “On Protocol Sentences”. He does not, however, attempt to show that his phenomenal languages are correct and that Neu-

⁹It seems to me that Neurath’s argument shows rather that even phenomenal languages, if they are to serve scientific purposes, must be taken to be intersubjective. This is more a criticism of the thesis that phenomenal languages can be construed as private than a criticism of the languages themselves.

rath's physical language is incorrect. Rather, the central innovations of "On Protocol Sentences" are, first, the claim that conceptions of the protocol language are to be understood as postulates for structuring the language of science. This is a recognition that the protocol sentence debate is a philosophical debate of the kind that the logic of science should replace. The second innovation of "On Protocol Sentences" is the contention that various proposed postulates, including Carnap's own "phenomenal" language and Neurath's physicalist language, are "*possible and legitimate*" [23, 457], and the choice between them is one of "practical utility" [23, 458]. (I have 'phenomenal' in scare quotes here because, as will become clear in the discussion below, once Carnap's proposal for the protocol language is construed as a postulate concerning the structure of language, it is doubtful that it captures traditional phenomenalist ideas.) From this point of view, there is no philosophical necessity to choose one or the other observation language; in deciding between the suggestions for postulates, "[i]t is important that it is not a question of the correctness of assertions but rather of the practicality of certain postulates" [23, 465].

The characterizations of the phenomenal language forms given in *The Unity of Science*, discussed above, are sketchy. Carnap provides "material mode" characterizations of two of the four phenomenal languages, and examples of sentences of the other two. Beyond this, we are only told that different agents' phenomenalist languages are "non-overlapping sub-sections of the physical language" [8, 88]. In "On Protocol Sentences", Carnap attempts to provide a more precise characterization of the distinction between his version of the phenomenalist language and of the physicalist languages proposed by Neurath and Karl Popper. Carnap now sees his "phenomenalist" language as one in which we arbitrarily choose a system of symbols that obeys syntactic rules; such a system may be realized by a machine displaying signal discs, the rings of a tree, or a human speaking an unfamiliar language. We then observe

the interaction between the symbols and the system's environment, translating the symbols into descriptions, in our system language, of their environmental stimuli. In this procedure, the protocol sentences do not belong to our scientific language, but rather are translated into it. This last point is supposed explicate the idea that protocol sentences are *unrevisable*: on this approach, rather than revising or removing a protocol statement when faced with evidence that it is false, we adjust our translation of it.

Carnap also construes the physical languages of Neurath and Popper as “suggestions for postulates”. Neurath and Popper both advocate protocol languages that belong to the physical language; observation sentences are reports about observations of physical objects. The difference between Neurath and Popper on this point is that Neurath requires that the observation sentences contain “a personal name and a term that belongs to the sphere of perception terms” [53, 94]. He also proposes that they exhibit a specific syntactic form, which involves a nested sequence of clauses. Neurath illustrates his view through the example: “Otto’s protocol at 3:17 o’clock: [Otto’s speech-thinking at 3:16 o’clock was: (at 3:15 o’clock there was a table in the room perceived by Otto)]” [53, 93].

On Popper’s approach, as understood by Carnap, “any concrete sentence may be taken under certain circumstances as a protocol sentence” [23, 464-5]. The Popperian begins by deriving concrete (singular) statements from her theoretical postulates and whatever auxiliaries are required. One may then treat the derived sentences as the protocol. Or, if one is unsatisfied with them—because they turn out to be empirically inadequate, e.g.—one may use them to derive further concrete sentences, and use the latter as observation sentences, or continue the process until one has a satisfactory set of observational predictions.

Having characterized the main proposals for the protocol language and the grounds

for choosing between them, Carnap is in position to make the choice. The phenomenal protocol language has the advantage of putting fewer constraints on the form of protocol sentences: as discussed earlier, any system of symbols may be used as a protocol language on this approach. Neurath's and Popper's physicalist languages have the advantage of "greater unity of system" [23, 457-58]. The speaker of such a language does not need to use an additional language for purposes of the protocol, with which she would need to set up a translation function [23, 469]. However, Carnap prefers Popper's approach to Neurath's, as the latter involves a complicated syntax. Carnap in the end opts for the Popperian unified physicalistic language [23, 469-470].

For present purposes, it is not Carnap's preference for the physicalist language that is of central importance; it is rather his method of resolving the debate concerning which of the languages is "correct". Neurath insisted that the phenomenal language was metaphysical and not even an eligible candidate for scientific language. Against this, Carnap argued that the various languages just discussed are usable observation languages, and that we are to choose between them on the basis of practical utility.

4.5 THE "TESTABILITY AND MEANING" ACCOUNT AND THE PROTOCOL SENTENCE DEBATE

For the broadly pragmatic resolution of "On Protocol Sentences" to work, it must be the case that the competing observation languages are in fact possible observation languages. Carnap does not offer an argument for this presupposition. In particular, he does not, in "On Protocol Sentences" or in the works that precede it, provide a

general criterion for an expression's being observational that encompasses both the phenomenalist language and the two versions of the physicalist language. Does the TM account, presented four years later in 1936, uphold his response to the protocol sentence debate by reckoning all of the competing languages as observational?

Neurath's example—'Otto's protocol at 3:17 o'clock: [Otto's speech-thinking at 3:16 o'clock was: (at 3:15 o'clock there was a table in the room perceived by Otto)]'—is not a protocol sentence according to the TM account. It contains the terms 'Neurath's protocol', and 'Neurath's speech-thinking', which will typically only be applicable on the basis of substantial observation or inference. However, Neurath did not *require* that a sentence include these terms in order to count as a protocol statement. Above, I quoted him insisting that protocol sentences include the observer's name and "a term that belongs to the sphere of perception terms" [53, 94]. Thus he argues that phenomenal sentences like 'now joy', 'now red circle', or 'a red cube cube is lying on the table' are inadequate, and that "in our version it should at least be said... 'Otto now joy', 'Otto sees a red circle now', 'Otto sees a red cube lying on the table now'" [53, 94]. Now I take it that these sentences will be licensed as observational by the TM account. And if this is understood as the core of Neurath's account, then there will be substantial overlap in what he and the TM account consider observational. As for those statements that Neurath but not the TM account reckons observational, e.g., Neurath's example, I believe the difference does not derive from anything important in Neurath's view, and that Neurath should therefore be open to revising his view in light of legitimate concerns highlighted by the TM account. To this extent, Carnap's critique succeeds in reckoning Neurath's proposal as a legitimate observation language.

One might think the freedom in the choice of protocol sentences that Popper's approach allows conflicts with the TM account's narrower range of observation terms.

In the Popperian physicalist language, any physical expression may be treated as an observation sentence. On the TM account, one might think, there will be some sentences of the physical language assent to or dissent from which will require too much observation or inference to be classified as observational. However, the TM account is not narrow in the way this argument supposes. As discussed above, Explanation 1 characterizes an observational-theoretical continuum and leaves it up to the investigator where on the continuum to draw the line between observable and theoretical. The decision to vary the observation sentences, within the Popperian approach, may be understood as a decision to move along the continuum defined by Explanation 1. Now Carnap [22, 226] suggests that we should move no further towards the theoretical end of the continuum than terms for what is detectable with simple instruments. And if this were stipulated to be a hard and fast rule of the TM account, the latter would conflict with the letter of the Popperian approach. However, I do not believe Carnap’s upper limit on the degree of complexity of an observation predicate to be a rule of this kind. Rather, the choice of observation sentences, at a given point in time, is a “matter of decision” [23, 465] for the Popperian, and Carnap’s upper-limit may reflect his preferences regarding this decision. The TM account states the desiderata for demarcating observation from theoretical language. To this extent, the TM account clarifies—though it does not precisely define—the general idea of observation language. It does not imply any particular demarcation.

Similar points can be made about Carnap’s “phenomenalist” language. Translations of the protocol sentences may lie on any point on Explanation 1’s observation-theory continuum. Thus, a protocol sentence might be naturally translated into a sentence about an object that could not be detected without the symbolic protocol system in question, or an elaborate measuring instrument. This worry brings out the fact that on Carnap’s approach, we treat the symbol system to which the proto-

col sentences belong as a measuring device. And so, as per Explanation 1, Carnap would be inclined to use symbol systems that are relatively simple. But again, just as Explanation 1 can respect the Popperian’s freedom to choose observation predicates within the physical language, it can likewise respect the same freedom for the “phenomenalist” in the choice of a symbol system.

The TM account thus supports Carnap’s critique of the protocol sentence debate. The latter holds, first, that the various conceptions of protocol sentences are legitimate suggestions for structuring the scientific language, and, second, that we should choose between these suggestions on practical grounds. I have just argued that the TM account of observation supports the first of these steps by counting the Neurathian, Popperian, and phenomenalist protocol languages as legitimate observation languages.

4.6 CONCLUSION

The Carnapian pragmatist’s formulation of her aim in the logic of science presupposes a distinction between observation language and theoretical language. I have argued in this chapter that the TM account provides the makings of the requisite distinction. The TM account defines a continuum of observability; the Carnapian pragmatist then chooses, on pragmatic grounds, a cut-off point along this continuum to be the boundary between observational and non-observational. This conception survives van Fraassen’s two objections to the distinction between observation and theoretical language, *viz.* that observation is theory-laden and that the observation language can be used to describe unobservables.

Having thus clarified and defended Carnap’s distinction between observation and

theoretical languages, I next showed that Carnap's conception of the distinction, formulated in 1936, is compatible with the critique of the protocol sentence debate advocated in 1932's "On Protocol Sentences"; the phenomenalist, Neurathian, and Popperian observation languages are all observation languages on the TM account. This grounds Carnap's claim that the choice between the observation languages is a matter of pragmatic convenience, and not of metaphysical correctness.

5.0 THE STATUS OF VERIFICATIONISM AND OF PRAGMATISM

Verificationism has played an important role in my interpretation of Carnap's anti-metaphysical standpoint: during his syntax period, it grounds the quasi-syntax conception that shapes his Principle of Tolerance, and during his semantics period, it is an important part of his critique of ontology. Given the many influential objections that have been raised against verificationism, Carnap, as I have portrayed him, may come off as antiquated, and my interpretation of him as of purely historical interest. While I believe the historical study of Carnap to be of value to philosophy, I also believe that Carnap's pragmatism remains a compelling view, in spite of its associations with verificationism. In this chapter, I will argue that Carnap's verificationism, when properly understood, is not as implausible as it is widely believed to be. I will make this case by addressing two influential objections: that verificationism requires a criterion of empirical significance that cannot be formulated, and that verificationism is self-undermining. Along the way, I will clarify the status of Carnap's verificationism and the content of his accusations of "cognitive meaninglessness". Some of my arguments invoke Carnap's pragmatism in such a way as to raise questions about its status within the broader logical empiricist project. I address these questions in the final two sections of the chapter.

5.1 CRITERIA OF EMPIRICAL SIGNIFICANCE AND THE CASE-BY-CASE APPROACH

Verificationism maintains that a sentence is meaningful only if it can be translated into an empiricist language. Carnap defines the empiricist languages as those in which every expression is either logical or empirically significant. In §2.4, I briefly discussed the the notion of a logical expression appealed to here. My focus in this section will be on Carnap’s conception of empirical significance.

Informally, an expression is to be empirically significant expression if and only if it adds to its language’s predictive power. The difficulty with this notion is in making it precise. Carnap’s final precisification [19] begins by defining significance relative to a class K of other terms. The definition is as follows:

D1. A term ‘ M ’ is *significant relative to the class K* of terms, with respect to [theoretical language] L_T , [observational language] L_O , [postulates] T , and [correspondence rules] $C^1 =_{Df}$ the terms of K belong to V_T , ‘ M ’ belongs to V_T but not to K , and there are three sentences, S_M and S_K in L_T and S_O in L_O , such that the following conditions are fulfilled:

- (a) S_M contains ‘ M ’ as the only descriptive term.
- (b) The descriptive terms in S_K belong to K .
- (c) The conjunction $S_M.S_K.T.C$ is consistent (i.e., not logically false).
- (d) S_O is logically implied by the conjunction $S_M.S_K.T.C$.
- (e) S_O is not logically implied by $S_K.T.C$. [19, 51]

The term ‘ M ’ is then empirically significant relative to its language, i.e., relative to L_T , L_O , T , and C , just in case “there is a sequence of terms ‘ M_1 ’, . . . , ‘ M_n ’ of V_T ,

¹Correspondence rules are rules that connect theoretical terms to observational terms. In the typical case, C is a conjunction of postulates that augments the language’s physical postulates to the point where observational predictions may be made. In Carnap’s example, L_T is is a language of theoretical physics “based on a space-time coordinate system” [19, 47]. C “may specify a method for finding the coordinates of any observationally specified location, e.g., the method used by navigators for determining the position (the spatial coordinates: longitude, latitude, and altitude) and time” [19, 47].

such that every term ‘ M_i ’ ($i = 1, \dots, n$) is significant relative to the class of those terms which precede it in the sequence, with respect to L_T , L_O , T , and C ” [19, 51].

Kaplan argues that this version of the criterion fails to admit as empirically significant certain predicates that meet Carnap’s informal understanding of the criterion. Suppose the predicate ‘ P ’ is empirically significant in its language L , i.e., with respect to L_T , L_O , T , and C , and let L' be the language that results from replacing every occurrence of ‘ P ’ in L with the disjunction of ‘ P_1 ’ and ‘ P_2 ’ (e.g., whenever ‘ P ’ is followed by a name ‘ a ’ in a postulate of L , we put ‘ P_1a or P_2a ’). Such “deoccamized” predicates can pose a problem for Carnap’s criterion, as the latter evaluates *individual* predicates for empirical significance, whereas ‘ P_1 ’ and ‘ P_2 ’ make a genuine contribution to predictive power, but only when taken collectively. Suppose that ‘ $\forall xPx$ ’, C , and T entail the observation statement O , thus witnessing ‘ P ’s empirical significance in L . Kaplan [48, 173] argues that it follows that ‘ P_1a or P_2a ’, C' , and T' will entail O in L' . However, neither ‘ P_1 ’ nor ‘ P_2a ’, individually, entails any observation statement in L' with the help of C' and T' . For this reason, both may fail to be empirically significant in L' , according to Carnap’s criterion.

Creath [31] fixes this flaw in Carnap’s criterion by applying the basic idea of the latter to classes of terms, rather than to individual terms. On Creath’s approach, ‘ M ’ is empirically significant relative to a set K of terms, L_T , L_O , T , and C just in case it belongs to a class J , which is a subset of V_T and not of K , “and there are three sentences S_J and S_K in L_T and S_O in L_O , such that the following conditions are fulfilled” [31, 398]:

- (a) Every descriptive term in S_J is in J ;
- (b) Every descriptive term in S_K is in K ;
- (c) $\{S_J, S_K, T, C\}$ is logically consistent;

- (d) $S_J, S_K, T, C \vdash S_O$;
- (e) $S_K, T, C \not\vdash S_O$;
- (f) There is no set J' , where $J' \subset J$, such that there are three sentences S'_J and S'_K in L_T and S_O in L_O such that:
 - (fa) Every descriptive term in S'_J is in J' ;
 - (fb) Every descriptive term in S'_K is in K' ;
 - (fc) $\{S'_J, S'_K, T, C\}$ is logically consistent;
 - (fd) $S'_J, S'_K, T, C \vdash S_O$;
 - (fe) $S'_K, T, C \not\vdash S_O$.

The term 'M' is then empirically significant relative to L_T, L_O, T , and C just in case

there is a sequence of sets J_1, \dots, J_n of terms of V_T such that 'M' belongs to J_n , and every member of every set J_i ($i = 1, \dots, n$) is significant relative to the union of J_1 through J_{i-1} , with respect to L_T, L_O, T , and C . [31, 398]

It is widely believed that the historical sequence of patches and punctures that typified attempts to formulate a criterion of empirical significance licenses pessimism about the prospects of ever adequately formulating the criterion. The most direct response to this worry is to maintain that, since Creath's [31] amendment to Carnap's [19] criterion has not yet been punctured, there are grounds for optimism. While the direct response is available, I believe that the verificationist should not tie her fate to it. The history of attempts at formulating a criterion suggests that we should be ready for any account to succumb to a counter-example. Moreover, even if no counter-example is found, the verificationist will encounter skeptics who believe that the counter-example simply hasn't been discovered *yet*. So it would be prudent for the verificationist to have a back-up plan.

Ricketts's [67] and Goldfarb and Ricketts's [40] *case-by-case approach* to selecting the empiricist languages fits the bill. On the case-by-case approach, we criticize problematically metaphysical languages individually, discarding them until we are left with the desired class of empiricist languages. These criticisms of the metaphysical languages will be pragmatic—they will point to features of the language that hinder its ability to function as a deductive instrument governing empirical knowledge. Such criticisms can serve the verificationist's end of demarcating a class of empiricist languages in so far as the intuitive thrust of criteria of empirical significance can be captured in such criticisms. For example, a language could be criticized for containing a term whose elimination from the language would in no way reduce the language's predictive power or deductive efficiency. Goldfarb and Ricketts give as an example of such a pragmatic criticism: "in the given framework most interesting-sounding claims turn out to be analytic, or... certain vocabulary doesn't add to explanatory scope" [40, 75]. The verificationist can then hold that if a statement is not translatable into a language selected in this way, then this statement is cognitively meaningless.

5.2 PUTNAM ON THE SELF-UNDERMINING OBJECTION TO VERIFICATIONISM

A second, classic objection argues that the statement of the verificationist criterion of meaningfulness does not itself meet the criterion; since verificationism is neither empirically confirmable, analytic, nor contradictory, verificationism implies its own meaningfulness, and the criterion is as metaphysical as the sentences that it was intended to eliminate. In the following sections, I reconstruct Carnap's response

to this *self-undermining objection* to verificationism, and discuss some related issues with his pragmatism. I begin by presenting Putnam's [55] discussion of this objection and Carnap's response to it.

In his "Philosophers and Human Understanding", Putnam presses the self-undermining objection to verificationism, then presents a response that he attributes to Carnap. Carnap, on Putnam's reading, grants that verificationism is cognitively meaningless, but emphasizes that it is a practically oriented proposal, *viz.* the proposal to restrict the choice of a language for science to empiricist languages. Since verificationism is a proposal or recommendation, it is not self-applicable. Verificationism is not a declarative sentence stating a general claim about cognitively meaningful sentences that could be self-applied through universal instantiation. Rather, it can be expressed as a suggestion like, 'Let's use an empiricist language'. Carnap explicitly claims that these kinds of linguistic proposals can be both cognitively meaningless and "important" [16, 214]. In this way, Carnap grants the cognitive meaninglessness of verificationism, but denies that it is a problem. After all, it is well known that proposals are not truth-apt, but we don't for this reason stop making them.

Putnam sees a vicious circularity in this defense of verificationism. As reconstructed by Putnam, Carnap's response to the self-undermining objection turns on the thesis that advocacy of a language is non-cognitive. And Putnam takes this latter thesis to be Carnap's principle of tolerance. Putnam's thought is that the claim that the verificationist's decision to adopt an empiricist language is non-cognitive is a special case of tolerance's more general thesis that language choice is non-cognitive. Putnam contends that tolerance in turn rests on, or is to be understood as, the thesis that there are no facts that could render one language more correct than another; tolerance holds that language choice is non-cognitive because in choosing a language for science, there are no facts that I risk leaving out or contradicting. Various sig-

nificantly different languages are equally good, in so far as their postulates cannot be said to contradict the facts. But, according to Putnam, Carnap’s only reason for holding that there are no facts that could decide between rival languages is his verificationism. We have thus come full circle from verificationism, through tolerance, back to verificationism.

Putnam does not spell out the argument from verificationism to tolerance, nor does he defend his assumption that this argument, whatever it is, is the only argument for tolerance; he simply writes: “the doctrine that no rational reconstruction is uniquely *correct* or corresponds to the way things ‘really are’, the doctrine that all ‘external questions’ are without cognitive sense, *is* just the verification principle” [55, 191]. Putnam’s thought, I take it, is that the notion of fact that could render one language more correct than another—the notion that is in play when I ask, “‘There are numbers’ is a theorem of my language, but are there *really* numbers?”—is for Carnap an obscure, metaphysical pseudo-concept because it does not meet the verificationist criterion.²

Though the interpretation of Carnap on which Putnam’s objection rests differs from my own (§2.5) in important respects, for now, I will grant Putnam’s interpretation. Does his objection succeed given his interpretation? It might be thought that Carnap could respond by denying that the circularity Putnam has pointed out is vicious. In Carnap’s response to the self-undermining objection, as reconstructed by Putnam, tolerance is invoked as part of a defensive maneuver to fend off the self-undermining objection, not as part of an argument intended to establish verificationism. The dialectic that Putnam reconstructs unfolds as follows. Putnam objects

²The notion of fact that Putnam rejects here is similar if not identical to Goldfarb and Ricketts’s [40] notion of language-transcendent fact. However, as we will see, Ricketts [68] denies that Carnap rejects the notion on verificationist grounds, thus breaking the circularity pointed out by Putnam.

to verificationism; Carnap responds that given tolerance, and thus verificationism, the objection fails. The Carnapian response anticipated by Putnam does not, then, argue from verificationism to verificationism, but rather from verificationism to the claim that the self-undermining objection does not undermine verificationism. And such a line of argumentation is not circular.

I believe that the response Putnam attributes to Carnap is nonetheless problematic for the following reason. Carnap's defense rests on tolerance, which in turn, rests on verificationism, at least according to Putnam's interpretation; the defense presupposes that verificationism entails tolerance. But if verificationism is a cognitively meaningless proposal, then it has no entailments and cannot justify tolerance.

5.3 VERIFICATIONISM: INTERNAL AND EXTERNAL

Above, I discussed Putnam's claim that Carnap construed verificationism as a practical proposal to restrict the choice of a language for science to the empiricist languages. Before I move on to address Putnam's objection to Carnap, I will give a fuller presentation of Carnap's mature understanding of verificationism, and in particular, of the sense in which he takes it to be non-cognitive. From the *Syntax* onwards, Carnap maintained that a philosophical thesis may be construed in either of two ways: as an analytic or empirical statement of an empiricist language, or as a proposal that we use some particular language or a language of a particular kind. And he took verificationism to be a philosophical thesis that admits of both of these construals. A conception of meaningfulness, such as verificationism,

involves reference to a certain language. Such a reference once made, we must above all distinguish between two main kinds of questions about meaningfulness; to the

first kind belong the questions referring to a historically given language-system, to the second kind those referring to a language-system which is yet to be constructed. A question of the first kind is a theoretical one; it asks, what is the actual state of affairs; and the answer is either true or false. The second question is a practical one; it asks, how shall we proceed; and the answer is not an assertion but a proposal or decision. [10, 3]

The internal, theoretical statement of verificationism refers to a historically given language-system. In such language-systems, the question of the meaningfulness of a sentence can be answered by the rules of the language, and is therefore analytic. The external version of verificationism is the proposal to use a language whose rules admit as meaningful only empirical or analytic sentences (more on these rules below).

On its theoretical construal, verificationism is an internal, analytic statement of a particular language for science. As Carnap [24, 48] points out, then, the theoretical construal is not vulnerable to the self-undermining objection. He discusses the metaphysicians who press the self-undermining objection, and the anti-metaphysical philosophers, like Ludwig Wittgenstein, who bite the objection's bullet. Carnap then responds,

[a]gainst all of them we shall here take the view that *the sentences of the logic of science are sentences of the logical syntax of language*. These sentences therefore lie inside the boundary drawn by Hume [i.e., the boundary between meaningful and meaningless sentences]; for logical syntax is—as we shall see—nothing but the mathematics of language. [24, 48]

The verificationist thesis that all and only empirical or analytic sentences are meaningful in a particular empiricist language L , on this approach, is not a substantive philosophical doctrine, but is rather a consequence of L 's vocabulary including only logical or empirical terms.³ A sentence is empirically significant just in case it

³On this view, the theoretical construal of verificationism presupposes a criterion of empirical significance. I am unsure whether an alternative theoretical construal can be formulated on the

contains only empirically significant or logical expressions. From this definition of ‘empirically significant sentence’, which belongs to a metalanguage ML in which we talk about the object language L , together with the empirical significance of the language’s primitive descriptive vocabulary, it will follow in ML that every sentence of L is empirically significant.⁴ The full statement of verificationism, which also makes reference to analyticity, will require ascent to MML . For Carnap, a sentence is analytic just in case it is a consequence of the metalanguage’s semantical rules. The notion of analyticity in L thus makes reference to ML ’s semantical rules, and can therefore be discussed only in MML , or in a language further up the hierarchy. By examining the semantical rules of MML , we can determine which of the sentences of L are analytic.^{5,6}

case-by-case approach (§5.1). In any case, the more crucial practical construal does not presuppose a criterion of empirical significance.

⁴The truth in ML of the sentence, ‘Every sentence of L is empirically significant’, therefore follows from the semantical rules for ML in the metametalanguage MML . MML will contain ML ’s definition of ‘empirical significance’ as well as a truth in ML predicate. The definition of empirical significance entails, in MML , as in ML , that every sentence of L is empirically significant. And the semantical rules of MML entail that if every sentence of L is empirically significant, then ‘every sentence of L is empirically significant’ is true in ML . By *modus ponens*, then, we get that ‘every sentence of L is empirically significant’ is true in ML . Now on Carnap’s semantic conception of analyticity [13, 79-80], a sentence is analytic in a language just in case its truth follows from the rules of the semantic metalanguage. The foregoing considerations therefore show that it is analytic in ML that every sentence of L is empirically significant.

⁵Thanks to Tom Ricketts for bringing this last point to my attention.

⁶This account of the theoretical construal of verificationism differs from that of Alan Richardson [65]. According to Richardson,

the verification criterion, once proposed and adopted... becomes an analytic truth of the semantic metalanguage. That is, the verification criterion for a given object language, L , is a meaning postulate for ‘meaningful in L ’ in the semantic metalanguage, ML , and thus is analytic in ML , as you could find out by ascending to a semantic metametalanguage, MML , and giving a truth definition in MML of ML . [65, 75-76]

On my interpretation, we get the analyticity of the theoretical construal of verificationism without introducing a meaning postulate for ‘meaningful in L ’; we get the desired result from the facts that

5.4 VERIFICATIONISM AND DEFINITIONS OF MEANING

So much for the theoretical construal of verificationism. The practical construal is the recommendation that we use a language in which the theoretical construal is analytic in the sense just indicated.⁷ But why should we heed this recommendation? Why treat analyticity or empirical significance as necessary for meaningfulness? Why adopt a language in which verificationism is analytic? In this section, I will consider answers to this question that have been put forward by Reichenbach, A. J. Ayer, and Hempel, and I will contrast these answers with Carnap's. I will indicate an advantage of Carnap's approach over the others.

Reichenbach sees the verificationist criterion as a definition of the everyday notion of meaningfulness. Thus, Reichenbach held that the verificationist criterion is an adequate definition of meaningfulness because it captures all differences in usage that are relevant to behavior. But as Putnam points out, verificationism is not adequate by this standard:

Against an obvious objection (that the non-empirical belief in a divinity—Reichenbach used the example of Egyptian cat worshippers—could alter behavior) Reichenbach replied by proposing to translate 'Cats are divine animals' as 'Cats inspire feelings of awe in cat worshippers'. Clearly the acceptance of this substitute would *not* leave behavior unchanged in the case of the cat worshipper! [55, 190-91 n. †]

Ayer criticizes Reichenbach's approach along similar lines.⁸ But he then goes on

(*a*) the expressions of the language are all empirically significant or logical and (*b*) sentences formed out of empirically significant or logical vocabulary are themselves empirically significant.

⁷Or, if we lack an adequate criterion of empirical significance, verificationism in its practical sense urges us to adopt a language from the class of empiricist languages, which in turn were identified through a pragmatic case-by-case approach (§5.1).

⁸Ayer writes:

I suppose that it [the verification principle] might be taken as an empirical hypothesis about the way in which people actually use the word "meaning", but in that

to maintain that the criterion is

a definition of meaning which accorded with common usage in the sense that it set out the conditions that are in fact satisfied by statements which are regarded as empirically informative. [The verificationists'] treatment of *a priori* statements was also intended to provide an account of the way in which such statements actually function. [5, 15]

For Ayer, like Reichenbach, then, the adequacy of the verificationist criterion is dependent on the empirical claim that it captures certain desired elements of the ordinary, pre-theoretical concept. However, where Reichenbach proposes the criterion as an analysis of the ordinary concept of meaning, Ayer, by contrast, takes common usage to recognize several senses of meaning and to hold that the empiricist criterion captures two such senses: that of empirical informativeness and that of *a priority*. Ayer's account relies on analyticity to capture the ordinary notion of meaning that pertains to *a priori* statements. But this account succumbs to the same counterexamples as did Reichenbach's. Various *a priori* claims are meaningless according to verificationism but meaningful according to ordinary usage.

Hempel, like Reichenbach and Ayer, believes that the criterion aims to capture the ordinary concept of meaning. However, he takes the criterion to be an *explication* of the ordinary concept. As such, the criterion may "go beyond the limitations, ambiguities, and inconsistencies of common usage" if doing so would contribute to "a consistent and comprehensive theory of knowledge" [43, 61]. Thus, the verificationist criterion's deviations from ordinary usage might be outweighed by its contributions to the "comprehensiveness" of our theory of knowledge. Whereas the deviations between the verificationist criterion and ordinary usage refute the criterion on Reichenbach's

case it would appear to be false; for it is not contrary to ordinary usage to say that metaphysical utterances are meaningful. [5, 15]

construal, Hempel can respond that the deviations are outweighed by the systematic advantages.

Hempel does not identify specific systematic benefits that might outweigh the criterion's mismatch with ordinary usage. I contend that these systematic advantages can be appreciated from the perspective of Carnap's pragmatism. As I noted in §2.5, empiricist languages are to be preferred because the addition of descriptive, non-empirical vocabulary—non-observational vocabulary that makes no “difference for the prediction of an observable event” [19, 49]—would not improve the language *qua* deductive instrument for science. The addition of such vocabulary would, however, increase the language's complexity unnecessarily. The advantage of the criterion is the greater efficacy of the languages that conform to it.

Since explication aims to both preserve and improve upon ordinary meaning, the verification criterion's possession of the advantage just discussed is not sufficient to recommend the criterion as a successful explication. For as Putnam's objection to Reichenbach shows, the criterion deviates substantially from ordinary usage. And I see no way of determining whether the advantage outweighs the deviation. In so far as the criterion is viewed as an explicatum of the pre-theoretical concept, then, the criterion's advocates and detractors are stuck in a stalemate.

The verificationist would therefore strengthen her position by abandoning her aim of capturing or explicating ordinary usage. On this view, the criterion introduces a novel concept, that of “*logical*” [24, 48] meaning, that is unconnected to the ordinary or psychological notions of meaning. Such an account seems to me closer to Carnap's understanding of the criterion. I know of no passage where Carnap describes the criterion as an explicatum, nor where he suggests that it captures ordinary usage at all. On the other hand, in the course of discussing verificationism in “Testability and Meaning”, Carnap maintains that

[i]t would be advisable to avoid the terms ‘meaningful’ and ‘meaningless’ in this and in similar discussions—because these expressions involve so many rather vague philosophical associations—and to replace them with an expression of the form “a . . . sentence of L ”; expressions of this form will then refer to a specified language and will contain at the place ‘. . .’ an adjective which indicates the methodological character of the sentence, e.g. whether or not the sentence (and its negation) is verifiable or completely or incompletely confirmable or completely or incompletely testable and the like, according to what is intended by ‘meaningful’. [10, 3]

In this passage, Carnap expresses no intention to capture the ordinary notion of meaning with his criteria of empirical significance; indeed, he proposes to *replace* the term ‘meaningful’ with methodological terms, without consideration for the extent to which uses of the latter coincide with the former.

Carnap’s accusations of “cognitive meaninglessness” do not, then, appeal to a conception of meaning resembling the ordinary, pre-theoretical one (as do the versions of verificationism discussed by Hempel [43, §6] and Ayer [5, 15]). Carnap does not, for example, assume some fixed set of propositions, the expression of which imbues sentences with meaning, and then claim that unverifiable, external claims fail to express one of these propositions. Instead, Carnap restricts the candidate languages for science to the empiricist languages discussed above on the basis of their pragmatic advantages. His accusation of “meaninglessness” amounts to saying that the target sentences cannot be translated into a language that meets this minimal condition on being an acceptable language for science. This point licenses the accusation of “meaninglessness” in the following sense. In order to recognize a sentence as truth-apt, one must acknowledge that it possesses truth conditions. But to formulate a sentence’s truth conditions, we must be able to translate it into our own language.⁹ We cannot, therefore, formulate the truth conditions for external sentences in any

⁹At this point, the argument assumes the Tarskian view on which to state the truth conditions for a sentence p of language L is to state a sentence of the form, ‘ p is true in L if and only if q ’, where ‘ q ’ translates p .

minimally acceptable language. It is in this sense that external statements “have” no truth conditions.

5.5 A RESPONSE TO THE SELF-UNDERMINING OBJECTION

The response to the self-undermining objection that Putnam anticipates on behalf of Carnap grants that advocacy of verificationism—of a restriction to empiricist languages—is non-cognitive, but situates this concession within Carnap’s tolerant conception of language, according to which verificationism is a practical proposal. In this way, verificationism is said to presuppose tolerance; this is the first step in the circle. Putnam then argues that, tolerance, in turn, presupposes verificationism; this second step closes the circle.

My pragmatist interpretation of Carnap’s tolerance and verificationism avoids the second step of Putnam’s circle by allowing the Carnapian to deny that tolerance is grounded on verificationism. Pragmatism can motivate two senses of the claim that the practical construal of verificationism is non-cognitive, and presupposes verificationism in neither. On the interpretation of tolerance developed in §2-3, the decision to use a language for science is unconstrained by cognitive correctness because the latter is irrelevant to the purposes for which we will use the language. But to reject cognitive constraints in this way—to adopt the principle of tolerance—is not to reject any particular conception of fact as unverifiable—it is to claim that such conceptions are of no practical use in science.

This is not to say that Carnap *accepts* that there are language-transcendent facts and merely claims that they are irrelevant (I take up Carnap’s rejection of the notion of language-transcendent fact in §6). I suspect that this notion of fact would be of

no practical scientific utility from the point of view of Carnap's pragmatism. The Carnapian pragmatist therefore prefers languages that do not include it. In this way, *pragmatism*, in advance of verificationism, leads us to exclude the notion of a language-transcendent fact from our scientific language; this is the second sense in which pragmatism can ground tolerance. The rejection of the notion of language-transcendent fact and the restriction to empiricist languages enter the pragmatist picture simultaneously, as consequences of pragmatism; there is no priority between them that could lead to circularity.

5.6 RICKETTS'S RESPONSE TO PUTNAM

Ricketts [68] also responds to Putnam's argument by denying that Carnap would have grounded tolerance on verificationism. However, as I will presently explain, Ricketts's response differs subtly, but importantly, from my own. According to Ricketts, Putnam wrongly

supposes that Carnap, in adopting the principle of tolerance, assumes an explanatory burden of excluding the general question of the representational adequacy of a language, and of discrediting the general notion of fact, of the way the world is, that ineliminably figures in the formulation of the question. It is the explanatory or justificatory character of the burden that makes appeal to the principle of tolerance in defense of empiricism viciously circular. [68, 178]

Putnam supposes that Carnap accepts the challenge of demonstrating the non-existence of facts that could make some languages more correct than others. Having accepted such a challenge, Carnap would have to provide an argument that would demonstrate the non-existence of such facts, i.e., the truth of tolerance. The argument for tolerance that Putnam anticipates on behalf of Carnap draws on verifi-

cationism; thus, the attempt to justify tolerance puts Carnap on the circular path described by Putnam.

Ricketts accepts Putnam's characterization of tolerance as the rejection of any notion of fact capable of grounding a notion of language correctness. Thus, Carnap does not reject the "explanatory burden" of "discrediting the general notion of fact" because he accepts the notion, but rather because he rejects the explanatory burden. According to Ricketts, Carnap would have to accept such a burden of proof only if the general notion of fact met two conditions. First, the notion would have to be "sufficiently clear" [68, 196]. I take it that, if a notion is unclear from some perspective, then an advocate of the perspective is not obliged to give arguments against the unclear notion, beyond pointing out its unclarity. (I discuss the idea of clarity appealed to here further below.)

Second, an acceptable notion of fact would have to be able to "bear the weight of Putnam's challenge" [68, 196], i.e., to figure in a non-question-begging argument against tolerance. A clarified notion of fact that grounds only circular arguments against tolerance would not put any pressure on Carnap to justify tolerance. As an example of an account of 'fact' that meets the first but not the second condition, Ricketts considers what I have been calling the 'dogmatism'. The dogmatist clarifies the notion of a fact through her currently adopted language: it is a fact that p just in case the sentence q is analytic or sufficiently empirically confirmed in the current language for science, and q translates ' p '. We can use this notion of fact to define "correctness" with regard to the choice of a language: "a language is correct just in case it includes a sublanguage that translates my language" [68, 196]. This account of fact, and of correctness, though it would be suitably clear to Carnap, does not meet the second condition (bearing the weight of Putnam's challenge) because it

does not supply a reason for rejecting the principle of tolerance; rather it reflects a refusal on my part to countenance any language that is not a notional [*sic*] variant on my own, and so an outright rejection of Carnap's logical pluralism. [68, 196]

Ricketts's interpretive claim is not that Carnap has claimed to demonstrate the impossibility of formulating such a notion, but only that until such a notion has been put forward, Carnap is under no pressure to justify tolerance.

Ricketts anticipates an objection to his use of the clarity requirement on notions of fact in his response to Putnam. Putnam [55] argues that the self-defeat exhibited by verificationism is a trait of "criterial conceptions of rationality" generally, where a criterial conception of rationality is any conception according to which some preferred "institutionalized norms... define what is and is not rationally acceptable" [55, 188]. But as Ricketts notes, the notion of clarity figuring in his first condition on notions of fact might be thought to rely on a criterial conception of rationality, *viz.* verificationism: "Putnam is objecting to Carnap's conception of clarification, to the position that the clarification of a thesis requires the statement of the thesis in a verificationist language" [68, 196].

The core of Ricketts' response is contained in the following passage:

Carnap's requests for clarification do not draw on some theory, some constrictive view, of what clarification must amount to. He is open to considering whatever is offered by way of clarification. He, however, advocates that when we find ourselves puzzled by some claim, we should formalize the claim in a syntactically described language. It is not part of his view that clarification is *constituted* by formalization [68, 196–97].

Ricketts's Carnap takes translatability into an empiricist language to be sufficient but not necessary for clarity; Ricketts denies that "the clarification of a thesis requires the statement of the thesis in a verificationist language". His idea, I believe, is that Carnap can set aside verificationism for the purposes of discussions about the nature

of language choice and show that the proposed notions of fact fall short of various conceptions of clarity that are to varying degrees shared by both parties.

Ricketts's Carnap is vulnerable to the following objection. There are conceptions of fact that ground non-question-begging objections to tolerance and that Carnap must therefore regard as unclear, on Ricketts's interpretation. I suspect that many philosophers adopt a *traditional* view of facts, according to which it is a fact that p if what is expressed by $\lceil p \rceil$ is true, in an absolute sense that is not relative to a language,¹⁰ and we can determine whether $\lceil p \rceil$ is true through a combination of *a posteriori*, logical, and synthetic *a priori* methods. Unlike the dogmatist's view, this traditional view of facts is not an outright rejection of the principle of tolerance; it is not a refusal to countenance alternative languages. But it does imply that some languages may be incorrect (those whose constitutive stipulations are false *simpliciter*) and others correct (those whose constitutive stipulations are true *simpliciter*). Ricketts's Carnap must therefore reject this conception of fact as unclear. But if this rejection of the concept is not based on a general ("constrictive") conception of clarity, nor on any shared presuppositions or sensibility, then it is problematically *ad hoc*, arbitrary, and unmotivated. Ricketts might suggest that the rejection is motivated by scientific values, broadly construed. But the proponent of the traditional view should expect an argument as to why her view is incompatible with scientific values.

My interpretation contrasts with Ricketts's in regard to the latter's claim that Carnap does not argue from verificationism to tolerance and, indeed, does not argue for tolerance at all. On my interpretation, Carnap accepts an "explanatory or justificatory... burden" [68, 178] in regard to the Principle of Tolerance. Ricketts maintains that, since the notion of language-transcendent fact is neither sufficiently clear nor part of a non-circular objection to tolerance, Carnap does not owe us a

¹⁰I return to this conception of fact and truth in §6.2.

non-question-begging objection against the notion. I agree with Ricketts that Carnap does not *owe* us an argument for tolerance, in that Carnap's view would be at least coherent even if it lacked the means to give such an argument. However, it would be preferable to have a non-question-begging argument for tolerance, so long as the argument does not lead us into Putnam's circle. In particular, Carnap is in a better position if he can motivate his rejection of the traditional view of facts. In §5.5, I argued that Carnap's pragmatism can provide just this kind of motivation.

5.7 IS PRAGMATISM SELF-UNDERMINING?

In §5.6, I discussed Putnam's contention that all criterial conceptions of rationality are self-undermining, or at least, cannot be non-circularly demonstrated. I have given the argument from pragmatism to verificationism that, I claim, underlies Carnap's verificationism. If the argument succeeds, then Carnap has a non-circular argument for verificationism. However, the argument does not fully address Putnam's objection, but merely shifts the target of the objection from verificationism to pragmatism. On my reconstruction of Carnap's view, Putnam might say, verificationism is no longer a criterial conception of rationality, but pragmatism is, because it sets out the norms that purport to be, or to contain, rationality. But, according to Putnam, all criterial conceptions of rationality are vulnerable to their own version of the self-undermining objection that has been directed at verificationism.

The self-undermining objection to Carnap's pragmatism that I have in mind runs as follows. According to pragmatism, it is either useful for predictive purposes to include a thesis as a cognitively meaningful sentence of our language for science, or else we should not do so. But pragmatism is not useful for the description or

prediction of observation reports, nor is any set of postulates that entail it. So we should not include pragmatism as a sentence of our language. Pragmatism is therefore self-undermining: it cannot be formulated within any language that is admissible by its own lights.

The objection wrongly assumes that pragmatism must be expressible within one of the languages towards which it is directed. But pragmatism is a set of preferences, of what Ricketts calls “values and desiderata” [72, 225], that some bring to the choice of language. There is no reason to think that the legitimacy of such a preference depends on its formalizability in one of the languages that it recommends. Analogously, a preference for vanilla ice cream is not illegitimate because it (the preference) is not itself a scoop of vanilla ice cream that is, by its own lights, desirable.

5.8 WHY BE A CARNAPIAN PRAGMATIST?

Carnapian pragmatism is to be understood as a cluster of preferences and values that provide standards relative to which we can evaluate candidate languages for science. The standards themselves are evaluable in this way only relative to other desiderata. If a pragmatist doesn’t accept any values or have any preferences that pragmatism helps to achieve, then for her, pragmatism is a bare preference. Though there is nothing obviously objectionable about basic pragmatist preferences, they strike me as unnatural; most of us are at least initially inclined to prefer scientific theories that correctly represent the facts (assuming this can be done). In this section I consider some possible motivations that might lie behind Carnap’s pragmatism. I propose to view pragmatism as a means for achieving the prior goal of eliminating fruitless questions that could inhibit scientific progress. In identifying this motivation

for pragmatism, I do not expect to persuade a large number of non-pragmatists. Rather, my hope is to clarify the broader philosophical perspective that encompasses Carnap's pragmatism.

Before presenting my own account of the ground of pragmatism, I would like to consider an alternative that is suggested by some of Carnap's remarks. In some places, Carnap suggests that pragmatism or tolerance follows directly from his conception of philosophy as logical analysis:

Once it is understood that all pro- and anti-intuitionist considerations are concerned with the form of a calculus, the question [whether to adopt an intuitionistic calculus] will no longer be asked in the form 'What is the case?' but rather 'How do we want to set this up in the language being constructed?' [...] And with that, the dogmatic frame of mind that often makes the discussion unfruitful is banished. [11, 46-47]; Cited in [28, 255-56]

The claim here is that once we recognize philosophical questions that seem to concern what is the case to be questions about how to structure a language, we will abandon dogmatism and come view the questions as practical. Carus elaborates on the passage just cited: "reliance on inherently vague philosophical *Erörterungen*—inconclusive, meandering discussions or considerations—rather than on precise statements of definitions and rules" results in a "dogmatic frame of mind" [28, 256]. It is in this way that restricting philosophy to the logic of science "banishes" the "dogmatic frame of mind". Having banished dogmatism, we will recognize the questions of the logic of science as pragmatic.¹¹

¹¹Awodey and Carus [3, 40] note that

[o]nly by *replacing* the vague concept with a precise equivalent can the practical merits or drawbacks of a proposal be judged, for some defined purpose. And under the new regime of pluralism, where there can be no criterion of inherent "correctness", practical usefulness is the only criterion left for deciding whether a proposal should be pursued or left aside.

This attempt to motivate pragmatism will not work. The problem is to motivate a specific use for formal languages. But to hold that philosophy should concern itself with formal language is not to advocate any specific use for such language. For example, one can restrict one's philosophical attention to formal languages but hold that the purpose of such languages is to correctly represent the facts. This approach is likely to lead to a dogmatic view of language choice.

A more promising route, I believe, is to look for prior practical aims—i.e., values and preferences—that pragmatism can hope to advance. Carus [28] pursues this approach ambitiously, tracing the relations of priority underlying Carnap's "conceptual framework" all the way back to the goal of providing a "comprehensive and internally consistent Enlightenment world view" [28, 8]. Carus characterizes the broader Enlightenment project to which Carnap hoped to contribute as follows:

[t]he Enlightenment is identified with the idea that improved knowledge can be an instrument of individual and social liberation. People of whatever class or culture, given access to this knowledge and the tools to use it critically, are able in this view to emancipate themselves from their culture of origin and belong to a cosmopolitan republic of letters. Individuals who join this culture are better informed about the contexts of their lives, this story goes, and so are better able to make informed life choices and to take genuine civic responsibility. And societies composed of such citizens can use this knowledge to build pluralistic institutions that enable all their members to develop and pursue their aspirations autonomously. [28, 1]

While I am sympathetic to Carus's account, I will leave it as background to my own discussion; I will stop at a shallower level in the Carnapian pragmatist's underlying chain of preferences.

I contend that Carnap's pragmatism may be motivated by a desire to contribute

Note that here the claim is that the logic of science conception is *necessary* for Carnap's pragmatism. This strikes me as plausible. In the previously quoted passage, by contrast, Carnap seems to claim that the logic of science conception is *sufficient* for his pragmatism. It is this latter claim that I deny.

to scientific progress by eliminating fruitless questions. Early in his career, Carnap came to view the elimination of what he perceived as bad questions to be an important undertaking:

[e]ven in the pre-Vienna period, most of the controversies in traditional metaphysics appeared to me sterile and useless. When I compared this kind of argumentation with investigations and discussions in empirical science or in the logical analysis of language, I was often struck by the inconclusive nature of the arguments. I was depressed by disputations in which the opponents talked at cross purposes; there seemed hardly any chance of mutual understanding, let alone agreement, because there was not even a common criterion for deciding the controversy. [20, 44-45]

Later, in ESO, Carnap maintains that issuing metaphysical prohibitions, which result from trying to answer external pseudo-questions, can be “positively harmful because it may obstruct scientific progress” [16, 221].

The Carnapian pragmatist thus begins with a desired research program, a desired set of questions. She then tailors her approach to language choice, thereby fixing the means by which she formulates and answers questions, to yield the desired program. (Presumably adjustments will also be made in the other direction.) Specifically, the Carnapian pragmatist sets up her language so that every sentence is subject to logical or empirical considerations; such a language, Carnap hopes, will, if it doesn’t definitively settle every question, at least clarify the terms of any debate about a sentence of the language in a way that avoids fruitless debates. And, more fundamentally, the Carnapian pragmatist adopts a perspective on language from which it is pointless—and perhaps meaningless—to debate, as the dogmatist is inclined to do, about which of the alternative languages is correct.

This desire to eliminate fruitless disputes palpably motivates Carnap’s basic philosophical position from “On Protocol Sentences” onwards. On the other hand, in the works preceding this paper, Carnap’s critique of metaphysics was based on a

kind of verificationism that is explicitly advocated on the basis of philosophical arguments. In “Pseudoproblems in Philosophy” Carnap gives what amounts to a case argument for a verificationist theory of meaning.¹² He considers a number of alternatives to verificationism and argues that each contravenes a plausible assumption about meaning. For example, to the suggestion that a sentence p may designate a fact that is “in principle unrecognizable”, Carnap replies: “then p is meaningless, for how can p be distinguished from a meaningless combination of signs, if the alleged content of p is something that cannot become the content of any experience?” [26, 341]

It was in order to dissolve a fruitless dispute between verificationists that Carnap adopted pragmatism. As I discussed in §2.5, Carnap first introduces generic pragmatism in “On Protocol Sentences” in order to deflate Neurath’s objections to the phenomenal protocol language. Pragmatism was introduced in order to eliminate the pointless question, ‘Which is the correct form for the protocol language?’ It is notable that Carnap came to see pragmatism as an essential part of the way out of the fruitless protocol sentence debate; he does not argue that either party to the debate contravenes agreed upon verificationist strictures. Carnap quickly extended “On Protocol Sentences”’s pragmatism concerning the protocol language to the choice of the logical and mathematical components of language, and so came to see pragmatism as capturing a very general aspect of language choice in science. The decision to restrict one’s choices to the empiricist languages—the decision to adhere to verificationism—was naturally assimilated to this conception. The point that I want at this point to stress is, again, that the initial move to the pragmatist

¹²The verificationist theory advanced there seems to be neither relative to a particular language for science nor a practical proposal, and so is the kind of philosophical formulation that, after his adoption of pragmatism and tolerance, he came to regard as problematic.

conception of protocol language, which initiated the move to the broader pragmatist conception, was driven by the desire to avoid the fruitless dispute about the “correct” form of protocol sentences.

Friedman has defended an interpretation that is similar to my present proposal. Friedman suggests that an aversion to fruitless debates lies behind Carnap’s principle of tolerance. I believe that his remarks apply equally to Carnap’s pragmatism, which is, I have argued, the basis of his principle of tolerance. According to Friedman,

Carnap’s tolerance is not simply that of the ‘working scientist,’ who urges us to leave philosophical problems behind once and for all in order to return to the real scientific work. Rather, it is directed precisely at those caught in serious philosophical perplexities, and it aims to offer such people (provided, of course, that they are inclined toward scientific rather than metaphysical philosophizing) a way of transforming their hitherto fruitless disputes into fruitful ones. [38, 221]

The appeal of tolerance, and of its underlying pragmatism, on this view, is its potential to eliminate fruitless disputes so that we can focus on fruitful ones.

This approach to motivating tolerance begins with a preferred set of “fruitful” debates and claims that the pragmatist will engage in all (or most) and only (or mostly) debates belonging to this set. But what makes a debate fruitful? Carnap defines fruitfulness for *concepts*:

[a] scientific concept is the more fruitful the more it can be brought into connection with other concepts on the basis of observed facts; in other words, the more it can be used for the formulation of laws. [14, 7]

This might suggest one dimension of fruitfulness for debates: a debate is fruitful to the extent that it concerns a claim involving fruitful concepts. However, Carnap generally adduces a different kind of fruitlessness as evidence that a debate is a pseudo-dispute. He more frequently rejects debates on the following grounds:

I cannot think of any possible evidence that would be regarded as relevant by both philosophers, and therefore, if actually found, would decide the controversy or at least make one of the opposite theses more probable than the other. [16, 219]

I will take the *fruitless* disputes that pragmatism is supposed to eliminate to be disputes of the kind described in this passage, *viz.* those that are in no way rationally adjudicable.¹³ I should note that I take rational adjudicability to be a weaker requirement than what might be called ‘complete confirmation’, i.e., deducibility from some finite set of postulates or observation reports. I should also note that the elimination of fruitless disputes, in this sense, is one motivation to be weighed against others. Constructivist languages may eliminate more fruitless disputes than classical languages, e.g. But classical languages are more effective in various ways, and this greater effectiveness may outweigh the desire to eliminate fruitless disputes.

This conception recommends pragmatism over at least some traditional versions of scientific realism, which hold that scientific theorizing aims to uncover the truth. Traditional realist views invite the question of which theory is in fact true: are simpler theories more likely to be true? Would a minimal adjustment to the current theory yield a truer theory than substantial adjustments? If, as seems likely, there is no procedure for resolving disputes over such questions, the disputes are fruitless, and in so far as we want to avoid fruitless disputes, Carnapian pragmatism’s capacity to eliminate them is an advantage.

¹³I agree, therefore, with Peter Hylton’s [46, 172] claim that an “ideal of rational adjudicability” underlies Carnap’s tolerance and i/e distinction.

5.9 CONCLUSION

This chapter had two principal aims: to defend verificationism against two historically influential objections to it, and to clarify the status of pragmatism. The first objection to verificationism that I considered holds that verificationism requires a criterion of empirical significance, and that no such criterion can be formulated. I responded by suggesting that both premises can be denied—the project of formulating a criterion of empirical significance has not been decisively shown to fail, and in any case, the case-by-case approach to selecting the empiricist languages can take its place within verificationism. The second objection I considered holds that, since verificationism is neither empirically significant nor analytic, it is cognitively meaningless by its own lights. I responded that this does not undermine verificationism, as it true only of the practical recommendation to adopt an empiricist language. But such practical recommendations need not be cognitively meaningful in order to be advisable. I then argued that this practical decision is motivated by Carnap's pragmatism and that, *contra* Putnam the Carnapian pragmatist's response to the objection is therefore not viciously circular.

Next, I considered whether Carnap's pragmatism is itself self-undermining, as it cannot be formulated within any language that is useful by its own lights. I argued that because Carnap's pragmatism is a preference, it need not be formulable within such a language. Finally, I proposed that Carnap's pragmatism might rest on a prior preference for avoiding fruitless disputes.

6.0 LANGUAGE RELATIVITY ACCOUNTS OF TOLERANCE

The account of the Principle of Tolerance developed in the preceding chapters diverges from a widely held alternative. The latter account, which I have been calling *language relativity*, holds that

- (a) there are no facts that languages' constitutive postulates, analytic sentences, or stipulations could misrepresent—in Ricketts's terminology, there are no “language-transcendent facts” that would “[impose] constraints on the choice of a calculus, making some choices incorrect because those choices stipulate sentences to be true which are in fact false” [71, 210]; and
- (b) there is therefore no coherent standard of cognitive correctness for evaluating the choice of a language for science.

On this view, when the realist claims that we perceive material objects, or when the logicist claims that numbers are sets of sets, or when the moderate nominalist claims that there are no classes of classes, each purports to represent a language-transcendent fact. And the language relativist maintains that Carnap's tolerance is the rejection of the notion of language-transcendent fact.

I argued in §2.3 that during Carnap's syntax period, his doctrine of quasi-syntax partially determined the character of the Principle of Tolerance. Under quasi-syntax's influence, tolerance straightforwardly involved a rejection of the notion of language-

transcendent fact. Given the quasi-syntax conception of philosophy, any statement purporting to identify a fact to which a language is incorrect ('numbers are classes of classes', e.g.) turns out to be a trivial and harmless statement about the syntax of some language ('Numerical expressions are class expressions of the second level in L '). As we saw, these syntactic translations do not identify facts that the disputed language could be incorrect to.

Language relativists seem to be offering an account of tolerance that is meant to hold of Carnap's mature work in its entirety, i.e., in both his syntax and semantics periods. Language relativists cannot, then, rest their case on the argument concerning quasi-syntax recently discussed; in fact, in making their case, language relativists have not appealed to quasi-syntax at all. Now in his semantics period, Carnap does not assert a connection between tolerance and language relativity with the same explicitness that he advocates quasi-syntax in his syntax period. Accordingly, language relativists treat this connection as a commitment implicit in other elements of his philosophy.

There are two main kinds of language relativity interpretations. Each takes the rejection of the notion of language-transcendent fact to follow from a kind of relativity to language—from a relativity of standards of cognitive correctness to language in the one case, and from a relativity of content to language in the other. I begin in §6.1 with the correctness-relativity versions of language relativity developed by Peter Hylton, Friedman, and Ricketts. In §6.2, I examine Creath's and Ricketts's content-relativity. Two crucial contrast between my pragmatist interpretation on the one hand, and both versions of language relativity on the other arise in connection with the dogmatist described in §3.3 and the traditional view of facts discussed in §5.6. But while there is a contrast between content-relativity approaches to understanding tolerance my pragmatist interpretation, there is in my view no incompatibility, and indeed, I

believe that content-relativity is plausibly a consequence of Carnap's pragmatism.

6.1 CORRECTNESS-RELATIVITY

On correctness-relativity accounts, tolerance is said to follow from the language-relativity that Carnap believes to characterize cognitive correctness, i.e., truth, empirical confirmation, and logical consequence. On Hylton's interpretation, tolerance "rests upon" an "ideal of rational adjudicability" [46, 172], i.e., a distinction between "substantive" debates, where there is agreement "about what data would settle the issue" [46, 173], and "verbal" debates, where there is no such agreement. The substantive debates are those that have been relativized to a language for science: "[f]or Carnap, language, and in particular logic, play a constitutive role in knowledge: only once a logic and a language are in place is knowledge possible. Only then is a rational dispute, or rational agreement, possible" [47, 45].

Hylton believes the principle of tolerance to be concomitant with Carnap's ideal of rational adjudicability. The ideal of rational adjudicability holds that a substantive debate can take place only if there is a language in place to make adjudication possible; for Hylton's Carnap,

[i]t follows that the choice of language and logic, and questions which turn on that choice, cannot themselves be matters for such dispute: with no logic in place, there will be no agreed methods which might settle such a question. [47, 45]

What is here said to follow—that there can be no substantive debate about the choice of a language—is the language relativist's understanding of the principle of tolerance.

Friedman and Ricketts also interpret tolerance as a matter of the language-relativity of standards of cognitive correctness. Friedman takes Carnap to begin with the premise that “[a]ll standards of ‘correctness’, ‘validity’, and ‘truth’... are relative to the logical rules or principles definitive of one or another formal language or linguistic framework” [39, 31]. He then takes Carnap to infer that “it makes no sense to ask whether any such choice of framework is itself ‘valid’ or ‘correct’ ” [39, 31].

On Ricketts’s interpretation, Carnap’s acceptance of tolerance flows from a similar conception of correctness-relativity:

[i]n an empiricist language, the logical consequence relation of a calculus defines standards for the acceptance and rejection of sentences and theories formulated within the calculus and defines standards for a language-relative notion of cognitive correctness. Indeed, Carnap thinks that talk of truth or correctness becomes tolerably precise only in application to a formal language with its consequence relation. [71, 208]

And we then find roughly the same inference to tolerance:

No such language-relative notion of correctness is applicable to the choice of a language with its constituting consequence relation. Here we have Carnap’s leading idea: the Principle of Tolerance and an attendant sharp contrast between the adoption of a formal language as the language of science and the evaluation of sentences within that language as correct or incorrect. [71, 208]

On all three formulations of correctness-relativity discussed in this section, Carnap’s tolerance relies on an inference from the language-relativity of cognitive correctness to the conclusion that correctness does not apply to the decision to use a given language for science.¹

¹These views qualify as language relativist because the claim that truth and correctness are language-relative, on which tolerance is supposed to be based, involves a rejection of any language-independent notion of truth. And this plausibly implies a rejection of the notion of language-transcendent fact.

The correctness-relativist's inference is strictly speaking invalid, since, as my discussion of dogmatism in §3.3 shows, language-relative notions can be applied to the choice of a language. The dogmatist intends her assertion of 'There are numbers', e.g., in a language-relative sense, and yet takes this assertion to imply the rationality, for her and whoever uses her language, of the decision to use the framework of numbers.

The correctness-relativist might respond that dogmatic arguments beg the question against alternative languages, just as the argument just mentioned begs the question against nominalistic frameworks. The correctness-relativist's conclusion could then be revised to hold that the language-relative notion of correctness cannot be applied in any *interesting* or *non-question-begging* way to the choice of a language for science—language-relative concepts of correctness cannot ground an argument concerning language choice without begging the question against alternative languages. Perhaps this revised conclusion is the Principle of Tolerance.

The problem with this response is that the dogmatist's inference is not question-begging against users of alternative languages *per se*. A dogmatist's argument for the framework of numbers, for example, would rest on two premises: (1) that the language she currently employs contains the framework of numbers and (2) that all things being equal, she should seek to revise her language as little as possible. Proponents of alternative languages need deny neither of these premises.

As I discussed in §3.3, I believe that the Carnapian response to the dogmatist is to deny dogmatism on the grounds that it conflicts with pragmatism. But this response does not follow from the language-relativity of cognitive correctness. Rather, it rests on the Carnapian pragmatist's purpose in constructing and using languages for science.

6.2 CONTENT-RELATIVITY

Creath has developed a language relativist reading of tolerance around what he calls Carnap’s “Hilbertization of content” [32, 141]. This conception of content construes axioms “as definitions (implicit definitions) and their assertion as commitment to a language containing the terms so defined” [32, 144]. Given this conception of implicit definition, if two logicians employ languages for science with “apparently conflicting postulates, there is in fact no disagreement [between the logicians] because each postulate set is constitutive of the concepts it employs” [32, 144]. Content is thus language-relative on Creath’s view—languages with distinct constitutive postulates cannot express the same contents. Creath draws the conclusion that the languages’ “[c]onventions are not designed to reflect antecedent and independent facts.... Rather, the postulates (together with the other conventions) create the truths that they, the postulates, express” [32, 147]. It follows that the postulates are not subject to “epistemic justification or cognitive warrant” [32, 145], i.e., that we have the freedom in language choice promised by the Principle of Tolerance.

To illustrate how implicit definition pertains to tolerance on Creath’s account, I will return to the moderate nominalist’s argument.² On Creath’s account, the term ‘class’ is implicitly defined in a language by the class theory governing its use. Since L_1 and L_2 contain different class-theoretic axioms, they employ different concepts of class. For this reason, “there is in fact no disagreement” [32, 144] between the moderate nominalist and platonist: when the moderate nominalist denies the sentence ‘There are classes of classes’, the claim he denies involves a different concept than is involved in L_1 ’s typographically identical stipulation (and, we may further

²This paragraph attempts to reconstruct a line of argument that Thomas Ricketts presented to me in conversation (he did not propose the argument as an understanding of Creath’s views).

assume, he cannot deny the latter stipulation by means of any other sentence of his language). The moderate nominalist does not, and cannot, therefore, deny L_1 's stipulation. But the moderate nominalist's claim that he cannot choose L_1 , or that L_1 is somehow incorrect, was based on a putative denial of one of L_1 's stipulations. In this way, the moderate nominalist's inability to express or translate L_1 's claims prevents him from criticizing L_1 as incorrect.

Ricketts grounds Carnap's tolerance in a similar philosophy of language, which he characterizes as a rejection of "overarching content". Ricketts explains Carnap's rejection of overarching content in the following passage:

Frege believes that humankind has a common store of thoughts, and that his logical notation, when extended by the addition of non-logical vocabulary, is adequate for the expression of those thoughts that figure in scientific enquiry. Before presenting the axioms and inference rules of his logical system, Frege has endeavored to impart to his readers an understanding of his notation.... Something of the same view is present in the *Tractatus* as well. There Wittgenstein maintains that differences among languages are in the end notational.... Carnap, in adopting the principle of tolerance, and with it a logical pluralism, gives up any overarching notion of content, like those present in Frege or the *Tractatus*. [68, 187]

On the Frege-Wittgenstein view, we begin by grasping a meaning. In constructing a formal system, we attempt to capture this meaning by laying down the appropriate syntactic rules. In the *Syntax*, Carnap rejects this approach by denying that there is any such meaning to be grasped in advance of the syntactic rules of an artificial language. For the Carnap of the *Syntax*, in place of overarching content that precedes language, the content of a sentence is taken to be the class of its logically indeterminate consequences, and two sub-sentential expressions are taken to be synonymous just in case they are mutually replaceable within any sentence p without altering p 's content [11, §49].

The rejection of overarching content, and its replacement by the syntactic con-

ception of content, allows Carnap to respond to the moderate nominalist in much the same way as on Creath's interpretation. Just as the moderate nominalist and platonist do not implicitly define the same concept of class, there is no term for class that plays the same syntactic role in both languages. And for this reason, the moderate nominalist is again unable to translate and deny the moderate platonist's theorem.

How does this inability to deny the postulates of an alternative language, which is secured by the content-relativisms of both Creath and Ricketts, amount to a rejection of language-transcendent fact? The basic thought, as I understand it,³ is that content-relativity implies that a given language's analytic sentences cannot be false in any language. And this, in turn, means that the language's analytic sentences cannot be false in any sense.

First, the total class of languages for science may be divided into two sub-classes: those in which a translation of a given theorem of L_1 , p , is analytic, and those that lack an analytic translation of p . I claim that there is no translation of p that is false in a language belonging to either category.

To see this, consider first a language L' in which there is no analytic translation of p . I believe that L' cannot translate p at all; in general, no synthetic sentence of one language is an acceptable translation of another's analytic sentence. But then the moderate platonist's theorem cannot be denied, and nor can it be false, in L' . Content-relativity enters into the argument at this point, in support of the claim that no synthetic sentence can translate an analytic sentence. Suppose there is no overarching content, but only syntactic role. Any language, say L' , that has no analytic sentence translating p will have no sentence playing the same syntactic role

³The argument to follow was gleaned from conversations with Thomas Ricketts. I am unsure whether he would endorse my formulations.

in L' that p plays in L_1 .

Now consider the second class of languages: those containing an analytic translation, q , of p . Since q is analytic in its language, it cannot be false in its language; if q is an analytic sentence of a language L^* , then it is a theorem in the metalanguage ML^* that q is true.^{4,5}

Since neither p nor any of its translations can be false in a language of either of the kinds discussed, and since these kinds are exhaustive of languages, neither p nor its translation can be false in any language.

According to Herman Cappelen and John Hawthorne [7, 1], there is a “mainstream view” of “contents of thought and talk” according to which (among other things) “[t]here are propositions and they instantiate the fundamental monadic properties of truth *simpliciter* and falsity *simpliciter*”. If this much of the mainstream view were correct, then it might be possible for the proposition expressed by p to be false *simpliciter* despite not being false in any language. The final step of the argument, then, as understood by Creath and Ricketts, is to preclude this possibility by rejecting the notion of monadic truth. Of course, the mainstream view in question does not guarantee the possibility of false sentences that are not false in any language. An advocate of Cappelen and Hawthorne’s mainstream view could

⁴Carnap’s idea is that an analytic sentence is one whose truth “follows from” the metalanguage’s truth theory. I am presently construing this talk of “following from” in terms of logical implication. I am unsure whether this is sufficient for Carnap’s purposes. For problems with construing “follow from” as logical consequence, in the semantic sense, see Awodey [2, 236-7]. I describe my attitude towards problems with Carnap’s semantic notion of analyticity in §2.4, n. 10.

⁵Could this theorem be mistaken? Could ML^* have false-in- ML^* theorems, the theorem in question among them? Thomas Ricketts has suggested to me in conversation that, for Carnap, for an object to be provably in the extension of a predicate guarantees the truth of the corresponding predication on similar grounds, and with the same rational force, as the grammatical rules of the language provide for theorems about grammaticality. Just as we cannot seriously doubt that ‘ $2 + 2 = 4$ ’ is a sentence of the language of *Principia Mathematica*, we likewise cannot seriously doubt that q is in the extension of ‘true in ML^* ’. Both are syntactic facts that are made absolutely plain by the explicitly stated rules of their respective languages.

maintain that a proposition expressed by a sentence can be true or false *simpliciter* only if the sentences expressing it are true or false in their respective languages. I suspect that Creath and Ricketts's Carnap does not take this approach because of concerns that the notion of monadic truth is suspect on independent grounds.

I find the content-relativist's argument persuasive, both in and of itself and as an interpretation of Carnap. However, I do not believe that it is the only basis for tolerance within Carnap's philosophy—as I discussed in §2-3, Carnap's pragmatism provides an independent and compatible basis. Carnap's acceptance of tolerance is thus overdetermined.

The content-relativist and pragmatist interpretations of tolerance yield different critiques of metaphysics, as they yield different responses to the moderate nominalist's argument when the latter is construed internally. The content relativist's version of tolerance turns on the impossibility of *denying* the postulates of another language. But on Creath's account, the reason the moderate nominalist, e.g., cannot deny the theorems of L_1 is that, from his perspective, the theorems are meaningless. Intuitively, this is no reason for the moderate nominalist to withdraw his claim that L_1 is incorrect. Indeed, according to the dogmatist's criterion of language correctness (§3.3), the possession of untranslatable theorems is as much a strike against a language as is the possession of deniable theorems. We should, according to the dogmatist, avoid postulates that we current regard as meaningless in order to preserve as much of our current patterns of reasoning as possible. The dogmatic moderate nominalist could, that is, argue as follows:

(N1') A theorem of a language is correct only if it is translatable into a theorem of L_2 .

(N2') The theorem of L_1 'There are classes of classes' is not translatable into L_2 .

Therefore,

(N3) I cannot choose L_1 as my language for science.

This version of the argument does not presuppose that the moderate nominalist denies a theorem of L_1 . However, I take it, this version of the dogmatist's argument is contrary to tolerance.

Although content-relativity does not play a role in applications of tolerance to dogmatic arguments like (N1')-(N3), this need not prevent the Carnapian from bringing it in to those cases where it does apply. This kind of selective use of content-relativity is compatible with my pragmatist interpretation of tolerance. The kind of dogmatism that argues against an alternative language on the basis of the supposed *falsity* of one of its postulates would then be vulnerable to both the content relativist's response (the dogmatist cannot ascribe any acceptable notion of falsity to the postulate) and the pragmatist's response (the falsity of the postulate would be irrelevant to the decision to use the language). Indeed, pragmatism may even provide the motivation for the content-relativist's premises. Pragmatism would ground the content-relativist's rejection of monadic truth and of overarching content if these concepts make no contribution to predictive success or inferential efficiency. Of course, if such concepts prove useful in, e.g., empirical linguistics, then the Carnapian pragmatist, but not the content-relativist, can incorporate them into her language without abandoning the Principle of Tolerance.

6.3 CONCLUSION

This chapter discussed the language relativist interpretation of Carnap's Principle of Tolerance. On this interpretation, Carnap's tolerance holds that there are no "language-transcendent facts" that could render a language's constitutive postulates false. I distinguished two versions of language relativism: correctness-relativity and content-relativity. The former is the thesis that, since cognitive correctness is language relative, the choice of a language—of a standard of correctness—cannot itself be cognitively correct or incorrect; and the latter is the thesis that, since content is language-relative, no language can deny the postulates of another. I argued that neither version of language relativity can adequately deal with the dogmatic approach to language choice that tolerance aims to address. However, I noted that the Carnapian may nonetheless, compatibly with Carnap's pragmatism, selectively employ language relativity in her critiques of first philosophy.

7.0 DEFLATIONISM AND PRAGMATISM IN CARNAP'S CRITIQUE OF ONTOLOGY

Carnap's conception of linguistic frameworks, and his associated i/e distinction entail that some of philosophers' ontological questions—'Are there numbers?', e.g.—are pseudo-questions that are confused or discontinuous with science. This thought, construed broadly, has received substantial attention in recent work on metaontology and has helped to inspire what Manley calls *ontological deflationism*, i.e., the thesis that "nothing substantive is at issue" in an ontological dispute because "the dispute is merely verbal, or [because] the disputants are not making truth-evaluable claims at all" [50, 4]. In this passage, Manley identifies the two main forms of ontological deflationism. The first is *quantifier variance*; it holds that ontological disputes are verbal because the disputants equivocate on the meaning of the quantificational vocabulary. The second form of ontological deflationism is *anti-realism*, which holds that ontological assertions lack determinate truth-values. Both views have been attributed to Carnap.¹

This chapter uses the discussion of the previous chapters in order to clarify the

¹For the claim that Carnap viewed ontological theses as meaningless or devoid of truth-value, see Chalmers [29, 78] and Jonathan Schaffer [73, 349]. Sider [75], Eklund [34], and Kit Fine [36, 164 n. 2] take Carnap to hold that ontological disputes are verbal. Hirsch, the leading contemporary quantifier variantist, discusses some similarities and differences between Carnap's views and his own, but does not discuss whether Carnap was a quantifier variantist [45, 231-232].

role of deflationism in Carnap’s mature position on ontology, and to compare the latter to contemporary versions of deflationism. On the interpretation I present, Carnap’s critique of ontology contains varied parts (*viz.* pragmatism, verificationism, and the rejection of overarching content), some of which are interconnected, some of which are mutually independent, and some of which are left implicit.

In §3, I argued that, from Carnap’s pragmatist perspective, ontological considerations should not influence our choice of an artificial language for regimenting our theory, as these considerations do not bear on the purposes that language is to serve in science. I pointed out that this view of ontology is a special case of Carnap’s Principle of Tolerance, which maintains that our views about the metaphysical structure of reality more generally should not influence the selection of a language for science. This pragmatist point manifests itself in two separable claims about ontological methodology. The first is the verificationist critique that, I argued (§3.2), underlies Carnap’s rejection of external questions. This is a form of anti-realism and, therefore, of deflationism. However, as I discuss in §7.1.2, it is an importantly different version of anti-realism than Chalmers’s (2009) more recent anti-realist appropriation of Carnap. The second critique of ontology deriving from Carnap’s pragmatism is the rejection of the dogmatic approach to language choice, which is taken up by contemporary “mainstream metaphysics” [50, 4]. Since the pragmatist rejects dogmatic arguments without accusing the dogmatist of asserting cognitively meaningless premises or speaking past her interlocutor, this critique of ontology is not deflationary.

Having examined the nature of Carnap’s anti-realism, and the role that it plays in his views on ontology, I turn to the question of whether Carnap is committed to the other deflationary conception of ontology, *viz.* quantifier variance. §7.2.2 considers hitherto ignored textual evidence for attributing quantifier variance to Carnap. I will

argue, however, that it would have been a mistake for Carnap to adopt the kind of quantifier variance suggested by the textual evidence. I will then argue that an aspect of Carnap’s philosophy of language—his rejection of what Ricketts calls ‘overarching content’—commits him to a kind of quantifier variance that is substantially different from both Hirsch’s contemporary version and the version suggested by the text.

Of course, to point out that the contemporary forms of quantifier variance and ontological anti-realism are less Carnapian than is sometimes assumed is not to criticize these views themselves. My aims in distinguishing Carnap’s views from strong deflationism are rather to bring the former into sharper focus and to add to the menu of options for those who, with Carnap and the deflationists, have misgivings about mainstream metaphysics.

7.1 WAS CARNAP AN ONTOLOGICAL ANTI-REALIST?

Most readings of Carnap’s critique of ontology take him to deny that anything substantive is at issue in ontological disputes. Two ways for a dispute to fail to be substantive are for it to be verbal or for the disputed claim to lack a truth value. Following Chalmers [29], I will call the latter doctrine *ontological anti-realism*. In this section, I consider the scope and nature of Carnap’s ontological anti-realism, and contrast his critique of ontology with Chalmers’ [29] Carnapian anti-realism.

7.1.1 Anti-Realism and Verificationism in Carnap’s Critique of Ontology

As I discussed in §3.2, Carnap takes *external* claims to be without cognitive content, i.e., without truth-value. Since *anti-realism* concerning some domain of discourse

holds that the statements of this domain have no truth-value, Carnap's rejection of external claims amounts to anti-realism concerning external claims.² Carnap's anti-realism concerning external questions follows from his verificationism; for Carnap, external statements are cognitively meaningless because they are neither empirical nor analytic (§3.2).

I also made the point in §3.2 that the verificationist/anti-realist aspect of Carnap's critique of ontology was not fundamental to his critique of ontology in that this aspect derives from Carnap's prior principle of pragmatism. I then argued (§3.3) that verificationism is insufficient for Carnap's critique of ontology in its full generality, which includes the pragmatist objection to dogmatism, i.e., to (N1)-(N3) with (N1) construed as internal.

To sum up, on my interpretation, Carnap's critique of ontology contains an anti-realist element. This anti-realist element rests on verificationism, and is neither fundamental to nor sufficient for Carnap's critique of ontology.

7.1.2 Chalmers' Carnapian Anti-Realism

Chalmers [29] reconstructs the critique of ontology developed in "Empiricism, Semantics, and Ontology" in a manner that avoids any verificationist presuppositions. And Chalmers' critique of ontology rests entirely on his anti-realism, in contrast to my Carnapian pragmatism, whose critique of dogmatism is not anti-realist. In this subsection, I examine more carefully the differences between Carnap and Chalmers concerning ontology. I will not try argue in favor of one account at the expense of

²The characterization of Carnap as an 'anti-realist' might seem inaccurate in light of his claims that he does not deny realism, but rather considers it meaningless. However, the notion of realism that Carnap accuses of meaninglessness differs from Chalmers's notion. When Carnap says that realism is meaningless, he has in mind what we would today call 'direct realism' in the philosophy of perception, i.e., the thesis that we directly perceive material objects.

the other. Rather, I regard the two accounts as compatible, so long as Chalmers’s semantics are taken, as I believe he intends them, as an empirical account of linguistic behavior.

Chalmers proposes a distinction between “ordinary” and “ontological” assertions of existence, claiming that the distinction underlies Carnap’s distinction between internal and external questions. Chalmers prefers his distinction to Carnap’s because “the terminology of ‘internal’ and ‘external’ is too closely tied to Carnap’s theoretical apparatus involving frameworks to serve as a neutral starting point” [29, 80]. Since the i/e distinction presupposes Carnap’s verificationism, Chalmers may be interpreted here as wishing to avoid such presuppositions; see §3.2, n. 22. An *existence assertion*, for Chalmers, is an utterance of a sentence “that appears to assert or deny the existence of certain entities” [29, 81]. *Ordinary* existence assertions are existence assertions “made in ordinary first order discussions of the relevant subject matter” [76, 81]. An *ontological* existence assertion “is an existence assertion of the sort typically made in broadly philosophical discussion where ontological considerations are paramount” [29, 81].

Chalmers develops a framework for formulating realism and anti-realism with respect to ontological existence assertions. The main feature of the framework is what Chalmers calls ‘furnishing functions’. Given a world at which a statement is to be semantically evaluated, a furnishing function fixes a domain of quantification. Unlike the domain restriction functions that are included in more standard models for modal systems, a furnishing function “fixes the overall domain of quantification associated with an assertion” [29, 107].

Some furnishing functions are “admissible”, and others “inadmissible”. On a minimal conception, a domain is admissible at a world just if it is consistent with it.³

³Chalmers [29, 114-16] gives an account of consistency between worlds and domains.

On a more substantial conception, there are “positive constraints concerning certain entities that must be in any domain that is admissible at a given world” or “negative constraints concerning entities that cannot be in any admissible domain” [29, 112] at a given world. To use Chalmers’ example, one might require that domains for the actual world contain fundamental particles and people [29, 112].

Chalmers uses furnishing functions to propose truth conditions for both kinds of existence assertions. The context of an ordinary existence assertion determines the furnishing function by which it is to be evaluated. An ordinary existence assertion ‘ $\exists xFx$ ’ is true in world w just if $f(w)$ contains an F , where f is the assertion’s contextually-determined furnishing function. An ontological existence assertion ‘ $\exists xFx$ ’ is true at a world w if and only if for any admissible furnishing function f , there is an F in $f(w)$.⁴ This same ontological existence assertion is false at w if and only if for any admissible furnishing function f , there are no F ’s in $f(w)$. If there are F ’s in $f(w)$ for some admissible f ’s, and no F ’s for some admissible f ’s, then ‘ $\exists xFx$ ’, when asserted ontologically, is neither true nor false at w .

Assuming a sufficient variety of admissible furnishing functions, many ontological existence assertions would be neither true nor false at a given world w on the semantics just discussed. For example, if consistency is the only constraint on admissibility, then

nihilist domains [which include no composite objects], universalist domains [which include the mereological sum of every two objects], nominalist domains, and Platonist domains will all be admissible, as will the corresponding furnishing functions. In our world w , ‘Tables exist’ will be true at $\langle w, f(w) \rangle$ for some furnishing functions, and false at $\langle w, f(w) \rangle$ for others. So an ontological assertion of ‘Tables exist’ will be indeterminate at our world. [29, 112]

⁴Chalmers’s truth conditions for ontological existence assertions are not obviously correct. At least some ontological assertions of ‘ $\exists xFx$ ’ seem to me to require for their truth at w only that there be an F in $f(w)$ for *some* f . But to decide between these truth conditions and Chalmers’s would require more linguistic data from the ontology room.

Chalmers’s semantics for ordinary and ontological existence assertions capture two broadly Carnapian ideas: that the answer to an existence question is relative to an ontological framework (understood here as a furnishing function), and that distinctively philosophical existence assertions, since they are not tied to some particular framework, are not truth-apt. On Chalmers’ approach, the answers to existence questions are relative to a furnishing function in that different answers to the same question are true relative to different furnishing functions; and putative answers to some ontological existence questions, which do not concern some unique, specified furnishing function, have no determinate truth value. Although Chalmers does not use his conception of furnishing functions to develop an interpretation of Carnap, he does take the apparatus to be a “technical counterpart of a Carnapian ontological framework” [29, 108].

Setting aside these broad similarities, to what extent does Chalmers’s anti-realism capture Carnap’s metaontology? To begin with, how would Carnap have viewed Chalmers’s semantics for existential assertions? Chalmers’s semantics belong to what Carnap called ‘pragmatics’, i.e., to the empirical study of linguistic behavior. Chalmers aims to characterize the actual linguistic behavior surrounding existence assertions, inside and outside the ontology room; he does not advocate his semantics as part of a Carnapian language for science. It is worth noting in this connection that Carnap would have opposed the use of Chalmers’s semantics within the logic of science. Carnap sees the elimination of sentences without truth-value as a central advantage of using artificial languages to regiment scientific theories; see his discussion of ‘green’ [25, 427-9], quoted in §2.1. On the other hand, Carnap rarely addressed issues in pragmatics. His only sustained engagement with a question of pragmatics is his defense of the use of intensions in linguistics in his [18]. Carnap has thus said far too little about pragmatics to rule out Chalmers’s semantics.

There are, nonetheless, two significant differences between Chalmers’s anti-realism and Carnap’s metaontological views. First, Chalmers’s distinction between ordinary and ontological existence assertions is substantially different from Carnap’s i/e distinction. As a result of these differences, Chalmers’s conception of anti-realism is in certain respects broader, and in other respects narrower than Carnap’s anti-realism. For Carnap, verificationism provides the mark of cognitive meaning and of truth-aptness. Chalmers’s anti-realist takes the ordinary/ontological distinction to be indicative of determinate truth-aptness. These are not extensionally equivalent conceptions of what makes an existence assertion truth-apt. Some ontological existence assertions that are indeterminate according to Chalmers are internal, and therefore, for all that Carnap has said, determinately truth-apt. The dogmatist described in the previous chapter, for example, might assert, in the ontology room, that there are F ’s in w , where for some admissible f , $f(w)$ contains an F , and for some admissible f' , $f'(w)$ does not contain any F ’s.⁵ According to Chalmers’s semantics for ontological existence assertions, the dogmatist’s claim is not determinately truth-apt. But this is consistent with supposing that her existence assertion is either empirical or analytic, and therefore internal and, according to Carnap, truth-apt. Chalmers’s anti-realism is, in this respect, broader than Carnap’s.

Now consider ordinary existence assertions that are external, for example, the assertion, ‘There are at least 60,000 angels’⁶ when made in the context of an “ordinary first-order discussion” [29, 81] of theology. The assertion is determinately truth-apt

⁵As James Shaw has pointed out to me, one might deny that the dogmatist makes ontological existence assertions. I do not deny the possibility of a dogmatist’s making ordinary existence assertions. However, it seems likely that at least most dogmatists will assert their views “in broadly philosophical discussion where ontological considerations are paramount” [29, 81], and so will count as making ontological existence assertions.

⁶This seems to be the view expressed by Matthew 26:53: “Thinkest thou that I cannot now pray to my Father, and he shall presently give me more than twelve legions of angels?” (A Roman legion is comprised of about 5,000 soldiers.)

according to Chalmers's anti-realism. But it is also, of course, external⁷ and therefore, according to Carnap, without a truth-value. Examples such as this one show that the verificationist element in Carnap's critique of ontology cannot be formulated by means of Chalmers's apparatus. Chalmers's anti-realism is, in this respect, narrower than Carnap's.

A further difference between Chalmers's anti-realism and Carnap's pragmatism is this. From the point of view of Chalmers's anti-realism, there is nothing wrong with the form of the moderate nominalist's argument, even if the first premise is assumed to be asserted ontologically. Suppose, as seems reasonable, that arguments like the moderate nominalist's are invariably made in the ontology room. Now suppose that no admissible function furnishes the actual world with a domain containing P 's. The moderate nominalist now argues against the F -framework as follows:

1. There are no P 's.
2. Language L_P is committed to P 's.

Therefore,

3. I should not adopt L_P .

The first premise is determinately truth-apt on Chalmers's account (it is true, given my suppositions). But since Chalmers's account provides no means for criticizing ontological claims beyond exposing their semantic indeterminacy, his account provides no objection to the above argument. By contrast, Carnap's critique of ontology aims specifically to show that such arguments are invalid.

I should emphasize that the differences between Chalmers and Carnap just discussed are just that—*differences*; they are not *disagreements*. As I noted above, I

⁷Recall (§3.2) that a statement is external if it is untranslatable into any empiricist language, i.e., if it is neither empirical nor analytic.

believe that Carnap would be able to accept Chalmers's semantics *qua* pragmatics, which is how I take Chalmers to intend his semantics. For reasons I noted above, Carnap would only oppose Chalmers's semantics if they were put forward as an artificially constructed semantical system for purposes of the logic of science.

7.2 WAS CARNAP A QUANTIFIER VARIANTIST?

In the previous section, I clarified the anti-realist element in Carnap's critique of ontology and contrasted this element with Chalmers' ontological anti-realism. Ontological anti-realism is one version of the deflationary view that there is nothing substantive at issue in ontological disputes. In this section, I turn to the other version of deflationism, *viz.* the doctrine that ontological disputes are verbal, and to the question whether Carnap was a deflationist in this sense.

7.2.1 Hirsch's Quantifier Variance

The most influential version of the view that ontological disputes are verbal to be associated with Carnap is Hirsch's *quantifier variance*. This view is motivated by intuitions that ontological questions are at bottom linguistic, and that ontological disputes are verbal. Hirsch, a founder of contemporary quantifier variance, tries to elicit such intuitions by instructing you to “[l]ook at your hand while you are clenching it, and ask yourself whether some object called a fist has come into existence” [44, 67]. Hirsch believes that reflection on this question will lead us to the following view of ontology:

[o]ur task can only be to remind ourselves of relevant ways in which we describe

these facts in our language[;] to ‘command a clear view of the use of our words’, as Wittgenstein put it, that is, a clear view of how the relevant concepts operate. [44, 67].

In a series of papers, Hirsch has attempted to validate and explain these intuitions by giving an account of ontological discourse⁸ on which some ontological debates⁹ derive from the use of different quantifiers. I will focus on Hirsch’s version of quantifier variance because it is the most influential form of quantifier variance in the recent metaontology literature and because certain core features of Hirsch’s view have been attributed to Carnap.¹⁰

Imagine a dispute in which Smith asserts ‘There is a mereological sum of the Eiffel Tower and Clinton’s nose’ and Jones asserts ‘There is no mereological sum of the Eiffel Tower and Clinton’s nose’.¹¹ On Hirsch’s account, the appearance of disagreement between Smith and Jones is due to a misleading homonymy between the sentence asserted by Smith and that denied by Jones. The homonymy is misleading because, according to Hirsch, the string of symbols means something different in Smith’s language than in Jones’s. Let us suppose that for Smith, the sentence means that the Eiffel Tower exists and Clinton’s nose exists,¹² whereas [Begin response 8] Jones speaks plain English—the sentence he denies says that a mereological sum of the Eiffel Tower and Clinton’s nose exists. [End response 8] As a result of these differences

⁸Hirsch does not provide a full-fledged semantics in the sense of a finitely axiomatizable theory that logically entails an interpretation of each sentence of the target language. Instead, he focuses on certain paradigmatic constructions and claims that on the basis of the interpretation of these constructions, the interpreter should be able to interpret further sentences on a case-by-case basis; see Hirsch [45, 245].

⁹Hirsch believes that ontological debates in mereology and the metaphysics of time turn on the use of different quantifiers, whereas certain ontological debates in theology and set theory are substantive.

¹⁰The other main putative example of quantifier variance is the position of Putnam [57, 56].

¹¹The example is from Hirsch [44].

¹²Hirsch [44, 54] proposes this translation. See Hirsch [45, §4] for further discussion.

in meaning, Smith's assertion comes out true in his language, while (assuming, with Hirsch, the falsity in English of mereological universalism) Jones's assertion comes out true in his language. According to quantifier variance, this difference in meaning is due to a difference in the meanings of Smith's and Jones' quantificational vocabulary, i.e., in their uses of the phrase 'there is'.

The difference in meaning between the sentence Smith asserts and the sentence Jones denies does not immediately establish that there is nothing substantive at issue between Smith and Jones. Such a difference in meaning is compatible with there being a substantive question of whose language is cognitively better. For example, Smith's language might contain more defective pseudo-concepts than Jones'; alternately, Jones' might lack legitimate concepts that are required for formulating important truths. To establish that the dispute between Smith and Jones is verbal, then, Hirsch maintains that their languages are *equally good*,¹³ that "the world can be correctly described using a variety of concepts of 'the existence of something' " [44, 51].

As Sider [76, 391] points out, it is trivial that the phrase 'there is' can have different but equally good meanings in different languages; for example, we could decide to use it as a name for Obama. To be metaontologically interesting, then, quantifier variance must employ a more restrictive notion of quantifier meaning. On a standard approach, the semantic value of the quantifier is the domain of quantification. However, this approach is problematic for the purposes of quantifier variance. If the quantifier variantist adopts this conception of quantifier meaning, then she would hold that Smith's claim is true because his variables range over a domain containing the mereological sum of the Eiffel Tower and Clinton's nose, and that Jones' claim is also true because he has restricted his domain of quantification so that it does

¹³Eklund [34, 140] discusses the equal goodness condition.

not include this same object. While Smith can adopt this view of the dispute, Jones cannot: if Jones were to acknowledge that Smith’s domain of quantification contains the sum of the Eiffel Tower and Clinton’s nose, then he would have to acknowledge the existence of this sum.¹⁴ Eklund [34] offers another reason why the quantifier variantist cannot take quantifier meanings to be domains of quantification. If Smith can express a truth by including the sum of the Eiffel Tower and Clinton’s nose in his domain, then his language would seem to be more “expressively resourceful” [34, 139] than Jones’s, which cannot express this truth. But then the dispute between Smith and Jones isn’t dissolved as being verbal so much as it is resolved, on cognitive grounds, in favor of Smith; as Eklund puts it, Smith “simply wins” [34, 139].

To avoid these problems, Sider [76] proposes the following general approach to quantifier meaning on behalf of the quantifier variantist. We begin with the notion of a *candidate meaning* for the language in which one of the problematic ontological claims is made. A candidate meaning is a semantic interpretation that (a) compositionally determines a truth condition for each sentence of the language and (b) validates the core inferential rules of quantification theory. One way to construct a candidate meaning for an alien language is to translate the alien sentences, by means of a translation function Tr_i into my own language in a way that satisfies (a) and (b). With such a translation function, the denier of F s would be able to translate the believer’s sentences into her own sentences, and then characterize the believer’s quantifier “by saying in [her] own terms what sentences about it mean; [she] could, that is, say that an arbitrary sentence, ϕ , of [the believer’s language] means the same as [her] sentence $\text{Tr}_i(\phi)$ ” [76, 394]. Although each sentence of the believer’s language would have a translation in the denier’s language, on this approach, the believer’s quantifier need not itself correspond directly to the denier’s. Now it remains

¹⁴Sider [76, 393] makes this argument.

trivial that there are many candidate meanings, in this sense. Quantifier’s variance’s distinctive claim, then, is that there is a variety of *equally good* candidate meanings. (Sider maintains, by contrast, that there is a unique “most natural” quantifier that is cognitively better—that carves nature at more of its joints—than any other [76, §§7-10].)

The aspect of Hirsch’s quantifier variance that has attracted the most criticism is his empirical claim that on the correct semantic interpretations, the parties to certain ontological disputes employ different quantifiers. This claim is disputed by Bennett [6], Chalmers [29], Dorr [33], and Hawthorne [42].

7.2.2 Carnap and Three Varieties of Quantifier Variance

With this account of quantifier variance on the table, we can now consider whether Carnap was a quantifier variantist. Carnap, like Hirsch, clearly thinks that ontological disputes involve some kind of linguistic mistake. But do these two philosophers agree on what the mistake is? One might think not, for a reason pointed out by Eklund [35]. As I discussed above (§7.1.2), Carnap’s critique of ontology does not seem to involve much in the way of interpreting actual, observable linguistic behavior—it does not seem to presuppose any substantive theories of pragmatics. It is therefore reasonable to assume that, if Carnap accepted quantifier variance at all, he did not accept it as a semantic theory of anyone’s actual linguistic behavior. But how else might Carnap have intended quantifier variance? Carnap [14] holds that philosophical theses should be *explicated* as linguistic recommendations. The most advisable explication for a given metaphysician’s thesis can, I take it, diverge from the most empirically warranted semantic interpretation of her thesis. If Carnap is a quantifier variantist, then, he might have held that differing ontological theses are best

explicated in terms of differing quantifier meanings.

Are there positive reasons to read Carnap as a quantifier variantist? The most sustained discussions of Carnap and quantifier variance are contained in Eklund [34] and Sider [75]. Eklund [34] motivates his interpretation of Carnap as a quantifier variantist by asserting that Carnap “thinks of ontological questions as somehow shallow” [34, 142] and by suggesting that quantifier variance is the best, or perhaps the only, “view on which ontological questions are shallow” [34, 142]. Sider [75] begins with the assumption that Carnap regards ontological disputes as verbal in the sense that, if I assert and you deny ‘There are F s’, then the string of symbols means different things for you than for me. He argues that this difference in meaning cannot be due to our meaning different things by ‘ F ’, but rather must be due to our meaning different things by ‘there are’.¹⁵

Neither Eklund nor Sider motivate this assumption, on which their interpretation of Carnap rests, that Carnap regarded ontological disputes as shallow or verbal. And the assumption stands in need of motivation, since we now have an alternative account (*viz.* pragmatism) of Carnap’s critique of ontology. And this account does not presuppose that ontological disputes are verbal. Rather, it holds that the reason the moderate nominalist’s argument fails is that the incorrectness of a language’s postulate is not germane to the decision to use the language.

¹⁵Sider’s argument for blaming the quantifier concerns the mereological nihilist, who holds that there are no mereological sums, and the mereological universalist, who holds that for any objects O_1, O_2, \dots, O_n there is a mereological sum composed of O_1, O_2, \dots, O_n . Sider points out that according to the nihilist, if there were exactly two simples, then the sentence ‘ $\exists x \exists y [x \neq y \wedge \forall z (z = x \vee z = y)]$ ’ (i.e., there are exactly two objects) would be true. The universalist, on the other hand, would claim that if there were two simples, then the same sentence would be false, as there would be a third object composed of the two simples. But according to Sider, the nihilist means the same as the universalist by the connectives ‘ \wedge ’ and ‘ \vee ’, and by the relation symbol ‘ \neq ’. It follows that if they mean different things by the sentence, and if this difference is due to their meaning different things by one of the sentence’s constituents, then the different sentence meanings must be due to their containing different quantifiers.

There is one piece of direct textual evidence for attributing a kind of quantifier variance to Carnap that has been overlooked in discussions of quantifier variance and Carnap's views on ontology. In §3.3, I discussed the dispute between the moderate nominalist and platonist. I quoted Carnap to the effect that the moderate nominalist's argument would be invalid regardless of whether his premise (N1) is internal or external. Then, drawing on pragmatism, I proposed a response to the argument on its internal interpretation on Carnap's behalf. I did not, however, discuss Carnap's *stated response* to the argument on its internal interpretation. I will now turn to this stated response. I will argue both that the pragmatist critique of ontology that I attributed to Carnap is preferable from Carnap's perspective, and that there is an interpretive difficulty with the stated response.

Carnap [21] imagines the moderate nominalist and platonist from the example I have been discussing specifying the classes D_1 and D_2 as the domains of their respective languages L_1 and L_2 . D_1 is described as containing the physical objects, classes of physical objects, and classes of classes. D_2 is said to contain only physical objects and classes of physical objects. Carnap argues that (N1) of the nominalist's argument ('There are no classes of classes'), meant as an internal, analytic claim of a language like L_2

would merely say that in D_2 there are no classes of classes. But this statement is not incompatible with the sentence (4) [i.e., 'There are classes of classes'] in L_1 because (4) says that in a different universe of discourse, D_1 , there are classes of classes. Thus we see that the difference between [the platonist] and [the nominalist] is *not* a difference in *theoretical* beliefs as X_2 seems to think when he makes the pseudo-assertion (7) [i.e., (N1)]; it is merely a *practical* difference in preferences and decisions concerning the acceptance of languages. [21, 873]

In this passage, Carnap tells us that the nominalist's assertion of (N1) says that there are no classes of classes in the domain D_2 , whereas the homonymous theorem

of L_2 says that there are no classes of classes in the potentially distinct domain D_1 . Therefore, (N1) may be true in the nominalist's language and false in the platonist's. But then the nominalist's derivation of (N1) does not give him reason to deny that 'There are classes of classes' is true in L_1 . Therefore, his assertion of (N1) is compatible with L_2 's ontological commitments, and there is no theoretical disagreement between the two logicians.

[Begin response 9] On a plausible reading, this objection to the nominalist's argument rests on quantifier variance (and specifically, on a form of quantifier variance that Sider and Eklund reject as untenable; more on this below). Sider and Eklund both start with the assumption that Carnap attempts to dissolve ontological disputes by construing both sides as making compatible claims, each of which may be true in its language. They believe that the most promising approach to making good on this assumption is to treat the disputants' quantifiers as differing in meaning. The passage just quoted seems to bear out the assumption in question: according to Carnap, the nominalist's assertion is "not incompatible" with the seemingly incompatible theorem of the platonist's language. And Carnap explains that this compatibility results from the use of different domains of quantification; and these amount to different quantifier meanings.

Even on the quantifier variance reading of the passage, there are at least two considerations that should make us reluctant to place quantifier variance at the center of Carnap's critique of ontology. First, "Empiricism, Semantics, and Ontology", Carnap's first systematic engagement with ontology, was originally published in 1948. Carnap does not make the point about the compatibility between the internal existential claims of different languages until the passage in question, which was published in 1963. By contrast, an objection of the kind Carnap was after falls naturally out of his tolerance and his underlying pragmatist conception of language choice, and

these principles are front and center in all of Carnap's discussions of ontology.

Second, even if we allow that Carnap in fact advanced the quantifier variance objection discussed above to the moderate nominalist's internal argument, his aims are better served by the pragmatist objection. This is because the version of quantifier variance assumed in the quantifier variance reading of the quoted passage is insufficiently neutral for his purposes. As both Sider [76, 393] and Eklund [34, 139] point out, and as I discussed above (§7.2.1), the "domain-variance" version of quantifier variance delivers victory to the platonist in her dispute with the nominalist. Carnap held that the dispute was *misguided*. But if the debate has a winner, then it is not misguided. Therefore, since Carnap's version of quantifier variance yields a winner of the debate, Carnap cannot rely on this version of quantifier variance for his critique of ontology.¹⁶

Moreover, there is another reading of the passage, one that does not attribute quantifier variance to Carnap.¹⁷ Carnap notes that the moderate nominalist's assertions of non-existence are in fact statements about what belongs to the domain D_2 . This means that the assertions are best construed as claims about a linguistic framework, i.e., a language for science. Having construed the assertion as semantic in this sense, Carnap then notes that what is at issue between the moderate nominalist and moderate platonist are "decisions concerning the acceptance of languages". And a difference with respect to such a decision, he maintains, "is *not* a difference in *theoretical* beliefs", but is rather a "*practical* difference". On this interpretation, Carnap is not invoking quantifier domain variance at all, but is only making the kind of pragmatic critique of the moderate nominalist's approach that I have emphasized.

¹⁶Of course, Carnap, on my interpretation, would deny that Smith's greater expressive resourcefulness, in and of itself, counts in favor of choosing his language. But it is pragmatism, and not quantifier variance, that grounds this denial.

¹⁷This reading was suggested by James Shaw in a personal communication.

[End response 9]

While we might be able to set aside the domain-variance suggested by the passage I have been discussing, there are fundamental aspects of Carnap's philosophy of language that imply a different kind of quantifier variance. In §7.2.1, I discussed Creath's and Ricketts's content-relativity interpretation of Carnap. According to these interpretations, Carnap takes the content of an expression to be determined by its syntactical role within the language, and he denies that there is a meaning that is prior to, or that can be captured by, the syntactic rules governing the expression.

This rejection of overarching content grounds a kind of quantifier variance. To see this, assume, with Carnap, that no string of symbols plays the same syntactic role within L_1 as (N1) plays within L_2 . If we also assume, again with Carnap, that there is no overarching content that could belong to sentences playing substantially different syntactic roles within their respective languages, then an assertion of (N1) in L_2 is untranslatable into L_1 . The moderate platonist would not, therefore, be able to discuss, much less deny, what the moderate nominalist asserts when he asserts (N1). Therefore, any dispute between the two logicians about the truth of (N1) would rest on an equivocation. Now add as a final supposition that this equivocation traces back to the symbols that constitute (N1) in the respective languages. Then the envisioned equivocation in the two uses of (N1) is in part due to the different meanings that the two languages give to the quantifiers. But this is the quantifier variantist thesis that ontological disputes rest on equivocation in the use of quantifiers. We have thus arrived, by way of rejection of overarching content, at a kind of quantifier variance.

It is worth noting just how much this version of quantifier variance differs from Hirsch's. The two positions share only the thesis that philosophers equivocate in their uses of their quantifiers when they debate ontology. The two versions arrive at this common point despite starting from opposing philosophies of language. Carnap's

quantifier variance presupposes the untranslatability of (N1) from L_1 into L_2 , or *vice versa*. Hirsch, by contrast, motivates his quantifier variance on the basis of the principle of charity in translation [45, 238-44]. According to Sider, Hirsch's view is best understood in terms of a translation function Tr_i , that takes sentences of my interlocutor's language into sentences of my own. However, given the rejection of overarching content, there is no such translation function that takes a sentence of L_1 into a synonymous sentence of L_2 . Furthermore, these differing conceptions of semantics generate differing understandings of the equivocation that accompanies ontological debates. Whereas for contemporary quantifier variantists, the quantifier is uniquely to blame for the equivocation that characterizes ontological disputes, the Carnapian version distributes blame across all expressions in the disputed sentence.¹⁸

Does Carnap's quantifier variance have any implications for the pragmatist critique of ontology that I have proposed on his behalf? In §6.2, I argued that there is no incompatibility or tension between pragmatism and content-relativity, and that the latter may even follow from the former. On the other hand, if the notion of overarching content can be spelled out in an empiricist language, then one can consistently be a Carnapian pragmatist in regard to ontology while also accepting overarching content—and thereby rejecting Carnapian quantifier variance. On this view, there can be ontological disputes that are entirely substantive, in that they concern truth-evaluable claims and involve no equivocation, but that are nonetheless misguided, in that the disputants advance considerations that have no bearing on the choice of a

¹⁸In n. 15 of this chapter, I presented Sider's argument that the quantifier variantist must blame the quantifiers for the equivocation that they believe characterizes ontological disputes. What would the content-relativist say about Sider's example of the nihilist and universalist, who formulate their positions in terms of only inequality, conjunction, disjunction, and quantification? Sider assumes that the nihilist and universalist do not equivocate in their uses of inequality, conjunction, or disjunction. Whether or not the content-relativist can deny this assumption will depend on how we understand the syntactic role that is constitutive of content, on Carnap's view. I will set this question aside.

language for science.

My interpretive claim is that both critiques of ontology can be extracted from Carnap's stated views; I claim that he is committed to both. Carnap left both critiques of ontology implicit, and it is for this reason, I believe, that he tends to give the impression of having a more unified critique of ontology than I have claimed he has. He should, then, welcome both the pragmatist and quantifier variantist critiques of ontology as friendly clarifications of his views.

7.3 CONCLUSION

Recent years have witnessed a proliferation of deflationary meta-ontological positions. This has led to an increase in interest in Carnap's writings on ontology, which are often regarded as contemporary ontological deflationism's founding documents. My goal in this chapter was to clarify the ways and extent to which Carnap was a deflationist. I argued that Carnap's rejection of external questions amounts to an anti-realist position. However, I also argued that Carnap's critique of ontology extends to some arguments whose premises are internal, and that his rejection of external questions is therefore not sufficient for his critique of ontology. Carnap's rejection of overarching content is a second source of deflationism in his views, as it implies a kind of quantifier variance, though one that is significantly different from Hirsch's.

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