

# REDEFINING THE STATUS OF PHILOSOPHICAL STATEMENTS: SOME INSIGHTS FROM A DEBATE ON META-LANGUAGE WITHIN THE VIENNA CIRCLE IN THE EARLY 1930'S

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In his foreword to the *Philosophical papers* by Hans Hahn, Karl Menger mentions a controversy about the possibility or impossibility to speak about language within the Vienna Circle in the early 1930's. He then adds: "Waismann proclaimed that one could not speak about language. Hahn took strong exception to this view. Why should one not – if perhaps in a higher-level language – speak about language? To which Waismann replied essentially that this would not fit into the texture of Wittgenstein's latest ideas."<sup>1</sup> Thanks to the publication of the protocols of the Vienna Circle by Friedrich Stadler in his book *The Vienna Circle – Studies in the origins, development and influence of logical empiricism*, we have access to some discussions within the circle in the years 1930 and 1931, that allow us a partial reconstruction of the controversy. In these minutes we attend a very lively discussion on the topic of 'talking about language'. We would like to make more explicit the tenets of this controversy, starting from the discussions within the circle. We will then focus on the evolution of the positions of different members of the Circle, that reflect different attitudes towards this problem, that are expounded in articles published until 1936. Although its members strived to stay the closest, they could to the landmarks laid down by the *Tractatus logico-philosophicus*, some of its members broke with them in many respects. The need to admit the possibility of talking theoretically about language became more pressing as the works of Tarski and Gödel began to exert an influence on the researches of its members. Two options emerged: talking about a language in another language (Hahn) or in the same language (Carnap). Hahn's positions, despite their originality, stand close to those of Carnap, who presents in 1931 his meta-logical project. Disagreements with Waismann occurred frequently. Neurath remained skeptical about such a development that could, according to him, lead back to metaphysical considerations. The protocols by Rosa Rand give us precious insights on the premises of this debate, symptomatic of the diversity of the positions and of the fruitfulness of the exchanges within the Vienna Circle at that time. However, this debate takes place in a broader setting, namely the discussion of the status of philosophical statements once the rejection of metaphysics is accomplished. The answers provided reflect strong dissenting currents within the circle. For Neurath, to conceive of philosophy as providing elucidations is mistaken. Science shall take the form of an encyclopedia, that contains heterogeneous discourses – exact formulated sentences, as well as pieces of ordinary language – and is taken in a dynamic process. No discourse outside science can be accepted. For Schlick

<sup>1</sup> Karl Menger, Introduction to *Empiricism, Logic and Mathematics – Philosophical papers* by Hans Hahn.



and Waismann, there is still room for philosophy as providing elucidations about language. For Carnap, the aim is to attain a logically suitable language for science; discussions in a natural language have only a provisional role, in order to attain an adequate language, in which the logic of science can be formulated.

**Keywords:** metalogic, elucidation, Vienna Circle, Wittgenstein, Carnap

## ПЕРЕОПРЕДЕЛЯЯ СТАТУС ФИЛОСОФСКИХ ВЫСКАЗЫВАНИЙ: НЕКОТОРЫЕ ВЫВОДЫ ИЗ ДИСКУССИИ О МЕТАЯЗЫКЕ ВНУТРИ ВЕНСКОГО КРУЖКА В НАЧАЛЕ 1930-Х ГГ.

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В предисловии к «Философским статьям» Ганса Хана Карл Менгер упоминает спор о возможности или невозможности говорить о языке внутри Венского кружка в начале 1930-х гг. Затем он добавляет: «Вайсманн заявил, что нельзя говорить о языке. Хан категорически возражал против этой точки зрения. Почему нельзя – хотя бы на языке более высокого уровня – говорить о языке? На что Вейсманн по существу ответил, что это не вписывается в структуру новейших идей Витгенштейна». Благодаря публикации протоколов Венского кружка Фридрихом Штадлером в его книге «Венский кружок – Исследования истоков, развития и влияния логического эмпиризма», мы имеем доступ к некоторым дискуссиям внутри кружка в 1930 и 1931 гг., которые позволяют нам частично реконструировать полемику. Сейчас мы вступаем в очень оживленную дискуссию на тему «разговоров о языке». Мы хотели бы более четко обозначить основные положения этой полемики, начиная с дискуссий внутри кружка. Далее мы остановимся на эволюции позиций разных членов кружка, отражающих различное отношение к этой проблеме, изложенных в статьях, опубликованных до 1936 г. Хотя его члены стремились оставаться как можно ближе к ориентирам, установленным «Логико-философским трактатом», некоторые из его членов разошлись с ними во многих отношениях. Необходимость признать возможность теоретически говорить о языке стала более насущной, поскольку работы Тарского и Гёделя начали оказывать влияние на исследования его членов. Возникло два варианта: говорить о языке на другом языке (Хан) или же на том же языке (Карнап). Позиции Хана, несмотря на их оригинальность, близки к позициям Карнапа, представившего в 1931 г. свой металогический проект. Разногласия с Вайсманном возникали часто. Нейрат по-прежнему скептически относился к такому развитию событий, которое, по его мнению, могло привести назад к метафизическим соображениям. Протоколы Розы Рэнд дают нам ценную информацию о предпосылках этих дебатов, которая свидетельствует о разнообразии позиций и плодотворности обменов внутри Венского кружка в то время. Однако эти дебаты важны и в более широком контексте, а именно в связи с обсуждением статуса



философских утверждений после завершения отказа от метафизики. Представленные ответы отражают сильные разногласия внутри кружка. По мнению Нейрата, рассматривать философию как источник разъяснений ошибочно. Наука должна принять форму энциклопедии, содержащую разнородные курсы – точно сформулированные предложения, а также элементы обыденного языка – и рассматриваемую в динамическом процессе. Никакой дискурс вне науки не может быть принят. По мнению Шлика и Вайсмана, все еще остается место для философии как средства объяснения языка. По мнению Карнапа, цель состоит в том, чтобы создать логически подходящий язык науки; дискуссии на естественном языке играют лишь временную роль для достижения адекватного языка, на котором может быть сформулирована логика науки.

**Ключевые слова:** металогика, разъяснение, Венский кружок, Витгенштейн, Карнап

1. This article should be read as an attempt to put light on inner debates in the Vienna Circle in the early 1930's. Central in this period are Waismann's *Thesen* and Carnap's preparatory works for the *Logical syntax of language*, that are discussed extensively within the Circle. Our lens will be the alleged disagreements concerning the new direction taken at that time by logic, what could be called the "meta-logical turn". This shift of methods and purpose within logic was initiated by Hilbert, Tarski and Gödel. It exerted a strong influence on the Vienna Circle, especially on Carnap, who held in June 1931 his first exposition on meta-logic within the circle. In the previous year, the *Thesen* by Waismann, that present a renewed version of wittgensteinian thesis from the *Tractatus logico-philosophicus* are discussed thoroughly during many meetings. They are the upshot of discussions that began in 1929 between Wittgenstein, Schlick and Waismann. From 1929 until 1932, Wittgenstein met regularly Schlick and Waismann; Wittgenstein's "new ideas" had a strong though only indirect influence on the discussions within the circle: Waismann's theses, that represent an attempt to adapt some central stances of the *Tractatus* to Wittgenstein's new insights, were discussed intensively in 1931.

The dynamic of the Vienna Circle at the various stages of its evolution implied controversies that took place in informal discussions or in published articles: a paramount example of it is the protocol sentences debate between Carnap, Schlick and Neurath. We will therefore try to put forward the controversy about the possibility of talking theoretically about language in the broader context of the different debates animating the Circle in the early 1930's. What are these debates? Prominently the search for an elementary basis for a constructional system of science, the protocol sentence debate and the question of the justification of syntax. The question of the legitimacy of a metalanguage is connected with this later debate and embedded in a broader discussion on the relationship



between the “given” and the syntax: has the “given” already a structure or is it ascribed to it by the syntax?

The minutes taken by Rosa Rand and edited by Friedrich Stadler give us precious insights in the inner discussions and the debate practice within the circle, from the end of 1930 to the summer of 1931.

The thesis that there is only one language has, according to the universalist conception, for a consequence that one cannot talk about language taken as a whole. It is however important to keep in mind that this thesis is seldom argued for in isolation. In the protocols at our disposal, we see this topic intertwining with others, that can be mentioned through the following questions: Can a syntax be justified or is it arbitrary? Has the “given” a definite structure? What form shall the elementary sentences take? Because of this intertwining, we will not seek to study the debate on the possibility of meta-logic and meta-languages in isolation, but will rather follow its ramifications and conceptual presuppositions in other debated questions contemporary to it.

Among the diverse controversies in which the members of the Vienna Circle engaged, the debate on the possibility of speaking theoretically about language occupies a particular place. Its roots lie in the detailed discussion of the *Tractatus logico-philosophicus* that the Circle undertook in 1926–1927. The publication of *The logical structure of the world* by Carnap in 1928 made the possibility of different language levels more acute, as it distinguished between the constructional level and the psychological level. There was no unified reception of this work by the Viennese, despite or thanks to the detailed collective reading they undertook. This diversity of reception has to do with the diversity of projects. However, a common vocabulary was shared and general positions were accepted, like the rejection of metaphysics and the search for a unified science. As Carnap puts it in his intellectual autobiography: “there was a common basic attitude and the common aim of developing a sound and exact method in philosophy” [Schilpp, 1963, p. 1].

Our intention here is not to assess the correctness of the interpretation of Wittgenstein’s positions by the members of the Circle, but to observe how these positions, as they were understood, played a dynamic role in the inner discussions. We fortunately have at our disposal for the end of the year 1930 and the half of the year 1931 the protocols of the informal discussions held in the Circle, through the minutes made by Rosa Rand. That is one important reason for which we chose to focus on that year. Our main source is thus the protocols held by Rosa Rand of the discussions in the Schlick-Circle, from the fourth of December 1930 until the second of July 1931. They were published by Stadler in his book *Der Wiener Kreis – Ursprung, Entwicklung und Wirkung des Logischen Empirismus im Kontext*. This document has a peculiar character: it transcribes discussions that took place during meetings of the Schlick-circle. If most of the protocols are a faithful rendering, some of them manifest



the character of reformulations by Rosa Rand of remarks made by different members. The book *Wittgenstein und der Wiener Kreis*, edited by McGuinness in 1967, gives us also precious insights on the development of Wittgenstein's thoughts between December of 1929 and July 1932, that had an indirect influence on the discussions in the Circle. It contains the *Thesen* by Friedrich Waismann, that were presented and discussed in the circle at that period [Wittgenstein, 1967, Anhang B, p. 233–261].

Let us begin by circumscribing more precisely our topic and present the context. We choose to focus our attention on the year 1931. What are our reasons? It is in many respects a crucial year in the development of the Vienna Circle: many important articles will be published in this year, *Causality in contemporary physics* by Schlick, *Logical positivism* by Blumberg and Feigl, *The elimination of metaphysics through logical analysis of language* by Carnap, *Physicalism* by Neurath. Other equally important articles are in preparation and will be published the next year, like *Physics as a universal science* by Carnap or *Sociology in physicalism* by Neurath. Parallel to the weekly meetings of the Circle, Schlick and Waismann continue to meet regularly Wittgenstein and spread his new ideas within the Circle. The audience of the Circle is also increasing: in september 1930 takes place in Königsberg the second conference for *Erkenntnislehre der exakten Wissenschaften*, organised by Kurt Reide-meister, that previously taught in Vienna. Carnap presents the logicist view on the foundations of mathematics, while Waismann presents Wittgenstein's standpoint. Gödel expounds on this occasion his results on incompleteness for the first time. In 1931 Carnap has what he calls his "vision" of "the whole theory of language structure" [Schilpp, 1963, p. 54]. In the fall of 1931, he will leave for Prague and in the following years develop his meta-logical investigations, leading to the publication of *Logical syntax of language* in 1934.

We have also to mention the growing influence of the works by Hilbert and of the polish school of logic. At that time, the influence of Tarski and Lukasiewicz on Carnap is great. In February 1930, Tarski held a talk in Vienna on the meta-mathematics of the propositional calculus, on the invitation of Menger. In November 1930, Carnap addressed three talks in Warsaw. Recalling the meetings with Tarski and the following influence he exerted on his thought, Carnap writes: "Tarski held in our circle a talk about the metamathematics of the propositional calculus. In the following discussion arose the question to know if metamathematics is of value for philosophy too. In my discussions with Tarski i had come to the opinion that *the formal theory of language* has a big importance for the clarification of our philosophical problems. Schlick and others were on that point rather skeptical" [Ibid., p. 30]. A clear line of separation appears between Schlick and Carnap in the reception of Tarski's work. It is also present in the systematic summaries made by Rosa Rand of the philosophical positions of each member of the Circle.



2. In the introduction to the *Philosophical papers* of Hans Hahn, Karl Menger remarks that the *Tractatus* had made clear to Hahn the role of logic, i.e. to prescribe under what conditions we can say the same thing in various ways. He then evokes a controversy in the following terms: “In the early 1930’s, after Carnap had gone to Prague, a controversy about a related topic arose when Waismann proclaimed that one could not speak about language. Hahn took strong exception to this view. Why should one not – if perhaps in a higher-level language – speak about language? To which Waismann replied essentially that this would not fit into the texture of Wittgenstein’s latest ideas” [Hahn, 1980, Introduction, p. xii]. This quote appeals a first remark: a rational argument from Hahn, is put in opposition to argument of authority – Waismann’s appeal to Wittgenstein’s new ideas! The allegation of Wittgenstein’s authority, in Menger’s quotation, if it corresponds to Waismann’s attitude, may surprise, because at that time Wittgenstein wasn’t an uncontested authority for all members of the Circle anymore. We surmise that it is a slightly simplifying account of how Waismann brought in his arguments in the discussions.

Let us add factual and textual evidence to Menger’s testimony: Carnap left Vienna for Prague in the fall of 1931, where he had obtained a chair for natural science. Waismann and Schlick held regular meetings with Wittgenstein at that time. In the minutes of 1930 and 1931, a prominent place is taken by the discussion of the *Thesen* by Waismann (from the 7<sup>th</sup> of May to the 3<sup>rd</sup> of June) and by Carnap’s presentation of his metalogical project (from the 11<sup>th</sup> of June to the 2<sup>nd</sup> of July). The controversy evoked by Menger arose later, after the fall of 1931 and Carnap’s leaving for Prague. Mengers wording of the controversy is at best simplifying. The proclaimed impossibility to talk about language defended by Waismann implies different questions: the conception of language as a whole, the clarification of the status of philosophical statements and the possibility of meta-logical concepts. Despite the fact that Menger attributes to Hahn a definite position, we find, when we resort to the minutes by Rosa Rand, that Hahn’s position on this topic in 1931 is not univocal. We read in a minute from the 26<sup>th</sup> of February, 1931: “Hahn thinks it an open question, whether there might be a language about language” [Stadler, 2015, p. 86].

The distinction between saying and showing is crucial for the conception of symbolism at work in the *Tractatus*. The search for a perfect notation has to deal with concepts such as “object”, “concept”, “number”, only in a preparatory phase. Once the language is constructed, properties of signs display what the signs are about, preventing at the same time these properties to be made explicit by using the predicates “object”, “concept”, “number”, or dispensing us to express them through explicit statements. When such attempts to produce explicit statements are made, senseless sentences occur: “2 is a number” “Achilles turtle is an object”.



According to Wittgenstein, the only correct way to designate an object is to use a variable name: “Wherever the word ‘object’ is correctly used, it is expressed in conceptual notation by a variable name” [Wittgenstein, 2018, 4.1272]. Predicating “object” to a name is a wrong way to proceed. Such concepts will be qualified as formal concepts; they cannot occur in true-or-false sentences.

Meta-logic seems at first sight to attempt to say what can only be shown. It uses notions such as proposition, concept, property, that Wittgenstein, in the *Tractatus*, declares to be formal concepts [ibid., 4.126-4.1273]. Meta-logic claims to be able to formulate genuine sentences, that can be part of a theory. Can the adoption of levels of language overcome the impossibility of saying what is shown? A higher-level language would say what the lower language would show. However, the theory of types, that introduces a hierarchy of languages, has been utterly rejected by Wittgenstein. All that he retains from Russell’s theory is the idea that a sentence cannot contain itself or be about itself.

In this perspective, to “talk about language” would amount to formulate in propositions what can only be shown by propositions. And, for a given language or symbolism, this distinction appears as an absolute one. From a wittgensteinian, and then waismannian point of view, if one undertakes to build different language levels, the risk is to commit to propositions what belongs to the function of showing.

Concerning this point, the testimony of Carnap is illuminating. He reflected on it in his *Intellectual biography*, and presents a divergence he noticed between his view and the view propounded in the *Tractatus*: “We read in Wittgenstein’s book that certain things show themselves but cannot be said; for example the logical structure of sentences and the relation between the language and the world. In opposition to this view, first tentatively, then more and more clearly, our conception developed that it is possible to talk meaningfully about language and about the relation between a sentence and the fact described” [Schilpp, 1963, p. 29]. Interesting here is the “we” used by Carnap, that suggests a common position of the Circle, that was by far not realized. In the protocols of 1931, we can observe the first phase of emancipation, where some Viennese try to develop a meaningful talk about language.

If the say/show doctrine seems to limit the expressible, it has a positive aspect too, namely: it is an incentive for the invention of symbolisms whose showing function corresponds to the multiplicity of what it attempts to describe, like the notation with true and false poles in the *Tractatus*. In line with this conception, Waismann declares: “The task of syntax is always the same: to give language the right multiplicity” [Stadler, 2015, p. 100]. This doctrine is closely linked to a specific theory of symbolism, whose main tenet is the following: when the symbolism has the right multiplicity, one can dispense with rules of syntax. Frascolla underscores the large range of non-sensical sentences, linked to the attempt



of saying what exceeds the sayable: “Wittgenstein is not content with condemning as nonsensical those propositions which try to speak of the ineffable background of meaningful language. He goes beyond that merely negative point and sets up some notational strategies and devices which aim to give back to the function of showing all that which has been inappropriately committed to propositions” [Frascolla, 2011, p. 160–161]. The function of showing has to do with the right multiplicity that can make the rules of syntax dispensable.

3. The discussion within the Vienna Circle on the status of the statements to be found in the *Tractatus* and the project of a constructional system, as it is devised in *Logical structure of the world* by Carnap, leads to an interrogation on elucidations (*Erläuterungen*): Are they statements without genuine content? Shall they disappear, once the correct syntactical system for a unitary science has been devised? Carnap’s view goes in that direction, but other members’ answers depart from it. Such answers are closely linked to the stand taken towards a meta-logical approach in philosophy. The discussion on the status of the statements contained in the *Tractatus* subsequently finds an echo in the reflection on the philosophical discussions themselves: aren’t they mere elucidations? In a session of the Schlick-circle, Gödel raises the question of their problematic status. As he managed to represent mathematically important proof-theoretical concepts in his groundbreaking articles of 1930 and 1931, his viewpoint has a particular weight. His remark is meant as an objection to the preceding discussion in the Circle meeting on the problem of the justification of syntax.

“Carnap responds to an objection from Gödel. Gödel asked how the discussion about logical questions was to be justified, since by engaging in it one does not utter meaningful sentences [*Sätze*] but only elucidations [*Erläuterungen*]. The question thus arises how the permissible elucidations are to be distinguished from the metaphysical pseudo-statements (*Scheinaussagen*). Carnap responds to this that the activity of a philosopher always aims for the construction of a usable syntax. Those elucidations are permitted which are suitable to bring out the structure of a usable syntax, even if they do not deal explicitly with the syntax. These elucidations are not sentences but only legitimate elucidations in contrast to elucidations about ontology.

Schlick: Only natural science has an ontological character, philosophical elucidations never concern the phenomena but only the syntax. Neumann: One can speak whenever this leads to success. Carnap agrees.

Waismann thinks that considerations of the meaning [*Bedeutung*] of a word are also legitimate. By contrast, Carnap thinks that we do not give elucidations about the meaning of an isolated word, but only about its place in the syntax. Hahn thinks it an open question, whether there might be a language about language” [Stadler, 2015, p. 86].

This text gives us an interesting overview of the attitudes of the different members. Neurath’s pragmatic standpoint is here very manifest.





Carnap suggests a distinction that could preserve the legitimacy of elucidations, when it is directed towards the construction of a syntax. Schlick ascribes to natural science only the capacity to raise ontological claims. Waismann is reluctant to see elucidations confined to syntax, not letting space for meaning. Hahn has to this point no definite position, neither rejecting nor supporting the possibility of “a language about language” [*eine Sprache über die Sprache*].

The question is to know what criteria can assure us that we are not producing senseless statements, like those of metaphysics. Carnap adapts Wittgenstein’s stricture to his own line of thought: elucidations only have a *provisional* character, and are justified by the aim to provide a correct syntax for the system of science. The question of accepting the possibility of a metalanguage or not is moreover a “reflexive” question: what is the status of what we are saying while we are presently debating? We aren’t actually constructing a system, but engaged in a debate on the way to construct one.

Elucidations are not metalogical by themselves. But they gain this status once they are exactly formulated. What is in need of expression that shall demand metalogical considerations? On 7.5.1031, Hahn admits the possibility to talk about sentences (*Sätze*), yet in another language. According to this possibility, many languages can be envisaged, instead of an all-encompassing language. Let’s turn again our attention to the minutes of the discussions:

“(Waismann): I cannot add anything to a saturated sentence. I cannot make a statement about a statement. The view that there are sentences about sentences leads to viewing them under two points of view, one as saturated and one as unsaturated. The sequence word-sentence cannot be continued beyond the sentence.

Carnap: I will show in my metalogic in what sense sentences about sentences are possible. The problem is that we wish to speak metalogic, e.g., to say of a sentence that it follows from another one.

Hahn: I do not wish to exclude the possibility of speaking about sentences. <...> Hahn: The difference between our views is that Waismann speaks in the spirit of Wittgenstein of an universal language which I do not believe in.

Waismann: But the thesis is this: a sentence can appear in a sentence only as the argument of a truth function” [Stadler, 2015, p. 99].

Carnap considers here as a metalogical notion the relationship between two sentences when one follows from another. Two types of this relation will be thoroughly introduced in *Logical syntax of language*, the deduction and the derivation [Carnap, 1937, p. 37–39]. Waismann’s affirmation: “I cannot make a statement about a statement”, is the direct echo of 3.332 in the *Tractatus*: “No proposition can make a statement about itself, because a propositional sign cannot be contained in itself (that is the whole of the ‘theory of types’). We can link Waismann’s conception of a sentence as saturated with Hahn’s declaration that in order



to speak about sentences, they have to “appear as individuals”. Waismann doesn’t seem to be aware of the possibility of naming a sentence and to treat it as a syntactical object. Hahn rejects Waismann’s conception of a universal language, without making explicit what links this conception to the logical impossibility defended here, consisting in including a sentence within another sentence.

4. Possibility or impossibility to talk theoretically about language? The supporters of possibility don’t strive to justify it, but merely rely on the dispositions of natural language to do it, and on the devising of “meta-logical” systems. Let’s have a look on the way Carnap introduces his metalogical project, on the 11<sup>th</sup> of June 1931:

“By metalogic I understand the theory of the forms which appear in a language, thus the representation of the syntax of language. <...> Form of metalogic: are there sentences about sentences, what meaning do they have, are they empirical sentences or tautologies, will there result a hierarchy of languages? Our objects are the sentential signs of a certain language” [Stadler, 2015, p. 115].

“Since we describe only physical structures, namely series of linguistic signs, we are able to express metalogic in our ordinary speech, namely in such a way that does not contradict the views of Wittgenstein. We are concerned here not with sentences about a type of sentences, but with in part singular, in part conditional sentences about physical structures” [Ibid., p. 118].

The burden of proof seems indeed to lie by the proponents of the impossibility of devising a metalogic: to which confusions does it lead? What matters is to clarify what a theory is and the constraints it on the objects it can be about. In this respect, the idea of a theory of signs appears problematic; signs may not be able to become genuine objects of a theory. That proponents of the meta-logical approach are not prevented or impaired in the development of their projects by methodological complications manifests the asymmetrical character of the situation and suggests that the question is rather of a philosophical nature. Only technical problems are to be solved in the first place, not philosophical or methodological ones.

Carnap first identifies the syntactical and the metalogical, introducing two further metalogical notions, the notions of truth and falsity:

“(Carnap) My detailed views on what a syntax looks like (metalogic) I wish to present later during the summer semester. <...> Carnap: The syntactical word “false” would have two meanings for Hahn, false-1 would be false in the accustomed sense, false-2 would be nonsensical. I find it more to the point to represent both metalogical concepts by the same sign” [Ibid., p. 98].

5. The genuine debate would probably have taken place between Carnap and Waismann. But Carnap left for Prague in 1931, not long after he had presented his metalogical project to the Circle. Would an explicit debate between the two thinkers have been possible? It is not sure that



the ground for understanding was present, Waismann sticking very closely to Wittgenstein's conceptions and Carnap breaking resolutely with the *Tractatus*' strictures.

In the *Logical syntax of language*, published in 1934, Carnap doesn't search for an agreement with Wittgenstein's positions anymore. We find there an explicit criticism of the view that there is no expressible syntax:

"In opposition to this view (that there is no expressible syntax), our construction of syntax has shown that it can be correctly formulated and that syntactical sentences do exist. It is just as possible to construct sentences about the forms of linguistic expressions, and therefore about sentences, as it is to construct sentences about the geometrical forms of geometrical structures. <...> Syntax is exactly formulable in the same way as geometry is" [Logical syntax of language, §73].

The same confidence is present in the intellectual autobiography of 1963, where Carnap looks back on the achievements of 1934: "[I] pointed out that only the structural pattern, not the physical properties of the ink marks, were relevant for the function of language. Thus it is possible to construct a theory about language, namely the geometry of the written pattern. This idea led later to the theory which I called "logical syntax" of language" [Schilpp, 1963, p. 282–283].

For Carnap, metalogic is the new discipline where clarification takes place. The logical empiricism, through its rejection of every metaphysical discourse, aims at redefining the role of philosophy. This task is present ever since the first essays by Schlick<sup>2</sup>. For the accomplishment of this task, sharp criteria are required, in order to depart genuine scientific statements from mere apparent, possibly metaphysical ones. Philosophy becomes the activity providing these criteria. Metalogic is one direction it can take, and that will become dominant in the Circle during the 1930's. However, his foundation remains controversial, and members like Waismann or Schlick will tread another path. Neurath will remain skeptical about metalogic. Elucidations are for him "mythological" [Stadler, 2015, p. 100]. What matters the most is the unity of science constructed as an encyclopedia.

6. The Vienna Circle exerted a stimulating role in the reflection on sciences. Its ability to address pressing methodological problems in sciences as diverse as physics, logic or economics, and the elaboration of philosophical interpretations enabled it to create a network of scientists striving towards the possibility of unifying the scientific discourse. The second conference for *Erkenntnislehre der exakten Wissenschaften* that took place in Königsberg in september 1930 is a milestone on this path. It was followed by many others, and after the premature deaths of Hahn and Schlick, and the exile of other important members (Carnap, Neurath), the project of a unifying science could, with the help of American philosophers, continue its development on the new continent.

<sup>2</sup> See for example *The boundaries of scientific and philosophical concept-formation*, 1910.



In the years 1930 and 1931, a lively discussion on the possibility of metalogic and metalanguages took place within the Circle. It was by no means a marginal discussion. Some members of the Circle, especially Carnap, were following the paths opened by the hilbertian program and the Polish school of logic. The discussion provided a philosophical dimension to this development, focusing on the status of elucidations and their possibility to be integrated in a theoretical discourse. If Carnap contributed significantly to the progress of metalogic, especially with the publication of *Logical syntax of language* in 1934, members like Waismann or Schlick were rather reluctant to import these tools into the philosophical discussion. A conception of the symbolism inherited from the *Tractatus* conceived the relation between a symbolism and its syntax as unable to become the topic of a theoretical discourse. To reach an agreement was however not a presupposition for the fruitfulness of the debate that was displayed. The Vienna Circle represents prominently the exercise of a dialogic rationality that should become an example for much of the subsequent philosophy of the 20<sup>th</sup> and of the 21<sup>th</sup> century.

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