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# Between Foundation and Convention:

Carnap's Evolution between Schlick and  
Neurath in the Vienna Circle

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## **Abstract**

For long the foundationalist image of logical positivism has been considered a matter of course. And it is basically accepted that R. Carnap has a great deal to do with this traditional image. Recent researches reveal that this image is not entirely true; Carnap can be deemed as a conventionalist also when some key conceptions are understood from a different point of view. Indeed, by examining some Carnap's works, we are urged to realize that his view of science is somehow situated somewhere between foundationalism and conventionalism. We argue in this paper that Carnap's weaving situation can be comprehended by taking into account the discussions taking place in the Vienna Circle and notably the debates among R.

Carnap, M. Schlick, and O. Neurath. We intend to make it explicit that Carnap's stance was first in line with that of Schlick's foundationalism and then moved to a more conventionalist one under the influence of Neurath. By this argument, we intend to demonstrate the following two points: 1) Discussions in the Vienna Circle were far from unanimous; 2) Carnap's stance containing 'an ethical attitude of tolerance' proceeded mainly under Neurath's influence.

**Key Words: Foundationalism, Conventionalism, R. Carnap,  
M. Schlick, O. Neurath**

## 1. Introduction<sup>\*\*</sup>

The main concerns of this paper are both epistemological and historical. The distinction between foundationalism and conventionalism concerning the basis of empirical statements is obviously an issue of crucial importance in epistemology. The historical part refers to the way according to which this issue has been addressed. It takes into account ideas developed during the heyday of logical positivism, notably the discussions taking place in the Vienna Circle. By dealing with both concerns, we intend to expose that the distinction between foundationalism and conventionalism is far more complicated than merely being an epistemological issue.<sup>1</sup> The discussions concerning this issue in the Vienna circle offer examples to profoundly examine it along with ideas of the Circle's prominent members, viz., R. Carnap, M. Schlick, and O. Neurath.

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<sup>1</sup> With regard to the epistemological issue concerning the position between foundationalism and anti-foundationalism, I am indebted to one of the comments made by the anonymous referees. The comment points out *that foundationalism and conventionalism do not have to be in a situation of straight opposition*. I benefit a lot from the conception and admit that it clarifies further my mind that Carnap's changing between the two positions must have a great deal to do with the conception exposed by this comment. For this, I express my gratitude to the exposition of this conception.

We attempt in this paper to argue that in their ideas, Carnap stands dynamically in the middle between the other two philosophers. With the label 'dynamically', we indicate that Carnap's stance was first in line with that of Schlick's foundationalism and then moved to a more conventionalist one under the influence of Neurath. By this argument, we intend to demonstrate the following two points: 1) raising our attention to the fact that discussions in the Circle being far from unanimous; 2) demonstrating that Carnap's stance of 'tolerance' proceeds under Neurath's influence. We hold that both points are 'overdue' if a more adequate assessment of logical positivism is anticipated. Undoubtedly, the 'overdue' situation has a great deal to do with the traditional view of logical positivism to which we now turn.

Traditionally, logical positivism, the philosophical movement which began in the early 1920's in Vienna, was conceived as a line of thinking with several common features attributed to some prominent scholars.<sup>2</sup> Despite its popularity, this conception has been constantly challenged ever since its formation, and recently, the challenges become the 'new common feature' in basically all studies in the field of the

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<sup>2</sup> Though the "common features" of logical positivism are the cores of tremendous amount of arguments, they nonetheless roughly refer to the following three directions: 1) the origins (e. g., empiricism and positivism); 2) the problems (e. g., in the philosophy of mathematics and of the physical and social sciences); 3) the concerns (e. g., all members in the Circle were strongly interested in social and political progress). The first two features are from Ayer (1959: 3-10) and the latter feature is from Carnap (1963: 23). Note that though the anti-metaphysical sentiment is generally held as the most presentable feature of the Circle, it was more like an issue of the "tacit agreement" among the members than that of the "announced claim". See Carnap (1963: 21).

history of logical positivism.<sup>3</sup> The new common feature exposes the fact that the holding of logical positivism as a movement with unanimous agreement in any regard is too illusory to be anything of reality. After all, individuals might hold something different from one another, even though they put forward their ideas under the same title.

The same situation applies to all members of logical positivism. Beneath the commonly-shared anti-metaphysical commitment, there arises right in the beginning of the formation of the philosophical group a severe dispute with regard to the epistemological basis of empirical statements.<sup>4</sup> Other than the detail concerning the nature of empirical statements, the dispute has its effect on the questions such as the confirmation of scientific theories, the introduction of scientific concepts, and the observational base of science. In brief, we can say that these

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<sup>3</sup> The "new common feature" refers to the idea that in logical positivism and in its interpretation or exposition, the importance "the left side" figures such as R. Carnap and O. Neurath played in the Circle has for long been ignored or simply put aside. See Cartwright, N., Cat, J., Fleck, L. & Uebel, T. (1996), Cirera, R. (1994), Giere, R. & Richardson, A. (eds.) (1996), Oberdan, T. (1993a), GA., Rodopi; Rescher, N. (ed.) (1985), Richardson, A. (1998), Rungaldier, E. (1984), Salmon, W. & Wolters, G. (eds.) (1993), Stadler, F. (1993), Uebel, T. (1991), Uebel, T. (1992a). The most direct reaction to this regard is that of Friedman, M., (1999).

<sup>4</sup> The different treatments metaphysical and epistemological issues received in Logical Positivism were explicitly pointed out by Ayer. This point may play role of crucial importance in our concern because it is not unusual to characterize Logical Positivism both "anti-metaphysical" and "verificationist". The characterization could be misleading if the epistemological disagreement among the members of the Vienna Circle were not appropriately dealt with. While, as generally held, the anti-metaphysical commitment among members of the Vienna Circle was hardly anything of disagreement, the epistemological issues (such as the relatedness between elementary statements and sensory experiences, between language and fact, or the whole function the elementary statements play in the verification) were never agreed upon among them. See Ayer (1959: 17-21).

questions are concerned with the valid link between our experience of the external world and our expressions of it or between the subjective experiences and the objective knowledge. The difficulty of establishing this link lies in the fact that the empirical statements are not infallible. 'How to establish the infallibility of the empirical statements?' has been one of the major themes in epistemology, but so far as most people would recognize, this attempt is far from being achieved.<sup>5</sup>

What has been argued in epistemology was rigorously debated in the Vienna Circle. Obviously, in these debates, there were huge amount of arguments concerning if the empirical statement recorded by individual experiences could be infallible. We however admit that a comprehensive analysis of them will certainly beyond the reach of this paper. Therefore, we have to set a limit. We plan to concentrate our concern on Carnap's way of dealing with the epistemological question. To Carnap, not only that the naïve foundationalism which holds the infallibility of the empirical statements is implausible, but the whole issue conceived in the traditional epistemology has to be transcended in the way so that the old concern of the establishment of the objective knowledge is discarded. Instead, he portrays an image that the old epistemological issue has to be replaced by the logic of science which puts aside the question regarding how to go

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<sup>5</sup> With regard to the trouble that holding the infallibility of the empirical statements is untenable, A. J. Ayer offers a concise description. He says: "Whether there are any empirical statements which are in any important sense indubitable is, as we shall see, a matter of dispute; if there are any they belong to a very narrow class". See Ayer (1998: 20-1).

from subjective experience to objective knowledge.<sup>6</sup> This transcendence shows that Carnap leaves the epistemological issue behind, and we are going to examine the epistemological change taking place in the Vienna Circle by surveying the ideas of Schlick and Carnap.

## 2. The epistemological debates

In a series of papers, T. Uebel and T. Oberdan argue if there is anyone among the Vienna Circle could be considered a foundationalist.<sup>7</sup> The question from which the debates are launched refers to this one: “how should we conceptualize the empirical basis of science?” (Uebel, 1996: 417). According to Uebel, this question is “the leading question” of the Vienna Circle’s notorious protocol sentence debate and it sheds light on the epistemological basis of science. With regard to this question, ideas of M. Schlick, R. Carnap and O. Neurath, the three most prominent members of the Vienna Circle are taken into account. The selection of them representing the essential part of the Vienna Circle is sound, not because they are the members most frequently referred to in the Circle, but because they represent the two major opponent groups in the

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<sup>6</sup> In *Actes du Congrès Internationale de Philosophie Scientifique, Sorbonne, Paris*, 1936, Carnap published an article entitled “Von Erkenntnistheorie zur Wissenschaftslogik”. Vol. 1, *Philosophie scientifique et empiricisme*, pp. 36-41, which is analyzed by Richardson (1996: 309-332).

<sup>7</sup> These papers include: Uebel (1996, 47: 415-440), Oberdan (1998, 49: 297-308), Uebel (1999, 50: 297-300), Oberdan (1999, 50: 301-304).

development of the protocol controversy.<sup>8</sup> According to Uebel's exposition, the traditional interpretation of the Vienna circle portrayed them all as more or less classical foundationalists (Uebel, 1996: 419). Nowadays, mainly due to the recent researches exploring the diversity among members of the Vienna Circle, the credit of the traditional interpretation decreases so rapidly that we even wonder if this interpretation still makes sense at all. Yet, regardless of the fact that it did not portray a correct image, it somehow deserves to be considered in another way, i.e., is it necessary to attribute an epistemological position to all of them?

Apparently, the answer to the above-mentioned question is not difficult to find. This tendency of attributing an epistemological position whatsoever to the members of the Vienna Circle had to be caused by the importance derived from the decision made upon the empirical basis of scientific knowledge. After all, there was a period of time during which the expulsion of epistemology from the stage of philosophy was unthinkable. This was due to the fact that Schlick who, with the fame he gained by organizing the group, stressed the epistemological issues. This fact might constitute an essential part of the reasons explaining why the title of classical foundationalism was attributed to them, but we now know that even to Schlick the title could be inadequate, and to the cases of the other two philosophers, Carnap and Neurath, this was by no

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<sup>8</sup> It is generally held that with respect to the question concerning the empirical basis of science, Schlick represents the right wing side and Carnap and Neurath the left wing side (Uebel, 1996: 430). For a more detailed explanation of the opposition, see (Ayer, 1959: 20).



means true.<sup>9</sup> While Schlick held that a proper theory of knowledge can meet the difficulties posed by these crucial questions, Carnap and Neurath, after the repudiation of metaphysics, would continue the so-called revolution by expelling epistemology out of the stage of philosophy. In fact, with respect to the problem concerning the empirical basis of scientific knowledge, there is a difference in degree of radicalism among these three philosophers (i. e., Schlick, Carnap, and Neurath). We can examine this difference by considering, among them, who is more inclined to reject the traditional views of metaphysics, epistemology and philosophy. Whoever is more determined than the others by criticizing the traditional views is thought to be more radical than the others.

It is well-known that anti-metaphysics is a common feature among all members of the Vienna Circle. To this regard, Schlick is no exception. However, he is also the least radical among the three philosophers because his view basically stops at this stage of anti-metaphysics.<sup>10</sup> Carnap is the more radical one than Schlick, but not enough from Neurath's stand point of view. According to Richardson (Richardson, 1996: 309), the first stage of scientific philosophy to Carnap was the rejection of metaphysics and the second stage was not quite a rejection of epistemology as such, but "of the synthetic *a priori* and the

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<sup>9</sup> M. Friedman even calls the view attributing 'philosophical foundationalism' to logical positivism, "an almost total perversion of the actual attitude of the logical positivists" (Friedman, 1999: 2-3).

<sup>10</sup> Schlick's opposition to metaphysics is well-known and has an extensive exposition by himself. See. Schlick (1959: 57). We say that Schlick is neither in opposition to epistemology nor against philosophy as a whole is based on the content entailed in "On the Foundation of Knowledge". In this paper, even though the epistemological foundation is an issue of debate, yet the necessity of discussing the epistemological questions is present. And this reveals straightforwardly that the whole project of philosophy is leading ahead toward its target.

consequent adoption of empiricist epistemology” (Ibid.). Richardson reiterates that epistemology was not completely repudiated, but purified and decomposed into its constituent parts which are psychological and logical. In brief, as the title of Carnap reveals, epistemology is purified to the logic of science (Carnap, 1936). Carnap’s rejection of epistemology is limited within the extent of the empirical field, whereas Neurath’s position is undoubtedly the most radical one among all of the three. He rejects not only metaphysics, but also epistemology whose questions for him can “be transformed into empirical questions so that they can find a place within unified science”.<sup>11</sup> In fact, according to N. Cartwright and T. Uebel, Neurath, more than rejecting metaphysics and epistemology, eliminates philosophy as well, at least the philosophy conceived in the traditional understanding of it (Cartwright & Uebel, 1996: 41). The anti-philosophy label is by no means an overstatement attributing to Neurath. He says

The basic idea that we have, finally, no firm basis, no system to fall back on, that we must always go on searching restlessly, and that we may experience the most unexpected surprises if we want to test the fundamental assumption we have been using all along, this idea is characteristic of the attitude which we may call “encyclopedism” (Neurath, 1983: 141).

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<sup>11</sup> Neurath’s rejection of epistemology and his opposition against Carnap’s epistemological endeavour is explicitly exposed in the paper “Soziologie im Physikalismus”, originally published in *Erkenntnis* 2, pp. 393-431. This paper is translated in English with the title “Sociology in the Framework of Physicalism” and collected in Neurath (1983: 58-90).

On the basis of this exposition, we can find that, in ‘encyclopedism’, there is no “definite limit” or “a line of demarcation” according to which we can distinguish one domain of study from the others; our practical life as a whole is concerned here. There is only one thing which has to be included in the search of the human understanding, i.e., “our everyday formulations”. And Neurath, if conceived as a specific field of knowledge, puts philosophy aside directly. For all these reasons, there is little doubt that Neurath has to be the most radical one among the three representative figures of the Vienna Circle, who all intend to launch a “philosophical revolution” by repudiating the traditional views of philosophy. It is rather based on the “revolutionary nature” that Uebel wonders if any among the three philosophers should be considered a classical foundationalist.

Though the traditional view is very much in doubt, the doubting situation should not prevent us from detecting the fact that something like ‘an Archimedean vantage point’ (referring to the ongoing special sciences) does exist in some of their theoretical formulations. This reminds us of the fact that while intending to replace the traditional view with a new approach, many positivists were committed to the view that “it is special sciences that are foundational for philosophy” (Friedman, 1999: 3). With regard to this commitment, Neurath’s radical position stands as an exception; he holds a dynamic view regarding the meaning of empirical statements. Neurath is determined to bring their meaning in combination with the context of concrete situations rather than deciding it from afar. It is basically due to this ‘determination’ that Neurath’s position should not be

deemed a 'foundationalist', whatever the word may mean.<sup>12</sup> Hence, with respect to the issue concerning the epistemological basis of scientific knowledge, we are going to concentrate on Schlick and Carnap. However, difference remains between them, and sometimes the difference sheds light on some fundamental issues. We are going to explore this difference in order to find out in what way that the protocol sentence debate has been developed in the Vienna Circle.

### 3. Schlick's Foundationalism

Schlick is the one among members of the Vienna Circle who explicitly holds that the wish for absolute certainty of knowledge is indispensable.<sup>13</sup> And here comes the debate between Uebel and Oberdan regarding the issue if Schlick should be considered an anti-foundationalist or a plain foundationalist (Uebel, 1996: 419-424; Oberdan, 1997: 301). The debate boils down to an identification of what "foundations" are for Schlick. According to Uebel, Schlick seemed explicitly replacing his wish for the certainty of knowledge by introducing his conception of affirmations. Yet,

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<sup>12</sup> Though strongly against the designation making oneself being a member of a specific tradition, Neurath's position has been entitled by many with various names such as "coherentist", "conventionalist", "naturalist", "physicalist", "encyclopedist", "anti-foundationalist" etc. What we intend to stress here is the fact that from these names, attributing foundationalism to Neurath's position is inappropriate

<sup>13</sup> This refers to a paper "Über das Fundament der Erkenntnis", *Erkenntnis* 4 (1934: 79-99). This paper was translated with the English title "On the Foundation of Knowledge" in *Philosophical Papers, Vol. 2*, H. Mulder and B. van de Velde-Schlick eds. (Dordrecht: Reidel, 1979: 370-387).

what seemed to be was far from being real; the conception of affirmations Schlick proposed could not be counted as the anticipated "foundations". This is because of the fact that affirmations for Schlick are not something that we can know (in order to be a part of our knowledge), but "a carrying-out of the process required for the verification of all synthetic propositions" (Schlick, 1934: 385). In other words, the "affirmations" Schlick talked were not parts of knowledge, but acts to verify. Uebel stresses the fact that this conception of affirmations can at its best serve as a conception of "indexical beliefs" which may not have anything to do with the truth value of it. Obviously, to be a foundation on the basis of which the certain knowledge is founded, 'being necessarily true' is nonetheless required (Uebel, 1996: 420).

To Oberdan, that Schlick's conception of affirmations does not play the role of "foundation" is acceptable. For indeed, even Schlick himself would not hold this as true, yet this fact does not therefore drag Schlick's position into that of anti-foundationalism. Whether Schlick should be seen as a foundationalist or anti-foundationalist depends upon the issue if from his theory there were other things which could be held as "foundations" in the sense of the Cartesian epistemology. To Oberdan, it was not the Affirmation procedure to which knowledge flickers out, but the protocols, i.e., "singular physicalistic observational statements that belong to the language of the system of science" (Oberdan, 1997: 301). Uebel replies Oberdan that: "the suggestion that, for Schlick, the fallible protocols serve as foundations and not the problematic affirmations is ingenious, to be sure, but is it justified by the text?" (Uebel, 1999: 298). Clearly, the central point of debate turns to the interpretation of Schlick's text. Let's have a look of what Schlick says regarding the relationship between the "foundations" and the "protocols".

If we look on science as a system of propositions... , then the question of their foundation... can be answered as we please, for we are free to define the foundation at will... The most general propositions of science, i.e., those which are most commonly selected as 'axioms', could be designated, for example, as its ultimate foundation; but the name could equally well be reserved for the most specific propositions of all, which would then in fact actually correspond to the protocols written down; or some other choice would be possible. But the propositions of science are one and all *hypotheses*, the moment they are seen from the standpoint of their truth-value, or validity (Schlick, 1935: 386).

From this text, we have enough reasons to believe that Schlick has no intention to set forth a foundation in the Cartesian way. However, the paragraph can also be interpreted in two consistent (to Schlick) ways: 1) the 'affirmation' is the foundation, but it is not a state of knowledge, rather an 'act of acquiring knowledge' and 2) the 'protocol' is the foundation, but it is not infallible. The 'two ways interpretation' helps us to see why Oberdan reacts to Uebel: "Of course, just because protocols cannot provide a *firm* (i.e. certain) foundation, that does not mean they can not provide *any* foundation at all" (Oberdan, 1999: 302). Oberdan seems to imply that Schlick's foundationalism no longer holds the doctrine of infallibility and instead it turns out to be a kind of 'modest foundationalism'.

The transition from 'plain foundationalism' to 'modest foundationalism' is required on the basis of for two reasons: 1) The fallibility of sensations. Although Schlick says explicitly that in protocol propositions, the reference is always perceptions (Schlick, 1935: 386), but the observational statements recorded from perceptions cannot reach the requirement of the necessary truth. Ayer says: "One can indeed be mistaken about the

experiences that one is going to have in the future, or even about those that one has had in the past; it is not maintained that our memories cannot deceive us..." (Ayer, 1957: 18). 2) The exigency of foundation. To Schlick, if we admit all protocol propositions which record real happenings established on the daily basis, then we fall in a "peculiar relativism" that "for anyone in search of a firm foundation for knowledge... providing nothing of the kind" (Schlick, 1935: 374). This is mainly due to the fact that without conceiving a criterion of truth (or the firm foundation of knowledge), all propositions of the so-called real happenings can be admitted so long as these propositions are merely conventional in the sense that they are derived from a coherent whole with internal consistency. However, to Schlick, this would lead the whole attempt of truth to failure because in that situation we are in no position to distinguish between what is scientific and what is a sheer matter of fantasy (Schlick, 1935: 376).

To some extent, we have to admit that "modest foundationalism" is a compromise between the above-mentioned two viewpoints. Actually, these two viewpoints are in conflict. They remind us, on the one hand, the logical impossibility of reaching the absolute certainty of our empirical statements and, on the other hand, the attempt of building up truth criteria should not therefore be defeated (Pojman, 1995:112-7). These two conflicting viewpoints reflect a crucial fact. For those who consider that the search for the foundation of knowledge is required and that not all propositions are acceptable in science, a tremendous amount of effort is nonetheless needed in order to reach a balanced view. Schlick is obviously the one who still upholds the attempt to acquire the certainty of knowledge. Carnap however is more tolerant in this regard. He is in full awareness of the difficulty this attempt confronts. Yet, while being less rigid in setting criteria for the certainty of knowledge, he would not be willing

to include all propositions into the domain of science. This might explain why, while Carnap thinks that the traditional view of epistemology needs to be replaced by the logic of science, he maintains throughout his career that the ongoing development of special sciences offer paradigmatic examples for knowledge.

#### **4. Carnap's position between foundation and convention**

Though he may not be discontent with being considered from an epistemological point of view, Carnap's position has been extensively discussed in terms of the theory of knowledge. He is sometimes called "conventionalist" (Rungaldier, 1984), or "critical conventionalist" (Richardson, 1998). And at some other times, he could also be considered to be a foundationalist (Uebel, 1996: 418), a verificationist (Cirera, 1994: 149-168), a phenomenalist reductionist (Richardson, 1998: 181), a coherentist (Oberdan, 1997: 306), a relativist (Earman, 1993: 12-15), etc.<sup>14</sup> Without doubt, this list can continue to reveal

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<sup>14</sup> These attributions to Carnap can continue with more inclusions. However, our purpose here is not a complete list, rather is simply to demonstrate the changing nature of Carnap's epistemological position. This nature highlights the fact that many of the positions listed here are cast in further examination such as the title "the apparent foundationalist" brought by Uebel to Carnap is actually to prove that Carnap is in fact not a foundationalist, and this fact was ignored by many who hold the traditional interpretation of Logical Positivism. This clarification at the same time exposes our intention to show that Carnap's position on the one hand contains incompatible positions, and on the other that he may not be suitable to be understood in terms of the traditional epistemology.



more titles. However, our interest does not lie in the completion of the list. Rather, our interest is to comprehend why Carnap's epistemological positions are so changeable that sometimes they are even incompatible. Take the examples between that of foundationalism and phenomenal reductionism on the one side and, and that of conventionalism and relativism on the other side. The former refers to a position which holds truth criteria justifying the scientific knowledge, where as the later refers to the anti-empirical thesis which holds that all conceived knowledge is justified not on the basis of self-evident experiences, but on the convention with which the people concerned share. Obviously, these two positions are in divergency and hence our question is 'how can they be attributed to the same person, namely, Carnap?'

The answer to this question could be a pure matter of personal psychology, which is untraceable. Yet, there is a putative way of probing this question, which is to set a hypothesis. We can in the first place assume that adopting which epistemological position was not really a serious matter for Carnap as the discipline of epistemology has to be eliminated after the rejection of metaphysics, at least in its traditional form. So, unlike Schlick who considers the wish for certain knowledge is indispensable, Carnap, since the very beginning of his career, would not accept that the certainty of knowledge can be achieved by setting up the authorized stance of experiences. He was fully aware of the fact that the bridge between the subjective experiences and the objective knowledge is far from easy. Therefore, with regard to the question concerning the empirical basis of scientific statements, Carnap's position is distinct in the sense that he did not hesitate to put forward his conventionalist position and at the same time, he would not believe that philosophy of science proceeds without some ideas of foundation. The points are here: 1) holding both the foundationalist and the conventionalist attitudes does not

therefore make his position in contradiction; 2) the incompatible attitudes are merely apparent, and the line of his philosophical development is continuous going through various periods of time. While talking about Carnap's philosophical development, we are fully aware of the impossibility of taking into account a comprehensive survey of his view. We therefore selectively limit our concerns within the period of time when Carnap put forward his ideas in the discussions of the Vienna Circle.

We can chronically manifest the development (i.e., Carnap's holding of various incompatible positions at different periods of time) by referring to the conceptions of 'convention' and 'foundation'. Note that, while using these two conceptions, we do not therefore talk immediately about Carnap's conventionalism and foundationalism which we have to avoid because of their apparently mutual exclusivity. By looking at the development of Carnap's thought, what we intend to stress is the fact that at various periods of time, Carnap holds them without being troubled by their apparent incompatibility. It is very interesting to find out the reason underlying this line of thinking because being consistent in maintaining two apparently opposite conceptions is by all means rather uncommon. This 'uncommon' character of Carnap has a great deal to do with his idea referring to the meanings of 'foundation' and 'convention'.

From what we have seen about Schlick's conception, we are aware that in the Vienna Circle, the traditional conceptions of 'foundation' such as the non-inferential basis of the empirical knowledge and the self-evident property of intuition are certainly gone. What role of the empirical knowledge still plays in relating and confirming scientific theories is the issue concerned here. For Schlick, it was the affirmations of scientific theories by the applications of the protocol propositions, whereas for Carnap, this was never something of a fixed and

static nature. Yet, with regard to this issue, Carnap's position changed from time to time. He was rather consistent in maintaining that the empirical knowledge was not entirely unrelated to the engagement of scientific theories. In what follows, we will see at least during the period of his *Aufbau* time<sup>15</sup>, the relatedness of the empirical knowledge was maintained as something of foundational nature for Carnap. On the other hand, we come to the conception of "convention". When the conception of "convention" is referred to, we do not mean its narrow meaning such as the foundation of mathematics and physics (Carnap, 1963:15). Instead, we talk about the broader sense of the conception which usually refers to the formation of empirical knowledge depending on relativized descriptions of the world. It is very much in line with what Rungaldier says: "there are equally valid alternative ways of describing the world and that the commonly chosen is not said to be 'truer' than the others, only simpler or more convenient" (Rungaldier, 1984: I). We have to say that by our definition, these two conceptions are in conflict because while that of convention does not award the privileged status to any form of experiences, the conception of foundation clearly does not tolerate relativism. However, from our point of view, the intertwined employment of them is precisely what Carnap has done and it also explains why to many, Carnap's position seems to be puzzling or even paradoxical.

In his early writings,<sup>16</sup> Carnap admits that under the influence of the French philosopher of science, H. Poincaré, he adopts conventionalism in discussing questions of physics and

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<sup>15</sup> Referring to the period of time when Carnap published his book. (Carnap, 1928).

<sup>16</sup> These writings include Carnap's doctorate dissertation. see Carnap (1922; 1923: 90-107; 1924, 4: 105-30; 1925, 30: 331-45; 1926; 1927, 1: 355-74).

mathematics (Carnap, 1963: 13).<sup>17</sup> This was during the time between 1922 to 1927, or the so-called period before the reputed *Aufbau* published in 1928. At this period of time, Carnap's conception of convention was dependent solely upon the "availability of empirical topological facts", or "the structure of experiential relations" (Richardson, 1998: 180). However, in 1928 when *Aufbau* is published, Carnap seems to change radically as Richardson puts

It might seem that by 1928, in the *Aufbau*, Carnap has changed his mind radically. The antireductionism seems to have been given up and this, one might assume, must bring in its wake the rejection of the difference between the form of experience and the form of objective knowledge. That, in turn, seems to require giving up the anti-empiricist view (Richardson, 1998: 181).

This paragraph seems to indicate that Carnap of *Aufbau* is quite different from his previous works and this difference leads people to award an apparently foundationalist view to Carnap, which, in terms of Uebel, "has prevented many from realizing the radicality of the Vienna Circle's challenge to traditional philosophy" (Uebel, 1996: 418). According to Carnap, in *Aufbau*, his aim was not simply to describe the cognitive process, instead his real aim was a "rational construction, i.e., a schematized description of an imaginary procedure, consisting of rationally prescribed steps, which would lead to essentially

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<sup>17</sup> Two extensive discussions of the conventionalist implications entailed in these early writings of Carnap are Runggaldier (1984: 1-60) and Richardson (1998: 159-182). A more recent research concerning the French influence on logical positivism has revealed that 'the conventionalist aura' was adopted at its early stage. See Brenner (2002).

the same results as the actual psychological process” (Carnap, 1963: 16). We can be certain that it was mainly due to this ‘rational reconstruction’ that Carnap was once considered, along with Chlick, a foundationalist (Uebel, 1996: 418). The ‘foundationalist Carnap’ was so prominent that he was listed in the text book of epistemology right beside Descartes (Pojman, 1995: 170). What can be said in order to explain this drastic change taking place in one of the most influential philosopher of science in the twentieth century? As it is a matter of personal choice, the answer does not seem to be easy. Yet, we believe that maintaining something of the foundational nature has constantly been Carnap’s personal commitment as he mentioned about himself. Since his pre-university years onward, Carnap was in sympathy with the ideas that “the scientific method was the ‘only’ of obtaining well-founded, systematically coherent knowledge and with their humanist aim of improving the life of mankind by rational means” (Carnap, 1963: 7). There are in fact two sorts of commitments involving here: one is that of epistemology, (i.e., the pursuit of the well-founded and coherent knowledge); the other is that of humanitarianism, (i.e., the improvement of the life of mankind). Both commitments are influential throughout Carnap’s life and we believe that they explain the aforementioned change of Carnap.

However, the change did not last very long. By surprise, Carnap admitted later in his “autobiography” that he finally gave up the project of ‘rational reconstruction’ established on the basis of a phenomenalist language and instead he shifted to another language founded upon physicalism. He reiterated explicitly that “For me it was simply a methodological question of choosing the most suitable basis for the system to be constructed, either a phenomenalist or a physicalist basis” (Carnap, 1963: 18). Carnap stressed also that the freedom of choice among different forms of language was held by him throughout his life and he formulated it as ‘Principle of

Tolerance' in his *Logical Syntax of Language* (Carnap, 1934). Later on, Carnap recognized that he chose the physicalistic basis "because it appeared to him more suitable for a system of all scientific concepts than a phenomenalist one; therefore the specific problems of the system of *Aufbau* lost their interest for him" (Carnap, 1963: 19).

According to Earman, it was in *Logical Syntax of Language* that Carnap proclaimed his relativistic thesis, i.e., the relativity of all philosophical theses to language (Earman, 1993: 12). The thesis was put forward in order to solve philosophical disputes (e.g., the argument between phenomenism and materialism) by considering various stances as different sorts of languages which are compatible with each other and they are all true. What remains is the freedom of choice; we choose the language which appears to be the most suitable one to us. Obviously, the languages here are conventional in the sense that anything about their ontological theses is repudiated out of the extent of discussion. In the face of this explicit conventionalist position, we are aware of the fact that Carnap has changed his position by moving from foundationalism to conventionalism. Now, Should we, as the traditional view holds it, think that this 'move' which goes around two inconsistent positions, causes a problem in Carnap's thought? We do not think so and instead, we maintain that this move clearly demonstrates a consistent position of Carnap. This is probably the reason why he reiterated that throughout his life he remained the same (Carnap, 1963: 18).

We have said earlier, epistemological positions no longer play roles of crucial importance in Carnap's thought. What is important to him is rather to stand firm on a neutral position and to make choice among various systems of languages according to which one best suited to our purpose. This was his position

not only during the time of *Logical Syntax of Language*, but even during the time of *Aufbau*. Carnap conceded that he “had indicated the possibility of taking a physicalistic basis instead of the phenomenistic one actually used in the book” (Carnap, 1963: 51). While saying that, we need not postulate a sharp break in Carnap’s thinking. The change of Carnap’s idea is evolutionary rather than revolutionary as Uebel argues that the conventionalist position was constantly present in *Aufbau* and the conventions are used by Carnap as ‘devices of rational construction’. “Moreover”, says Uebel, “these conventions do not recapitulate a pre-existing order of reasons but rather create the context of justification for claims about the external world” (Uebel, 1996: 427). By this, we can say that there might be a transitional period in Carnap, but there happened to have a period of change in his line of thinking seems to be evident.

Now, despite the apparent variation between being a foundationalist and a conventionalist, our interest in this regard does not lie in the discovery of precisely which position is Carnap’s. Instead, our interest lies in answering the question: what causes the change from doing a painstaking effort in rational constructing the empirical statements to freely choosing a language of physicalism. Although as Carnap himself later emphasized that he had the respect for free choice among various systems of languages throughout his life, he could not explain why he would spend time in developing a language set on the phenomenistic basis and shift later on in developing a language set on the physicalistic basis. We believe that this shift has a great deal to do with Neurath’s influences on Carnap.

## 5. Neurath's influences on Carnap

With respect to Neurath's influences on Carnap, we are going to limit our concern within the field of the latter's shift to physicalism. By exploring Carnap's reasons for making this shift, we would like to stress at the same time that this is a concern which goes beyond the range of theoretical extent. According to Carnap, Neurath's influences on him are manifold. Yet, we intend to analyze them in terms of two regards: one is theoretical and the other, ethical. Before we start to look at these two aspects, we will first of all examine two characteristics from Neurath which straightforwardly got Carnap impressed, i.e., rigorous criticism and social holism. While Carnap, along with Schlick and Russell, maintained the task of philosophy is set and determined to the pursuit of truth, Neurath strongly criticized the customary view, "that a wide-spread acceptance of a philosophical doctrine depends chiefly on its truth" (Carnap, 1963: 22). While Carnap and many others held the neutrality of logic, applied logic, the theory of knowledge, the methodology of science, and science, Neurath severely criticized this idea of neutrality, "which in his opinion gave aid and comfort to the enemies of social progress" (Carnap, 1963: 23). To Carnap, Neurath was not just criticizing, but he had a vision which is too broad to be conceived by most of the members of the Vienna Circle. Carnap says

He (Neurath) shared our hopeful belief that the scientific way of thinking in philosophy would grow stronger in our era. But he emphasized that this belief is to be based, not simply on the correctness of the scientific way of thinking, but rather on the historical fact that the Western world at present time, and soon also the other parts of the world, will be compelled for economic reasons to industrialize



more and more... Consequently the general cultural atmosphere will become more favorable toward the scientific way of thinking (Carnap, 1963: 22).

From this paragraph made by Carnap about the characteristics of Neurath, it would not be an overstatement to say that Neurath not only derided the traditional way of doing philosophy, but submitted all things be it political, social, cultural, economic, etc, to the investigation of science. We have enough reason to believe that it was on the basis of this critical and holistic attitude that Neurath put forward his physicalistic attitude. Carnap was aware of the fact that the theoretical concern was not everything counted for Neurath, therefore when he mentioned Neurath's physicalism, he stressed the word 'attitude' rather than that of 'belief'. He gave his reason: "because it was a practical question of preference, not a theoretical question of truth" (Carnap, 1963: 51). Yet, due to the fact that Carnap would keep the theoretical endeavor neutral to the practical concerns, he can appreciate Neurath's ideas on both theoretical and ethical grounds.

First, the theoretical reasons explaining why Carnap accepted physicalism urged by Neurath can be uncovered by reading Carnap's "On Protocol Sentences" (Carnap, 1932). In this essay, Carnap began by demonstrating that the difference between him and Neurath referred to "a question, not of two mutually inconsistent views, but rather of *two different methods for structuring the language of science both of which are possible and legitimate*" (Carnap's italics, 1932: 457). This quotation of Carnap may seem an application of his 'Principle of Tolerance', but in fact, it demonstrates Neurath's criticism on him regarding the idea of protocol sentences. When Carnap proposes his idea of protocol sentences, he has a specific purpose: establishing a basis on which the meaning of scientific claims is judged. This idea is needed because scientific beliefs always need to be revised once there are new evidences

available. If scientific beliefs cannot be incorrigible, then it would directly imply that all scientific claims are dubitable. To Carnap, though we cannot justify scientific claims for being statements covering too many unforeseeable possibilities, scientific claims contain an observational part which nevertheless provides a limited confirmation for a scientific claim.<sup>18</sup> What Carnap has in his mind seems to limit the meaning of scientific statements within the extent of their observational 'core' which can be formulated by an observer as 'protocol sentences'. Then, this observer will compare these sentences (referring to the observational core of scientific statements) with actual protocol language system (referring to the statements established on the basis of direct sensations). If the result of comparison is an 'acceptance', then the acceptance constitutes the justification of the protocol sentences concerned here. By the same token, the protocol sentences are therefore conclusively established, unlike ordinary scientific statements, which are not. Carnap even calls the protocol sentences "the epistemological point of departure" (Carnap, 1932a: 191). From this, we clearly see that for Carnap, a protocol sentence plays the role of 'scientific foundation' as it is taken to be immune to correction, at least in this limited sense.

Though a protocol sentence derived from sense perception of a specific person might be employed as a 'foundation' for scientific statements, the problem remains. The problem comes from the fact that while personal observations might establish

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<sup>18</sup> Oberdan recapitulates Carnap's protocol language containing three different views : 1) the basic elements constituted by the simplest sensations and feelings; 2) a phenomenalistic view of sense regions taken as basic elements; 3) a physicalistic conception regarding material things as the objects directly perceived (Oberdan, 1993a:16-7).

protocol sentences, the inter-subjective consensus is nonetheless lacking. Without the needed inter-subjectivity, protocol sentences can never be used as evidence for the existence of physical states of affairs on which scientific knowledge rests (Oberdan, 1999: 24). However, at this stage, Carnap was not worried by this problem and instead, he moved forward to the confirmation that protocols were conceived, first and foremost, as facts (Carnap, 1932a: 195). Carnap holds that, “between the contribution of these assertions to our scientific knowledge and the contribution of a barometer there is, basically, at most a difference of degree (Carnap, 1932a: 181). He even grants a position of ‘methodological solipsism’ to himself, stressing that one can translate his own protocol sentences “according to the postulated translation rules into the physicalist language” (Carnap, 1932b: 462).

‘Methodological solipsism’ may seem to be an idea further away from the idea of inter-subjectivity, but in accordance with Oberdan’s interpretation, the two ideas are actually two dimensions of the same thinking. It is true that Carnap previously emphasizes that the ‘philosophical senses’ of protocol sentences can be captured and satisfied by syntactic analysis referring to the explication of the meanings of terms and sentences via formation rules of the language. He now realizes that, as the ‘solipsistic observers’ stand on an equal footing, “all observers are created equal” (Carnap, 1932b: 463). Consequently, the problem of inter-subjectivity might be able to dissolve if we take all observers’ sentences into account without referring to a meta-linguistic structure. Clearly, the argument at this point boils down to the question concerning if it is necessary to assume a meta-linguistic structure which goes beyond all protocol sentences. Being in full awareness of this question, Carnap makes a distinction between his and Neurath’s stances: On the first method, the protocols are considered “extra-systematic elements translatable into meaningful

physicalistic statements” and on the second method, the one Carnap ascribed to Neurath, “protocols belong to the same language as proper scientific statements”.<sup>19</sup>

From these two methods, we see a clear difference at first sight. While Carnap holds that a somewhat meta-language is indispensable to generally guarantee and demonstrate the meaning of all protocol sentences, Neurath thinks however that language being used is sufficient to guarantee the inter-subjective meaning of protocol sentences. To Neurath, the inter-subjectivity is confirmed as soon as the language has been used in ordinary conversations. Being a conventionalist all his life, Neurath does not see the need for a meta-linguistic structure to identify the meanings of protocol sentences; the daily usage of language is sufficient to achieve the inter-subjective understanding. Carnap, though previously taking a different stand, concedes to Neurath’s idea of conventionalism. He even admits that: “In both cases we use the statement of our neighbor’s B to enrich our knowledge about the processes (physical, intersubjectively comprehensible processes) just as we evaluate the statements of the signal machine for the same purpose” (Carnap, 1932b: 461). To what extent can we say that they are holding the same idea with different approaches? Oberdan thinks that Carnap’s ‘first method’ is a generalization of Neurath’s proposal (Oberdan, 1999: 35). Judging from this ‘reconciliation’, Oberdan affirms that Carnap demonstrates a ‘shift’ at this point. He by now holds that meanings of

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<sup>19</sup> The word we use here are Oberdan’s (Oberdan, 1993: 33) and the original words of Carnap are section titles of his paper “On Protocol Sentences”: ‘The First Language Form: Protocol Sentences Outside the System’ (Carnap, 1932b: 458) and ‘The Second Form of Language: Protocol Sentences Inside the System Language’ (Carnap, 1932b: 463). We use Oberdan’s words for reasons of context and clarity.

observation reports are to be treated as uninterpreted signals. In other words, protocol sentences are no longer treated as meaning indicators, but physicalistic statements of the language being used. "Concrete sentences" of language system are taken as protocol sentences, i.e., as testing bases. Concrete sentences are all we can expect for mutual understanding in ordinary conversations and beyond them, there is nothing. By exposing these ideas, Carnap seems inclined to accept Neurath's ideas and he admits

...the question of the form of protocol sentences is to be answered not by an assertion, but by a postulation. That also holds for the same question within the second language form; thus for the question of which concrete sentences of the physicalistic language are to be taken as protocol sentences (Carnap, 1932b: 464).

From this paragraph, we can see that Carnap changes from an assertion of the meaning of observation reports to a postulation of the meaning existing in concrete sentences. The change from 'assertion' to 'postulation' is significant in the epistemological concern as Creath points out: "Rather, Carnap's conception is important because it provides, perhaps for the first time, a non-Cartesian answer to the question of why we should trust our senses which does not circularly presuppose the validity of the observational judgments in question" (Creath, 1987: 473). Creath has good reason to be hesitate concerning if Carnap offers the first non-Cartesian answer because he also knows that Carnap's idea is developed under Neurath's influence. Carnap himself agrees that his change takes place under Neurath's influence and the influence does not limit within the extent of epistemology. According to Carnap, the influence contains also a practical implication: the positive correlation of social progress. Carnap recollects that Neurath's insistence on physicalism is to him an attitude, rather than a belief because it is proposed as an outcome of a practical

question of preference, not a theoretical question of truth (Carnap, 1963: 51). The central idea of Neurath refers to his attitude which does not trim any statement on the basis of a pre-established criterion of truth.

(Neurath) emphasized that all practical decisions are interconnected and should therefore be made from the point of view of a general goal. The decisive criterion would be how well a certain language form, ... could be expected to serve the community which intended to use it. His emphasis on the interdependence of all decisions, including those in the theoretical fields, and his warning against isolating the deliberation of any practical question, even that of the choice of language form, made a strong impression upon my own thinking and that of my friends (Carnap, 1963: 51).

Undoubtedly, from this paragraph, we can see clearly that Neurath's influence on Carnap does not limit within the extent of epistemology. We might even be able to say that what changes Carnap is less a theoretical concern than a practical concern. To Carnap, the major purposes of philosophy are twofold: philosophy leads to a better understanding of all that is going on both in nature and in society. While scientific way of thinking is definitely helpful with regard to our inquiry of nature, a more tolerant attitude towards concrete sentences uttered by all peoples will certainly be helpful for our understanding of society and therefore serve to the improvement of human life.

## 6. conclusion

In this paper, we begin from analyzing the conception of foundation held by Schlick. Being aware of the fact that all major members of the Vienna Circle (i.e., Schlick, Carnap and Neurath) no longer maintained conceptions in terms of the traditional epistemology, we find that Carnap's position appeared in the form sometimes close to the conception of foundation, other times, that of convention. This fact puzzles many simply because people generally would not commit to an epistemological position in which apparently inconsistent positions coexist. We, by showing the fact, endeavor to put forward the thesis, arguing that Carnap was after the period of *Aufbau*, influenced by Neurath. What we stress in this argument is not just a historical proof demonstrating the influences Neurath exerted upon Carnap. Moreover, what we also try to stress here is the idea that in the field of the philosophy of science, the ethical concerns or practical elements constantly play roles of crucial importance. Carnap is by no means an exception. Neurath's influences, which made his 'shift' to physicalism, contain both theoretical and ethical concerns. Notably the later ones, which are often ignored under the slogan of the neutrality of scientific research and methodological inquiry, had been more important than we have previously thought.

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# 在「基礎」與「約定」之間

卡爾納普在「維也納學派」  
介於石里克與紐拉特之間的發展

苑舉正

摘要

長期以來，「邏輯實證論」的基本立場均視之為是「基礎論」的。同時，一般人也認為，卡爾納普是導致這個印象的主要人物之一。不過，晚近的研究顯示，這個印象並不正確，因為如果從另一種觀點來看，我們會發現，卡爾納普一樣可以是一個「約定論者」。的確，重新檢視一些卡爾納普當年的作品，我們感到必須承認，他對相關科學觀點所採的立場，確實處於「基礎論」與「約定論」之間。我們在這篇論文中企圖論證，透過研討當年在「維也納學派」中所進行的討論，尤其是介於卡爾納普、石里克與紐拉特之間的辯論，我們始能理解卡爾納普的「搖擺立場」。我們期待能夠清楚地說明，卡爾納普起初採「基礎論」立場，而後卻在紐拉特的影響之下，轉向「約定論」的立場。透過這個論證，我們想要提出如下兩點結論：一、沒有任何「共同立場」足以代

表當年在「維也納學派」所進行的討論；二、在受到紐拉特的影響之下，卡爾納普的立場中發展出一種「寬容的倫理態度」。

**關鍵字：**基礎論、約定論、卡爾納普、石里克、紐拉特

