Carnap's Conception of Philosophy   Wolfgang Kienzler

Abstract:

Contrary to widespread opinion, Carnap's general view concerning the nature of philosophy remained remarkably stable throughout his career. He saw his own work as lying within the philosophy of science, using formal logic as its most essential tool – he thus regarded his work to be of a logical nature, that id to say a kind of explication from the start. Carnap was little interested in any extended meta-philosophical reflections and when confronted with the issue from 1927 on he readily adopted Wittgenstein's Tractarian suggestion that philosophy was not a theory but rather an 'activity of clarification'. Only in his *Syntax* period Carnap tried to develop a notion of philosophy in which the sentences of philosophy could be called meaningful and not 'nonsensical', as the *Tractatus* famously had called them. This attempt included the introduction of the distinction between the formal and material mode of expression. While Carnap believed this to be a move against Wittgenstein, ironically, it turned out that in making it he had actually spelled out an element from the *Tractatus*, as could be inferred from Wittgenstein's 1932 accusation of plagiarism. After this attempt at establishing philosophy as an exact theory failed Carnap returned to a more relaxed but again, or rather still Tractarian version about the elucidatory nature of philosophy, with explication being an important element.

1. Introduction

In one respect it seems easy to explain Carnap's conception of philosophy: he is believed to be a proponent of *scientific philosophy*, or, stating it in other words, many believe that he tried to help to establish philosophy as an exact science. In 1928 Carnap wrote about 'taking the postulate of scientific rigour seriously in philosophy' (1928a, p. XIX), and this sounds as if philosophy itself ought to be transformed into a rigorous or exact science. However in a later interview Carnap explained how this idea rested on a simple misunderstanding. When asked about the term 'scientific philosophy' he replied that this was more of a political slogan than a good philosophical label:

'I am not certain if this is the best term (*Bezeichnung*), but we used it often, and I believe that it has a certain justification. Of course, this is not to be misunderstood as if philosophy were scientific in the sense that it used the same method and had the same content as science. This is quite certainly not the case. There is a quite obvious difference. The task of science is to find facts about nature, to organize and compare them, to explain etc., and to thus give us a picture of nature. Philosophy on the other hand should not intrude into the field of science. Sometimes philosophers have done this, but I think this is unjustified.'[1] (1993, p. 133)

For several reasons, however, it is difficult to get a positively clear answer about Carnap's conception of philosophy. For one thing, Carnap himself never gave a final version of his views on this topic in detail – and he also remained very reluctant to have any label stuck to his work.[2] Secondly, there is a strong current in Carnap's thought favouring natural science as well as formal logic over the endless debates of philosophy. This makes it doubtful that his work can be addressed as 'philosophical' in any traditional sense of the term. Part of Carnap's work can be seen as successive attempts to do away with everything that had been or could be labelled 'philosophy'.[3] On the other hand, there is scarcely a philosopher who would try harder to reconcile (seemingly) opposing camps

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[1] In 1929 Carnap had spoken of 'modern scientific philosophy' (2004c, p. 62) and in 1930 he had written that the journal *Erkenntnis* was to 'promote the new scientific method of philosophy' and 'to install a strictly scientific method of philosophy in place of metaphysical concept-poetry (*Begriffsdichtung*)' (1930a, § 1).

[2] To quote just one example: in January 1934 Carnap non-endorsed (without outright rejecting it) the labels 'positivist' as well as 'empiricist', making it hard for Max Black who tried to stick *some* kind of label on the brand of work Carnap and the Vienna Circle were doing (1934b, p. 28-29); compare Black's Introduction, stating: 'This and other descriptions occurring in the above are misleading if taken too literally.' (ibid., p. 9 n. 1) From here it is only a small step to a Tractarian attitude of 'strictly speaking nonsense'. Carnap himself states at the end of his Author's Introduction: 'For *we pursue Logical Analysis, but no Philosophy*.' (ibid., p. 29; last sentence of the Introduction) This is one of the few places where Carnap plainly rejected the label 'philosophy'.

[3] Carnap continued to use this term, unlike Neurath who insisted that the word 'philosophy', and for that matter the term 'scientific philosophy' should no longer be used (as related by Carnap in 1934d/1937, § 72).

and points of view than Carnap.[4] It seems that most often only his friends could move him to take part in controversy and argument. One further obstacle has been little noted: Those publications of Carnap which gained the greatest popularity are usually those that are least characteristic of his most basic attitude. Therefore his best-known works like the pamphlet *Scheinprobleme* the Vienna Circle Manifesto (which he co-authored), *Überwindung*, and Part V of *Logical Syntax* are parts of his work that are in some respects quite atypical of Carnap's general spirit. More typical are those books written in text-book style, like *Der Raum*, most of *Aufbau*, *Abriss*, the first parts of *Syntax*, and his later quite technical work.[5] Ideally, he preferred his own work to be 'boring, but fruitful', rather than 'exciting, but giving rise to argument'. In this respect he was always reluctant to be drawn into philosophical controversy, and thus into philosophy. The only example where he seems to have wished controversy is his critique of Heidegger in *Überwindung*, and this is one of the few instances where Carnap did not try to give his opponent a fair chance.[6]

All of this makes it advisable not to look at his *words and slogans* but rather at the kind of *work* Carnap performed during the different phases of his career. Here we find him mainly engaged in two different kinds of activities: for one he was interested to *forge*

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[4] In this respect Carnap can be compared to Leibniz: He (almost) always looked for the grain of gold in other attempts, kindly overlooking the things he could not use.
[5] See the Postscript to this article for more on this issue.
[6] It is noteworthy that Carnap used the example from Heidegger already in a talk addressed to a general audience in October 1929 (see Dahms 2004, pp. 365-7 for details). We also know (for details see Friedman 2000, pp. 11-23) that Carnap was quite well-informed about Heidegger, and therefore he really should have realized that Heidegger was doing his own version of overcoming metaphysics, and that therefore he very deliberately used his vocabulary around the *Nichts* in a way that would violate all rules of logic– so that Carnap really was breaking down a door already open when he criticized Heidegger the way he did. Actually Carnap even explicitly admitted that Heidegger was talking nonsense quite on purpose – so that the point of disagreement between both of them could not possibly rest in the issue whether Heidegger's sentences could be written down in a logical symbolism. Carnap never explicitly mentions the main point of this *gigantomachia* which seems closely connected to this idea voiced by Heidegger: 'Philosophy can never be measured by the standard of the idea of science.' (Heidegger 1998, p. 96) *This claim*, however, could not be refuted by a small translation exercise. It is also noteworthy that in *Syntax* Carnap did not use any Heidegger quotes for his "deterring examples' (see below).

tools of analysis and to *build axiomatic structures*, and this has often been compared to the work of an engineer (not really a scientist), and secondly we find him sorting out conflicting approaches and views, trying to *clarify the conceptual relations* between philosophical schools and positions. In doing this Carnap very typically did not hold any particular view of his own, rather his work can be compared to that of a *referee*.

To a large extent, Carnap's work can be regarded as work in *logic*. Carnap was interested in logic in several ways: First, logic is about framing precise *concepts*, and thus it is about developing and determining conceptual and logical distinctions. Secondly, logic is about clarifying *propositions* made up of concepts and about deciding which propositions are well-formed and thus logically good and which ones are not. Thirdly, logic is about the way *propositions are connected*, how they can be deductively (or inductively) organized into inferences or proofs. And finally, logic is about the way all of this can be done in the best and most effective way. In this way Carnap's philosophical interests agree very much with the order according to which traditional logic discusses concepts, propositions, inferences, and finally methods.[7] This also fits in with Carnap's idea that his own work is (mainly) analytic and in a certain sense non-empirical. He was always primarily interested in logically analyzing (mainly) physical science, yet the empirical part would always have to be supplied by physical research. His own work of logical analysis would then consist in organizing these empirical findings, but not in extending the empirical part of science.[8] So, 'scientific philosophy' for Carnap always consisted in *analyzing science*, not in *doing science* himself.[9] His later turn towards analyzing the logic of the *languages* of science transforms his tools but does not change this basic analytic attitude.

As Carnap was not interested in logic just for the sake of logic alone but rather for the sake of doing philosophy of science, he may best be characterized as doing *applied logic*, or maybe as developing 'logic to be applied to science'.

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[7] Carnap explicitly uses this arrangement in 2004b/1934a, § 1 ('concepts, propositions, proofs, theories of science' – with 'proofs' replacing the more traditional 'inferences').
[8] This is emphasized at the end of 2004b/1934a.
[9] Carnap criticized Russell quite early for transgressing this distinction (see below).

In relating his logical approach to philosophy in general Carnap shifted between two different attitudes: On one hand he was quite content to work in one limited field within philosophy, and he was happy to leave questions of a more general nature that he would not particularly be interested in, to others. On the other hand, however, he came to be convinced that only questions that could be precisely framed in logical terms were at all meaningful, so that any question lying outside this domain would not just be uninteresting but rather conceptually incoherent and thus meaningless. Sometimes the result seemed such that no part of old philosophy would remain valid and that the field of logic would correspond to very little that had earlier been called 'philosophy'. However, Carnap did not develop this wider perspective himself but he accepted it more or less wholesale from Wittgenstein.

While it seems clear that none of Carnap's own work actually ever was dependent on empirical research and thus a posteriori, Carnap still always hesitated to call his own work *a priori*.[10] This attitude can be explained by distinguishing an 'absolute' from a 'relative' a priori. Carnap did not want to set up frameworks that science would have to fill in, but rather to organize the empirical and conceptual work already done by others. Systematically, however, his work could well be classified as a priori in the sense that his own work was carried out independently of any *additional* information. In his later work Carnap did discuss such seemingly a priori questions as setting up all-over frameworks and languages, but even then he always emphasized that these matters could only be meaningfully discussed in situations where we already have a lot of empirical data and now try to decide how best to speak about and organize them. This attitude made him reject the Kantian synthetic a priori simply because Carnap did not believe that anything useful could be said *antecedently* to any and all experience as he believed Kant was trying to do.[11] The analytical frameworks and axiomatic systems Carnap was working out should always take a form influenced and suggested by empirical findings, - even though he always emphasized the wide range of conventional possibilities to set up such systems.

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[10] His hesitating on this point contributed much to the widespread impression that Carnap really was an empiricist.

[11] Of course, this is a somewhat one-sided reading of Kant, especially in view of the fact that Kant developed his own work in response to (and explication of) Newtonian Physics.

2. Early Carnap: Distinguishing concepts and giving constructions –moving away from traditional philosophy

Logic is the method for doing philosophy. [...] There is no such thing as philosophy in the shape of a theory, i.e. a system of distinct propositions separate from science. Doing philosophy means nothing else but this: to clarify the concepts and propositions of science through logical analysis. (1930a § 1 and § 9)

The task of philosophy is the logical clarification of thoughts. Philosophy is no doctrine but an activity. [...] The result of philosophy does not consist in 'philosophical propositions', but in the clarification of propositions.[12] (TLP 4.112)

Throughout his career Carnap wanted philosophy to be scientific (*wissenschaftlich*), and throughout his career he lamented that philosophy did not (yet) live up to this standard. However, as already explained, Carnap did not advocate the type of radical empiricism postulating that the propositions of philosophy should themselves be empirical.[13] For Carnap, philosophy should be scientific in spirit and attitude, not in method and letter.[14] Carnap was not the first one to have the notion that philosophy should be scientific. The Neokantian School that formed his academic background had been propounding this idea forcefully for decades.[15]

In the beginning of his career Carnap did not reflect on the nature of philosophy, rather he was interested 'in the relation between fields which, according to customary academic divisions, belong to different departments' (1963a, p. 11), namely philosophy and

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[12] Carnap quotes this frequently, e.g. in 1934a, § 2; 1934c, Appendix to III; *Logical Syntax* § 73.

[13] This claim that philosophy should be 'naturalistic' separates Carnap from Quine. Any kind of principled 'naturalism' is quite foreign to Carnap.

[14] In the Preface to the *Aufbau* we read: 'Above all it is a certain *scientific attitude* that this group has in common.'(1928a, p. XVIII, emphasis in the original)

[15] To give just one example: Wilhelm Windelband famously translated Plato's *Republic* such that we read that, 'scientists would have to be kings". Another famous example is Husserl's article *Philosophy as a Rigorous Science* (1910). However, Husserl refers to the paradigm of rigorous mathematics while Carnap thinks rather of exact physics.

physics. His original dissertation project, inspired by *Principia Mathematica*, was to set up 'Axiomatic Foundations of Kinematics' (ibid.) –a physicist rejected this as too philosophical and a philosopher as really belonging to physics – so nothing came of it. In his actual dissertation, *Der Raum,* subtitled 'a contribution to philosophy of science (*Wissenschaftslehre*)' Carnap did some rather different work. He 'distinguished three meanings of this term ['space']' (1963a, p. 12) in order to show that most controversies about the nature of space were pointless because the different authors 'talked about entirely different subjects' (1963a, p. 12). As a result of his investigation Carnap did not put forward his own philosophical theory of space, but he rather suggested that there was no need for any philosophical theory once the concepts had been disentangled.[16] This also meant that he felt no need to join any philosophical party or camp. It is also noteworthy that the term 'philosophy' hardly ever occurs in this early work of philosophy of science. Carnap's early notion of philosophy can thus best be described as a strong interest in problems connected to the foundations of modern physics. There he held a two-level view: first we have to sort out conceptual ambiguities and after this has been achieved we must give not philosophical theses but rather we should set up a formal axiomatic system. I this sense, the notion of an axiomatic system very much embodies Carnap's early ideal of philosophy.[17]

Concerning Carnap's more general ideas about philosophy, Russell was the prime inspiration. In 1921 he read *Our Knowledge of the External Wold, as a Field for Scientific Method in Philosophy*.[18] He used a quote from that book as a motto for the *Aufbau* and later summarized the impact of reading Russell's book:

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[16] Carnap distinguished topological, intuitive and metrical space, none of which had any particular affinity to philosophy.

[17] This attitude is closely related to the one expressed in his famous Principle of Tolerance. Actually, it might be argued that earlier in his career Carnap was more tolerant than later on because his tolerance then extended not just to the construction of formal languages but to the entire scope of doing philosophy. Thus we might speak of the 'Principle of Restricted Tolerance'.

[18] More details on this can be found in Reck 2004.

And indeed henceforth the application of the new logical instrument for the purposes of analyzing scientific concepts and of clarifying philosophical problems has been the essential aim of my philosophical activity.[19] (1963a, p. 13)

This retrospective statement, however, is somewhat ambiguous: It sounds as if work in conceptual analysis and clarification should be central to Carnap, while the more constructive task of building axiomatic systems is left unmentioned.[20]
The three monographs Carnap subsequently wrote further develop the lines of work he envisaged, building tools, then setting up some construction; and finally (but least importantly) putting all of it to work in philosophy. First, he wrote *Abriss der Logistik*, the first textbook of modern logic in German – this was to be the tool (the *organon*) for all subsequent work.[21] The second, most voluminous and important, book was *Der logische Aufbau der Welt*, originally titled 'Constitution Theory' (*Konstitutionstheorie*). This book does not claim that the world has a logical structure but it rather sets up a multi-layered conceptual system in which all possible concepts are to be constructed from a clear-cut and well-defined basis in order to set up a 'genealogy of concepts' (1928a §1), or a 'unified system of all concepts' (1928a, §2).
It is, however, important to note that Carnap did not try to dogmatically set up a constitutional system, but rather he offers his system merely as an *example* towards such a system. His aim is more general and methodological than simply constructive. He wanted to show the possibility that a constitutive system *could* be derived, and did not claim to give the one true system. His 'theses' are then more precisely about the formal

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[19] It is noteworthy that Carnap is at no time particularly interested in Russell's specific kind of 'scientific philosophy', aiming at actual knowledge 'of the external world'. In this respect Quine is a Russellian but Carnap never was.
[20] This passage sounds like it was written in reaction to Strawson's later critique. It thus rejects the sharp distinction Strawson is making between clarificatory work on concepts on one hand and constructive work at axiomatic systems or formal languages on the other (Strawson 1963, p. 503).
[21] The book was written in 1924, but only published after the *Aufbau* and *Scheinprobleme* in 1929. It was to help in the double task 'for the analysis of concepts and the construction of deductive systems' (1963a, p. 14). Carnap produced a second version in his textbook (1958).

and material *features* any such a constitutive system would need to have (see 1928a, §156). This attitude, too, pre-shadows his later attitude of tolerance in *Syntax*.

Carnap insisted that work on his constitutive system was neutral on most, if not all, traditional philosophical issues (1928a, §177).[22] In doing this he located his own work *outside* the domain of philosophy; so in an important sense he is not offering a *philosophical* theory. Even the choice of his starting-point in our individual perception of similarities, his 'methodological solipsism' (1928a, §64), was just a (practical) choice, out of convenience, and not intended to put forward any philosophical theory.[23]

In addition to the constructive work a special section of his book (§ 157-183) offers some 'applications' to more traditional philosophical problems.[24] In an important sense Carnap conceives of his *Konstitutionstheorie* not as a part of philosophy, but as a piece of purely instrumental, non-philosophical engineering. This becomes evident when he explains that his system can also be used as a tool in order to clarify philosophical issues. This is possible not because his system would contain any 'new insights', but only because it offers a 'more unified ordering of concepts' (1928a, §157). Carnap concludes that philosophical controversy, especially around the issues of 'realism, idealism and phenomenalism' (1928a, §177) must take place in the realm of metaphysics, and that his constitutive theory is perfectly compatible with all three options. Carnap shifts between the more reluctant attitude that his own work and traditional philosophy are mutually compatible and the more severe stand that his work shows metaphysical debate to be superfluous, or even senseless. He avoids to take part in the metaphysical debate, suggesting that 'realism as an explicit thesis is illegitimate' – at least within the domain

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[22] Carnap called work on his system a part of 'epistemology', but this is not to be confused with traditional epistemology. He is not offering epistemological theses but logical constructions that are to be technically convincing but philosophically neutral (1928a, §178). Thus he uses the term 'epistemology' in a new, technical sense.

[23] In his later writings Carnap stresses these different possibilities, in § 64 of the *Aufbau* he does argue in favor of his choice.

[24] In §157 Carnap remarks that the 'center of gravity' of his work lies with the constitutive system, not with any applications. These are offered as a supplement only.

of constitution theory (1928a, §178). Already here, he uses different languages quite freely.[25]

While Carnap, in the *Aufbau*, had only hinted at his critical attitude towards any metaphysics, aiming at the greatest possible neutrality even here, his third book (really a pamphlet of just over forty pages), *Scheinprobleme in der Philosophie*, aimed at a more general public, striking a quite decisive and forceful note on this question. The title already suggests that 'philosophy' really *consists* of pseudo-problems, and that the result of logical (and 'epistemological', as Carnap again terms it) analysis will be the dissolving of philosophy as it had been traditionally understood. The pamphlet is intended to give some examples of how logical analysis can bear on traditional philosophical problems. *Scheinprobleme* tries to show that 'epistemology' can be purged of pseudo-problems like questions about the reality of other minds and about realism and idealism. The pamphlet seeks not to open discussions about these matters but to simply and definitely end them. In his summary Carnap included an overview of all 'possible counter-views', each of which is in turn answered and shown to be pointless. This underlines his attitude of sweeping-up.

The criterion of informativeness (*Sachhaltigkeit*) is intended to divide all questions and statements into two fields: either we have some empirical content, then we have a meaningful statement, or we have some purely analytic, formal structure, then we are within logic and mathematics; but if we leave these two domains we have nothing substantial left to say. Beyond these domains there is just metaphysics which Carnap

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[25] In his autobiography Carnap relates how he 'used different philosophical languages, adapting myself to [my various friends'] ways of thinking and speaking. [...] I was surprised to find that this variety in my way of speaking appeared to some as objectionable and even inconsistent. I had acquired insights valuable for my own thinking from philosophers and scientists of a great variety of philosophical creeds. When asked which philosophical positions I held, I was unable to answer. [...] Only gradually, in the course of years, did I recognize clearly that my way of thinking was neutral with respect to the traditional controversies, e.g. realism vs. idealism, nominalism vs. Platonism, materialism vs. spiritualism, and so on.' (1963a, pp. 17-18)

assigns to the field of literature and art, to the purpose of expressing a feeling about life (*Lebensgefühl*).[26] (1928b, §10)

Scheinprobleme suggests, but does not explicitly state, that not just the two main questions it discusses but that *all* of traditional philosophy is meaningless. Carnap himself attributes this radical suggestion to the influence of Wittgenstein (1963a, p. 45);[27] and in retrospect he expresses a feeling of regret that he let himself get carried away: 'Unfortunately, following Wittgenstein, we formulated our view in the Vienna Circle in the oversimplified version of saying that certain metaphysical theses are 'meaningless'.'(1963a, p. 45)

Carnap does not yet take the next step to ask the question about the status of his own work, or rather he seems to view it as consisting of logical analyses – resting content with this answer for the time being. In this respect he still remains a Semi-Wittgensteinian. While *Scheinprobleme* at first blush seems to be written against traditional philosophy, the pamphlet actually more specifically addresses views of Russell, Schlick and Reichenbach.[28] In a letter Carnap sent to Russell along with dedication copies of the *Aufbau* and of *Scheinprobleme* he pointed out that he had been 'more Russellian than Russell' in two respects. The first one was that he had adhered strictly to his 'autopsychological basis' in constructing the heteropsychological, while Russell had thought that task too complicated and thus had just 'inferred' the heteropsychological. The second point was Carnap's rejection of 'the (metaphysical) concept of realism' while Russell still had tried to be 'realistic' (quoted in Carus 2007, p. 145). These are exactly the two central issues discussed in *Scheinprobleme*, so one might say that that pamphlet is first of all written against Russell, even though his name is not mentioned. The relevant references are given, however, in the *Aufbau* where Russell is criticized on both issues

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[26] As a translation of *Lebensgefühl* the term 'attitude towards life' suggests itself – however to Carnap it is important that *Lebensgefühl* is a simply a feeling, i.e. something purely emotional and therefore non-rational.

[27] Carnap relates that he had already held a 'skeptical attitude toward metaphysics', but that this more radical view was not his own idea: 'The view that these sentences and questions are non-cognitive was based on Wittgenstein's principle of verifiability.' (1963a, p. 45)

[28] Carnap mentions that these three originally considered themselves realists (1963a, p.46).

(see 1928a, §140 and §176). In this respect the little book is not written against 'traditional philosophers', but against Carnap's main source of inspiration. This, however, is quite in line with his general attitude: Carnap's main aim always was to instruct his friends, not to attack his enemies.[29] About the nature of philosophy Carnap spoke in Wittgensteinian terms,[30] most prominently in the Vienna Circle manifesto: 'The task of philosophical work consists in the clarification of problems and statements, not in putting forth new 'philosophical' statements.' (Carnap/Hahn/Neurath 1929, § 2)

3. Carnap and Wittgenstein about the nature of philosophy

Between 1929 and 1934 Carnap struggled to come to terms with Wittgenstein's conception of philosophy, but mainly he worked hard to incorporate new technical developments, especially from Gödel, and later Tarski, into his work. The most dramatic episode occurred in early 1931, when Carnap, after a sleepless night, wrote the first sketch for a new beginning, taking the start from the introduction of language (1963a, p. 53). This 'linguistic turn' marked Carnap passage from an epistemological to a linguistic type of philosophy.[31] His focus on logic and science remained however unchanged, and therefore this does not mark a fundamental change in his way of conceiving philosophy in general.[32]

It was very reluctantly, that Carnap explicitly addressed the question as to the nature of philosophy in general, and about the nature of the sentences in his own work in particular. This attitude is grounded in Carnap's wish to rather do constructive work than

[29] In another way this points out, however, that even Russell himself was still partly a quite traditional philosopher, asking questions about the reality of 'reality'. Thus we find that Russell is criticized precisely for introducing *philosophical problems* into his work of logical analysis. There also is a pun alluding to Russell's *The Problems of Philosophy* which was published in translation two years before *Scheinprobleme* by the same publisher: at the end of *Scheinprobleme in der Philosophie* we find an advertisement for *Die Probleme der Philosophie*.
[30] See the quotations at the beginning of this section.
[31] It is, however, striking that the manuscript Carnap wrote down immediately after this incident, is very technical in nature, containing above all syntactical stipulations, not philosophical, or meta-philosophical reflections (see Carus 2007, pp. 230-235).
[32] Awodey/ Carus (2009) present these changes in terms of Carnap breaking away from the grip of Wittgenstein - yet without giving any account of the plagiarism charge.

reflecting on his own methodology and it can be seen in his famous paper 'The eliminiation of metaphysics through logical analysis of language' ('*Überwindung der Metaphysik durch logische Analyse der Sprache'*) which was written shortly after the linguistic turn.[33] The paper curiously combines a forceful attack on metaphysics with a fourfold methodology. Carnap claims that his work of asking for the sense of a proposition can be formulated in four different, yet equivalent ways: '1. Which propositions are deducible from p, and from which proposition is p deduced? 2. What are the truth (and falsity)-conditions of p? 3. How is p to be verified? 4. What is the sense of p?' (1932a, §2) Carnap holds that all four ways of approaching the question are equivalent, so that the difference in language is only a matter of style and personal preference.[34] He explains that there are exactly two types of propositions having sense: firstly tautologies or analytic propositions (as well as contradictions), and secondly empirical propositions. He goes on to state: 'If someone wants to form a proposition not belonging to one of these types it automatically becomes senseless.' (1932a, §6) Turning finally to the topic of philosophy, Carnap uses the familiar Wittgensteinian terms: 'There remain no propositions, no theory, no system, but only a *method*, the method of logical analysis.' (1932a, §6) This method can be used negatively 'to eliminate meaningless words and pseudo-propositions' and positively to clarify 'meaningful concepts and propositions'. Exactly this task is to be called 'scientific philosophy'.

Finally he addresses the question about the character of the propositions included 'in this and in other logical treatises'. It seems quite obvious that Carnap must be running into trouble when trying to answer this question, because according to the criteria he has introduced not just metaphysics but also the 'good' parts of philosophy will consist of propositions not belonging to either of the two groups of propositions with sense. Carnap seems to evade the question in saying that all he can do is to give some 'hints' to the effect that 'these propositions are partly analytic and partly empirical'. He is aware of

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[33] As *Scheinprobleme* professes to be epistemological it already gives a list of senseless propositions (1928b, §7), so *Überwindung* advocates a syntactical view but also gives an epistemological version of the argument. Carnap tries to keep several ways open for as long as possible.

[34] This would be Carnap's preferred way: not to decide anything but just to show that there is no decision necessary because all versions can coexist. For actually riding an attack such a several-layer account seems somewhat cumbersome.

the fact that this answer must sound evasive, so he adds that these propositions belong partly to 'pure metalogic', and partly to 'descriptive metalogic'. Metalogic is explained as a novel way of speaking about the propositions of a language, while the notions of metalogic can be formulated in this language itself. Seen in this perspective, the idea of metalogic seems like an attempt to escape the Humean dilemma of reducing philosophy either to mere tautologies (or even worse, contradictions), or to factual statements, or to senseless propositions of the metaphysical type.[35] Carnap who had rejected the Kantian synthetic a priori thus faces the threat of Wittgensteinian 'nonsense' and tries to use logical syntax, conceived of as a metalanguage, as a way out.

4. *Logical Syntax*: Following and criticizing Wittgenstein at the same time

[I]f he wants to enter into discussion with us, he must state precisely how he wants to proceed, and he must give *syntactical stipulations* instead of *philosophical considerations*. (1934d/1937 § 17, emphasis added)

As soon as claims at being scientific (*Wissenschaftlichkeit*) are made, all that remains of philosophy is the logic of science. (1934d/1937 § 72)

In *Logical Syntax of Language* Carnap tries to introduce a new method of philosophical analysis.[36] His ideas about 'metalogic' have matured into 'syntax'.[37]
After Carnap had tried to 'out-Russell Russell' in the *Aufbau*, he now tried to 'out-Wittgenstein Wittgenstein'.

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[35] Hume himself, of course, did not feel the threat of such a dilemma but he simply declared his own proposition to be empirical. This stance is no longer available to Carnap.
[36] Carnap's views on philosophy in *Syntax* are discussed in Bouveresse 2009 and Wagner 2009. While they discuss points specific to this period, it is the purpose of this paper to develop a wider perspective on this topic.
[37] The title of his projected book changed from *Metalogic* to *Semantics* and finally to *Syntax*. These changes can be seen to indicate that in this book Carnap used metalogical, or metamathematical, really semantical tools in order to work out a purely syntactical project. In other words: Carnap used Gödelian techniques to carry out a Wittgensteinian project. The result is impressive but inherently instable.

In his *Tractatus* Wittgenstein had classified all possible propositions into several categories. In order to have sense, a proposition must be a picture of reality, i.e. it must have empirical content, and through comparison with reality we judge whether it is true of false. The sense must be there *before* this comparison can take place. The propositions of logic are, if logically true, tautologies, i.e. they are purely formal structures where all contact to reality is cancelled out - a tautological statement like 'either it rains or it does not rain' has no relation whatsoever to the weather. Wittgenstein calls them 'senseless' because they contain zero information about reality. These two ideas were eagerly taken up by the Vienna Circle members, and in an important sense these ideas only made 'Logical Empiricism' possible, because they showed a way to incorporate logic into an empiricist framework without any recourse to 'a priori truths of reason'. In his next step, however, Wittgenstein turned to the question of the propositions of philosophy themselves. For one he declared that the aim of philosophy really was not to justify philosophical propositions, but that philosophy was just 'an activity, not a theory' (TLP 4.112). While this idea, too, found its way into the Vienna Circle manifesto (see above), Wittgenstein went on to declare that, after all he had written a book, too, which consisted of propositions – and he declared these propositions to be mere elucidations and strictly speaking 'nonsensical'(TLP 6.54). In accordance with this general statement Wittgenstein declared that the task of philosophy was to clear up 'misunderstandings about the logic of language', but the propositions used to do this clarificatory work he declared to be nonsensical, too. To Wittgenstein, it is impossible to meaningfully speak about language, simply because any proposition says what it says, and in order to perform this task it must have a certain logical form which it shows - but it cannot express this form explicitly. Therefore it is only possible to *elucidate* the logical structure of propositions, because logical form simply is not a state of affairs that could be meaningfully expressed through a proposition.[38] Therefore the 'linguistic turn' cannot be

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[38] While Wittgenstein does not use the term 'metalanguage' it is clear that he is aware of the difference between the language he uses himself to elucidate as opposed to the languages and calculi he discusses in his book. While he does distinguish the languages, Wittgenstein refuses to accept the idea of language levels underlying the notion of object and metalanguage.

performed as a theory. We can set up syntax but we cannot meaningfully, e.g. theoretically discuss it.

In *Logical Syntax* Carnap sets his own work on a Wittgensteinian basis. He 'agrees in matters of foundation'[39] with him, finally leaving his earlier epistemological framework behind, moving from the logic of knowledge on to the logic of language. He tries to solve two points which he finds inacceptable in Wittgenstein. Both points concern the nature and scope of philosophy.

The 'philosophical' part (V) of the book Philosophy and Syntax discusses two main questions. § 72-81 treat of *The form of the sentences belonging to the logic of science* whereas § 82-86 are about *The logic of science as syntax*. Now he explicitly discusses the question concerning the type of those propositions his own book and investigation is made of, as well as the possibility to conduct syntax as a study of language forms as a theory. On both points Carnap openly contradicts Wittgenstein, stating that there *can* be meaningful philosophical propositions and also that logical syntax *can* be performed as an exact theory. He offers his conclusions giving the following statements: 'Thus syntax is exactly formulable in the same way as geometry is.'– and: 'The sentences of the logic of science are formulated as syntactical sentences about the language of science. [...] Syntax, pure and descriptive, is nothing more than the mathematics and physics of language.'(1937, p. 284)

While these statements seem clear enough as they stand, the question about the nature of philosophy really is much less clear than it seems. Carnap claims that philosophy really consists of syntactical sentences, some of which will be empirical, and some analytic. Now the empirical part, offering facts about sentences and languages already in existence, obviously is *not* in any meaningful way anything we would call 'philosophy'.[40] The logical part of philosophy, on the other hand, would then consist of analytic sentences, or strictly speaking of *tautologies*. Carnap seems to evade this latter

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[39] The translation weakens this point by vaguely speaking of 'general agreement' only (1937, p. 282).
[40] An example would be: 'The book Carnap published in 1934 consists of five parts and its title is made up of five words.'

expression, because it would make his claim patently insufficient. His book most evidently does *not* consist just of tautologies.[41]

A closer look at the 'philosophical' part of the book can help to clarify this issue. Still in § 73 Carnap introduces his distinction between the formal and the material mode of speaking as a tool to escape Wittgenstein's threat of philosophical nonsense. As he further explains in § 79 philosophical sentences usually are framed in the material mode of speaking, but they must be translated into the formal mode to really become clear. Almost all of Part (V) is devoted to the explanation of this translation technique, including a wealth of very interesting examples, including a passage from an article by Einstein in § 85. Carnap claims that these translations clarify the true nature of just about all philosophical questions, including ontology (examples 23-28), philosophy of mathematics (examples 37-40), epistemology (examples 41-48), philosophy of time (examples 50-51), of causality (example 52), and of quantum mechanics (example 53). While these examples are very interesting and fruitful, they are written down in ordinary language, and thus they quite obviously are neither empirical nor tautological sentences. Therefore it would be quite natural to classify them as a class of their own, and this class would contain sentences that are neither tautologous nor empirical. This, of course, strongly reminds of Wittgenstein's remarks, the very ones Carnap tried to refute. Remarkably, Carnap engages with Wittgenstein's *Tractatus* on two occasions while offering his translation exercises. First, in § 79, he offers as examples 29-32 four propositions from the *Tractatus*, in original as well as translation into the formal mode.[42]

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[41] This conflict between the *analytic* and *tautologous* nature is closely connected with the way Carnap uses Gödel's techniques of 'making signs speak about themselves', by defining a language by using the same language as a metalanguage. Gödel himself would, of course, always have *refused* to call logic tautologous. In a very interesting, but as of today little understood sense, Carnap tried to use Gödel's technique to show (against Gödel) that logic and mathematics are pure syntax, and he tried to work from a Wittgensteinian foundation to show (against Wittgenstein) that philosophy as well as syntax could be turned into an exact theory. Neither one of the two was convinced by the result.

[42] 'The world is the totality of facts, not of things.' (1.1) -> 'Science is a system of sentences, not of names.' 'A state of affairs is a combination of objects.' (2.01) -> 'A sentence is a series of symbols.' 'If I know an object, then I also know all the possibilities of its occurrence in states of affairs.' (2.0123) -> 'If the genus of a symbol is given, then all the possibilities of its occurrences in sentences are also given.' 'Identity is not a

He comments on these examples: 'Many of his propositions which at first appear obscure become clear[43] when translated into the formal mode of speech.' Somewhat later Carnap offers some more 'deterring examples' where translations are especially difficult, or even impossible, indicating that these cases fall within the sphere of metaphysics or 'mythology of the unsayable', or 'mythology of the higher'. The majority of these fifteen bad examples are taken from the *Tractatus*; one of them had already been quoted (as meaningful, but wrong).[44] These differently treated examples show how Carnap feels very ambiguously about the *Tractatus*, and he reacts likewise, finding for one thing the roots of his own approach but then finding bad examples – yet, then again he translates even the last and apparently worst example, combining the 'mythology of the unsayable and of the higher': 'Sentences cannot express anything higher'(6.42) into the quite straightforward translation: 'Higher states of affairs cannot be expressed in sentences.', or 'Higher sentences are not sentences.'(1937, § 81)[45]

While Carnap states: 'Translatablity into the formal mode of speech constitutes the touchstone for all philosophical sentences.'(§ 81) – yet the way he treats his own examples show that he is quite unable to use this touchstone as an exact criterion in order

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relation between objects.' (5.5301) -> 'The symbol of identity is not a descriptive symbol.' [Carnap does not supply the numbers of these propositions.]– Note that all of these 'translations' are 'ontologically', and thus strictly speaking, quite incorrect, because in 1 and the 2s Wittgenstein does not yet speak of sentences but of facts and states of affairs, only *preparing* his discussion of thoughts and sentences in the 3s. However, Carnap's suggestions help to clarify the motivation why Wittgenstein begins his book in the way he does. Therefore they could be very helpful as *hints* to understand the book better. In this way Carnap's examples can quite truly be called elucidations which are, strictly speaking, nonsensical.

[43] In German, Carnap uses the term '*deutlich*' ('distinct') which corresponds more closely to 'exact' – and he speaks of 'translation into an exact sentence' (beginning of § 79) – the translation offers 'clear' – and the resulting sentences can hardly be called 'exact' in any meaningful sense. This difference between clear and exact (*klar* and *deutlich*) could be used to describe the most fundamental difference in Carnap's and Wittgenstein's approach to philosophy. In passing it may be noted that Heidegger's favorite term is also *deutlich*, not *clear*. For more on this distinction see Kienzler 2008.

[44] The proposition: 'What can be shown cannot be said' had already been quoted, with Carnap expressing doubts about its truth but not its sense, in § 72.

[45] It may be noted that Carnap would have wholeheartedly agreed to the other, unquoted part of Wittgenstein's proposition 6.42, stating that 'There can be no propositions of ethics.'

to draw the line between philosophy and metaphysics. Most particularly, this method does not help Carnap to refute Wittgenstein's views on the nature of philosophical sentences. Quite to the contrary, his way to proceed positively appears very Wittgensteinian in spirit, if not in letter. Actually, Carnap's translations could well be summarized thus:

The correct method of philosophy would really be the following: to say nothing except what can be said, i.e. propositions of natural science – i.e. something that has nothing to do with philosophy – and then, whenever someone else wanted to say something metaphysical, to demonstrate to him that he had failed to give a meaning to certain signs in his propositions. Although it would not be satisfying to the other person – he would not have the feeling that we were teaching him philosophy – this method would be the only strictly correct one. (TLP 6. 53)

This can be interpreted as a suggestion to translate the metaphysical or philosophical propositions in order to show their purely formal nature – and to make all of these questions disappear.[46] Carnap expresses his hope that after successful translations the cases will be 'so simple that nobody will ever be tempted anymore to attach any philosophical problems to them' (§ 79).

While the more formal parts of *Syntax* are impressive in their formal exactness, the philosophical translations in Part (V) are striking in their non-technical, elucidatory, and clarificatory – in one word, in their Wittgensteinian character. Now it seems that Carnap was not aware of this at the time he wrote his book, yet Wittgenstein quite certainly was. This is quite evident from his accusations of plagiarism, levelled against Carnap in 1932. The main issue in that exchange, as explained by Wittgenstein in his letter to Schlick from August 8, 1932, was this:

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[46] Still more specifically, in 4.1272 Wittgenstein presents examples (later taken up by Carnap) that philosophical propositions about the existence of 'objects', 'numbers', and the like, are really solved by paying attention to the way different types of symbols, like numerals, object-variables, etc. are used.

You [Schlick] know yourself that Carnap is not advancing a single step beyond myself when he favours the formal over the material mode of speech, and I cannot believe that Carnap should have totally misunderstood the last propositions of the *Tractatus* – and thus the fundamental thought of the entire book. (Wittgenstein 2004, 8/8/1932)[47]

The Wittgenstein-Carnap controversy has been little understood until today. Philosophically however, the core of the problem seems to have been that Carnap introduced an interesting and powerful tool of clarification in order to make a move *against* Wittgenstein – while he actually did something like a translation and adaption of a central part of the *Tractatus* methodology.[48] Carnap himself, however, unlike Wittgenstein, did not feel that he just *translated* something from the *Tractatus* into his own idiom, but rather that he was *drawing a conclusion* from things said in the *Tractatus* that Wittgenstein himself had *not* drawn. He did not change his opinion when Schlick begged him to think the matter over, and when the article in question was published in an English translation Carnap changed not a iota in the article, and in his newly written Introduction he mentions Wittgenstein just once as being the originator of the term 'nonsense' (1934b, p. 26). Wittgenstein found it *obvious* that the formal-material distinction, or the substance of it, was already included in his book, while Carnap felt that this distinction could save philosophical propositions from being nonsensical, and precisely because of this difference in conclusion could really *not* be already included in the *Tractatus*. It was only later that Carnap came to see that his translations simply could *not* be performed within the sphere of any logically exact language. At bottom, this difference seems to be the substance of their famous plagiarism dispute.

This situation has long been obscured by the attention given to the formal part of *Logical Syntax*, combined with the Principle of Tolerance, which has been widely misunderstood

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[47] This passage in also quoted in Conant 2002, p. 426, n. 9. Conant, however, claims that this shows that Wittgenstein believed that 'Carnap repeatedly and grossly misunderstood the *Tractatus*' (p. 449, n. 99).

[48] Carnap never explained the source of this important distinction – apparently it came to his mind when pondering over ways out of Wittgenstein's dilemma. The details of the controversy are discussed and evaluated along the lines suggested here in Kienzler 2008.

to contain Carnap's philosophical credo.[49] Actually this principle is a maxim Carnap held all along as part of his general attitude towards philosophy.[50]

Thus *Logical Syntax* results in a two-level picture of philosophy: For one it is possible and fruitful to construct symbolic languages (yet whether this activity lies inside or outside philosophy is still a matter of dispute), on the other hand, however, philosophical issues are best addressed by paying attention to the language they are expressed in; and most philosophical issues are simply resolved because they are really formal questions about the way our language is organized.[51]

5. Later Carnap

While Carnap is often said to have left behind Wittgenstein in *Syntax*, in questions concerning the nature of philosophy he actually remained true to the Wittgensteinian spirit of his earlier years. There has been much attention given to his method of explication, introduced in his *Logical Foundations of Probability* (1950), pp. 1-18. From

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[49] There has been some dispute whether Carnap wants to destroy or to save philosophy. In the light of the above this is very much a matter of perspective. One defender of philosophy writes: 'The upshot of logical analysis is not the elimination of philosophy but a better understanding of its real nature, to wit its *logical* nature.' (Wagner 2009, p. 87) One sceptic, giving perhaps too much attention to the issue of tolerance, remarks: 'He really did not want ever to appear as trying to formulate prohibitions of any kind and he was very anxious to present the anti-metaphysical programme itself in such a way that it would not sound in any way like a prohibition. [...] But we may also think that even tolerance, in philosophy, can sometimes go too far and that the distance from complete tolerance to philosophical indifference is perhaps not very great.' (Bouveresse 2009, p. 183)

[50] Thus it is somewhat arbitrary to state: 'It made its dramatic appearance in the context of the protocol sentence debate: 'Two different methods of structuring the language of science, both of which are possible and legitimate.' (Creath 2009, p. 207, quoting 1932c, pp. 215-6) As explained above, Carnap had always been using different languages to express his point – compare especially his 'four language approach' from *Überwindung* quoted above.

[51] There is an important point of disagreement between Carnap and Wittgenstein here: While Wittgenstein simply refers to our existing language forms, Carnap is much interested in *improving* our language forms, and in making proposals for such improvements. For Wittgenstein only the first part, the analysis of language, really belongs to philosophy. This difference of emphasis very much informs the reading of Carnap given in Carus 2007.

a more philosophical point of view, however, this passage gives just another version of Carnap's general attitude that philosophy begins with work in clarification, explanation, or explication.[52] The general spirit of his approach can best be seen in his famous article 'Empiricism, Semantics, and Ontology', written and published almost simultaneously. This very non-technical article contains Carnap's most explicit discussion of the nature of philosophy. He explains the main point of the paper as helping fellow philosophers to overcome certain unnecessary scruples:

More probably he will speak about all these things [abstract entities] like anybody else but with an uneasy conscience, like a man who in everyday life does with qualms many things which are not in accord with the high moral principles he professes on Sundays. [...] It is the purpose of this article to clarify this controversial issue. [...] It will be shown that using such a language does not imply embracing a Platonic ontology but is perfectly compatible with empiricism and strictly scientific thinking. [...] It may help them to overcome nominalistic scruples. (1956, p. 206)

Reflections on the status of certain languages, often misunderstood as part of metaphysics, really are of a quite different character, as Carnap explains:

Although characterisations of these and similar kinds are, strictly speaking, unnecessary[53] they may nevertheless be practically useful. If they are given, they should be understood, not as significant parts of the system, but merely as marginal notes with the purpose of supplying to the reader helpful hints or convenient pictorial associations which may make his learning of the use of the expressions easier than the bare system of the rules would do. Such a characterization is analogous to an extra-systematic explanation which a physicist sometimes gives to the beginner.[54] (1956, p. 211)

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[52] Note that the remarks on explication are offered as a quite general tool to be used later in the book, not as a novel conception of philosophy (1950, p. 1).

[53] The word 'unnecessary' functions very similarly as Wittgenstein's 'nonsensical' does.

[54] In a note to this passage Carnap expresses his attitude of just giving helpful suggestions: 'If, however, a reader should find these explanations more puzzling than clarifying, or even inacceptable, he may disregard them.'(1956, p. 31)

Philosophical explanations are thus set apart from anything exact or any part of theory. This can be seen as a quite natural extension of what Carnap offered in Part (V) of *Syntax*. The only exception would be that now he no longer believes that his translations (meanwhile called 'explications') should constitute the prime and only tool for doing such elucidations.

Carnap concludes:

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.[55] (1956, p. 221)

In the end we find Carnap consistently giving a quite Wittgensteinian account about the nature of philosophy – himself preferring to do the more technical part of the job. Thus it could not be surprising that in his responses to various objections for the Schilpp volume Carnap appeared very serene in his answers, as can be seen in his response to Strawson:

Strawson ascribes to me the view that 'philosophical questions and perplexities cannot really be taken seriously'. If this were my view I would not have devoted the greater part of my life's work to attempts at solving or clarifying such problems. (1963b, p. 934-5; see also Strawson 1963, p. 507)

Finally Carnap responded to a 'Carnapian' suggestion by Morris very generously: [56]

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[55] This last passage again echoes Wittgenstein: 'If a sign is *not needed* then it is meaningless. That is the point of Occam's maxim. If everything in the symbolism works as though a sign had meaning, then it has meaning.' (TLP 3.328)

[56] In his contribution to the Schilpp volume Morris discusses Carnap's views on philosophy and he quotes Peirce in order to support the idea that Pragmatism and Logical Empiricism have a lot of common ground: 'I wish philosophy to be a strict science,

In earlier times, I sometimes made attempts to give an explication of the term 'philosophy'. The domain of those problems which I proposed to call 'philosophical' became step by step more comprehensive [...]. Yet, actually none of my explications seemed fully satisfactory to me even when I proposed them; and I did not like the explications proposed by others any better. Finally, I gave up the search. [...] It seems better to leave the term 'philosophy' without any sharp boundary lines, and merely to propose the inclusion or the exclusion of certain kinds of problems. (1963b, p. 862)

6. Postscript about the literary form of Carnap's philosophy[57]

It has often been noted that the way philosophy is presented is internally related to the spirit it conveys. While this remark is readily applied to thinkers like Descartes, Hegel, Nietzsche or Wittgenstein, Carnap seems to be an exception because of his seemingly non-literary style of writing. This impression, however, is quite misleading. Carnap was very careful, not just about the contents of his research but also about the way he wrote and published his work. He strove hard in order that his ideal of clarification and explication would find an appropriate way of expression. To Carnap the ideal form of presentation is a *textbook* – communicating his results in a sober and very well-arranged way, so that others might gain the greatest possible amount of instruction from it. In his writings Carnap saw himself very much as a *teacher*, maybe more so than an original *researcher*.[58] Especially in his monographs and books Carnap was very careful to always give as clear and easy an exposition as possible. This can already be seen in *Der Raum.* This first book not only is carefully and clearly organized and written but it also carries

passionless and severely fair.' (Morris 1963, p. 96) Morris then notes that the scope of philosophy can be disputed and in order to settle this possible dispute he goes on to suggest in a truly Carnapian spirit that we could introduce the following series of notions signified *philosophy$_1$, philosophy$_2$, … philosophy$_n$* (Morris, 1963, p. 97). In his reply Carnap does not comment on this suggestion. His answer is given as a motto above.
[57] This postscript is offered as a prolegomenon to a more extended discussion of the much-neglected literary form of the textbook. No discussion of the nature of philosophy can be complete without paying due attention to the way it is expressed.
[58] Recall Quine's dedication in *Word and Object*: 'To Rudolf Carnap – teacher and friend' (Quine 1960, p. v). Even the sequence seems to be deliberate and quite correct.

an appendix giving plenty of pointers to the literature, beginning with introductions to formal logic and discussing all the relevant approaches to the topic of the book. The *Aufbau* not only introduces Carnap's constitution theory but it also gives plenty of carefully chosen and worked out *examples* which are typeset as separate paragraphs in smaller print and headed by the caption 'example'; and he furthermore gives discussion of the relevant literature, also in separate paragraphs. Finally the bibliography to the book is organized in such a way that he marked the entries according to the degree of difficulty, into no less than four categories; especially introducing two types of 'introductory' material. This care can also be seen in his introductory logic textbooks, as well as in most of his other publications, including *Meaning and Necessity*[59] and the largely technical *Logical Foundations of Probability*.

This sustained emphasis on reaching and explaining himself to as many readers as possible sets Carnap very much apart from Wittgenstein who famously, or notoriously, always wrote for one main reader, namely himself. Carnap firmly believed that *everybody* would be able to follow and understand his work, if his readers would only follow his instructions and put in as much effort as would be needed to master the more technical parts of his writings.

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[59] Note especially the frequent and regular summaries given to each section and paragraph in that book.

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