Christian Damböck

Rudolf Carnap and Wilhelm Dilthey: "German" Empiricism in the *Aufbau*[1]

1. Introduction

Rudolf Carnap's formative years as a philosopher were his time in Jena (until 1919) where he studied mathematics, physics, and philosophy, among others, with Gottlob Frege, the neo-Kantian Bruno Bauch, and Herman Nohl, a pupil of Wilhelm Dilthey.[2] Whereas both the influence of Frege and of the neo-Kantians is quite well known,[3] the importance of the Dilthey school for Carnap's intellectual development was recently highlighted by scholars, such as Gottfried Gabriel and Hans-Joachim Dahms.[4] Although Carnap himself was interested mainly in the problems of logic and the philosophy of the natural sciences, the community in which he worked until he went to Vienna in 1926 was neither a community of neo-Kantian philosophers nor of logicians or philosophers of the natural sciences but a community of members of the Dilthey school that were interested in history of philosophy (Herman Nohl, Carnap's philosophy teacher in Jena, was concerned with the publication of a huge volume on the history of nineteenth Century philosophy),[5] pedagogic (this also is the case for Herman Nohl and Carnap's

1 I am grateful to A.W. Carus, Michael Friedman, Alan Richardson, and Tom Ricketts, for comments on the talk at the Carnap conference on which this paper is based, to Hans-Joachim Dahms, Richard Dawid, Christoph Limbeck-Lilienau, Thomas Mormann, and Matthias Neuber, for comments on different versions of this paper, and to the editor of this volume Richard Creath and the anonymous referees for very helpful suggestions.

2 For biographical information on the early Carnap, see his autobiography Carnap (1963, sections 1 and 2) and the (much longer) unpublished first version of this article in the Young Research Library, University of California at Los Angeles, Special Collections Department, Manuscript Collection No. 1029, Rudolf Carnap Papers, Box 2, CM3: M-A3, M-A4 and M-A5. Cf. also Carus (2007, ch. 1-7), Mormann (2000, ch. 1-4), Awodey & Klein (2004), and Flitner (1986, 118-128, 239-245, 272-276, 404-405).

3 Cf. Carnap (1963, section 1), Richardson (1998, ch. 4-6), and Friedman (1999, ch. 5 and 6)

4 Cf. Gabriel (2004) and Dahms (2004, 2011)

5 Nohl worked around 1910 (together with Max Frischeisen-Köhler) on the volume of Ueberweg's history of philosophy that was concerned with 19th century philosophy, but time reasons and the war forced him to give up that highly ambitious project. Cf. Flitner (1986, 119). The volume was later published in two parts as Oesterreich (1923 and 1928). Interestingly, Carnap had an annotated copy of the whole five volume set of Ueberweg's history of philosophy, including the two Oesterreich volumes, in his

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lifelong friend, Wilhelm Flitner),[6] aesthetics (Franz Roh, also a lifelong friend of Carnap, was one of the intellectual promoters of "neue Sachlichkeit"),[7] and sociology (Hans Freyer).[8] Carnap and his friends were all members of the so-called Sera-circle, a group of young people that met frequently in Jena and, between 1919 and 1926, also in Carnap's home in Buchenbach near Freiburg.[9] The first version of the *Aufbau* was written in close connection with this group of young people that were interested in a reform of the whole society, including arts, politics, sciences, and everyday life. In Carnap's Werkstatt in Buchenbach, the *Aufbau* and at least two more manifestos of a more or less philosophical nature were written: Franz Roh's "Nach-Expressionismus" and Wilhelm Flitner's "Laienbildung."[10] Given these historical facts, we must conclude that the *Aufbau* is the product of an intellectual enterprise that developed in close connection with the Dilthey school, but in which Frege and the neo-Kantians seem to have played only a small role.

Until recent times, the *Aufbau* is seen almost exclusively as a philosophical book that was influenced by Frege and Russell on the one hand and by the neo-Kantians on the other. Dilthey appears in that picture at best as an astonishing foreign substance that was removed by Carnap himself, as soon as he came under the influence of the Vienna Circle (and Otto Neurath in particular). This interpretation is supported by the fact that we can find only few mentions of Dilthey and Freyer in the *Aufbau*[11] (and no mentioning at all of Nohl and Roh) and that indeed the role of *Geisteswissenschaften* in the context of the constitutional system was played down by Carnap himself because in the systematic part of his book[12] he exclusively deals with the example of visual experience and mentions the rest of the constitutional system only in the context of some cursory remarks.[13] Moreover,

private library: see Archives of Scientific Philosophy, Hillman Library, University of Pittsburgh, Carnap Papers, Box 111, file 125-129 (henceforth, I quote the Pittsburgh-Nachlass in the format RC 111-125). – Nohl had published only few philosophical writings, but cf. his excellent Nohl (1935).

6 Cf. Flitner (1986, 120)

7 Cf. Dahms (2004)

8 Unlike Nohl, Roh and Flitner, Freyer was deeply involved with national socialism. This seems to be the reason why Carnap's friendship with him ended up abruptly around 1933. Nevertheless, there is an obvious influence of Freyer's cultural philosophy, as developed in Freyer (1928) on the early Carnap.

9 Cf. the unpublished manuscript of Carnap's autobiography (see footnote 1), B29-B36 and Flitner (1986, 140-171 and 272-276).

10 See Flitner (1921) and Roh (1925). Cf. Flitner (1986, 272ff). It seems likely that even Freyer (1928) is a book that was written under the influence of discussions in Carnap's Werkstatt in Buchenbach.

11 See Carnap (1998 [1928], §§ 12, 19, 23, 56). Henceforth, I quote the *Aufbau* by the paragraphs and without mention of "Carnap (1998 [1928])." The translation of Rolf A. George is modified in one respect: I use the term 'constitutional' instead of 'constructional.'

12 Cf. §§ 108-122

13 Cf. §§ 123-156

because Carnap in the *Aufbau* does not even mention history and sociology of science as something important for the study of constitutional systems, the most plausible interpretation of this book seems to take it as a peace of a purely formalist philosophy of the natural sciences with no connection to history and sociology of science and without any substantial connection to the *Geisteswissenschaften*.

However, a few things should be noted. First, it was Carnap's opinion, at least in 1928, that there must be some sort of *division of labor* in philosophy, between people like him that are concerned with logic, mathematics, and the natural sciences, and others (i.e., people like Neurath and, one may add, even Dilthey, Nohl, Freyer, etc.) that are concerned with the sociological, historical, and psychological background of the sciences. In a letter to Neurath from 7 October 1928, Carnap wrote:

> […] a logic, a method of concept formation must be constructed which takes account of the fact that we are always presented with a mixture of crystals and dirt, which tells us therefore what demands can be imposed on scientific concepts and statements, as long as the 'ideal language' is not available. And second […] it would be important to concern oneself with problems in history and sociology. Of course, these two things hang together since in sociology there's more dirt than in physics. I have now seriously resolved to make a start on the first task; i.e., not immediately by way of writing but of course only by thinking [about it]; I already have a few vague ideas. As to the second, I will concern myself more than so far with the sociological problems, but more out of a human interest, thus as a layperson; to get beyond that stage I cannot expect. RC 029-19-01[14]

On that basis, one may guess that sociology and history of science was much more important for Carnap than the formal character of his philosophical theories suggests, which seems to be supported (at least partly) by the fact that the *Aufbau* was presented explicitly as *a combination* of modern logic with the purely empirical task of "analysis of reality."[15] Second, Carnap made some (significant) changes to the original manuscript of the *Aufbau* (from 1926) on the basis of criticism from people like Neurath, Schlick, and Reichenbach so that the *Aufbau*, in its published version from 1928, must be seen as the product of *both* the intellectual scenario of the Jena Circle *and* the Vienna Circle. This, in particular, may have caused a tendency to underestimate some of the original influences on that work.[16] Third, it was Carnap himself who conceded at the end of his life that the Dilthey school may have been much more important for his philosophical development than it seemed to him for a long time. In a letter to Wilhelm and Elisabeth Flitner from 11

14 Translation quoted from Uebel (2007, 107).

15 Cf. § 3

16 Cf. in particular Carnap's correspondence with Schlick RC 029-27ff. The best way to support that thesis would be a comparison between the versions from 1926 and 1928. Unfortunately, the manuscript from 1926 seems to be lost. See also Friedman (1999, 146 n.52).

December 1968, Carnap wrote, with reference to Günter Patzig's commentaries to his "Overcoming of Metaphysics":

> Patzig says there that my view that metaphysics has no cognitive content but is only an expression of *Lebensgefühl* is evidently influenced strongly by Dilthey. I told him it seemed doubtful to me, for as far as I can remember I have never myself read anything by Dilthey, but only heard occasional references to him by Nohl. A short time ago my friend Arne Naess, from Oslo in Norway, was here and brought me his new book *Four Philosophers*. One of the four parts of the book is about me (the others are about Wittgenstein, Heidegger, and Sartre), I'm in rather strange company there.
>
> Naess has quotes there of Nohl's and of Dilthey's, and from them I saw with amazement how strong Dilthey's influence on me in this particular respect, via Nohl, really was. (The whole difference lies, of course, in the fact that Dilthey and Nohl didn't draw the conclusion from this insight that metaphysics doesn't matter.) Gabriel (2004, 16-17)

Given these historical insights, the present paper shall suggest in a rather systematic way that the Frege-Russell-aspects and the neo-Kantian aspects are *not sufficient* for a proper understanding of the intellectual background of the *Aufbau*. There also is a profound Diltheyian aspect in the *Aufbau* that diverges from both Russell's sense-data empiricism and the neo-Kantian accounts of the Marburg and the southwest German school. The constitutional system of the *Aufbau* can be seen as a proposal in the tradition of an idiosyncratic version of *empiricism* that was developed in the nineteenth Century by Dilthey and other German philosophers to find *empirical* access to the *mental objects* ("geistige Gegenstände") that Kant and Hegel had attempted to analyze in a purely aprioristic way. The former accounts, such as Carnap's proposal, are somewhat *intermediate* between classical empiricism and the accounts of the (neo-)Kantian tradition. This certainly does not necessarily lead to a *rejection* of the neo-Kantian readings of the *Aufbau* and a rejection of those interpretations that mainly point out the influences of Frege and Russell. What I mainly want to argue for in the present paper is simply that the intellectual background of the *Aufbau* is *even broader* than it is suggested by those classical interpretations.

2. Dilthey's "German" Empiricism

Wilhelm Dilthey (1833–1911)[17] was one of the key figures of philosophy in Germany after Hegel and the so-called breakdown of German idealism and before the

17 For a more detailed account of Dilthey's epistemology, see my Damböck (under review). Cf. also Makkreel (2010) and Lessing (1984) and the editorial introductions to the relevant volumes (especially I, V, XIX, and XII) of Dilthey (1914-2006). Volumes I and XIX of the *Gesammelte Schriften* are quoted here from the translation of Dilthey (1989); other translations are my own and are accompanied by the German original in a footnote.

development of the crucial currents of twentieth century philosophy, such as neo-Kantianism, fundamental ontology, phenomenology, and critical theory. Dilthey shared with philosophers, such as Eduard Beneke, Jakob Friedrich Fries, Adolf Trendelenburg, Friedrich Ueberweg, Moritz Lazarus, and Heymann Steinthal,[18] the attitude of a rejection of Hegel's "pure logic". Like those philosophers, Dilthey attempted a reconciliation of empiricism and positivism with the characteristic feature of using empiricism as a method to make accessible the classic field of enquiry of Kant's transcendental philosophy and Hegel's pure logic, in an *a posteriori* way. An important reference point of all these approaches was John Stuart Mill's logic which also tried to develop such an *empirical* foundation of logic, partly in accordance and partly in disagreement with Auguste Comte.[19] However, Dilthey and his Berlin contemporaries did not arrive at a strict empiricism à la Mill and Comte. They shared the principal programmatic stance of Comte and Mill but rejected their concrete empirical strategies. Whereas Comte and Mill attempted to find a foundation for sociology and the human sciences in the natural sciences,[20] Dilthey argued that it is impossible to understand the abstract notions of these (and other) sciences on a basis that stems from natural science exclusively. Believing that they could access the abstract background of reasoning *on a meta level*, using only natural sciences, Comte and Mill turned out to be no less *metaphysical* thinkers than Kant and Hegel: whereas the latter tried to find access to the abstract categories of reasoning in a transcendental or pure logic, respectively, and thus in a way that has no connection at all to the *empirical process of reasoning*, Comte and Mill also did not study the empirical process of reasoning but only the physical surrogate of that process. Thus Comte, Mill, Kant, and Hegel were all *metaphysicians* for Dilthey:

> Previous epistemology – Kant's as well as that of the empiricists – has explained experience and cognition in terms of facts that are merely representational. No real blood flows in the veins of the knowing subject constructed by Locke, Hume, and Kant, but rather the diluted extract of reason as a mere activity of thought. Dilthey (1989, 50)

Both the a priori approach of transcendental and pure logic *and* the a posteriori approach of physiology and associative psychology attempted to analyze "mental objects" ("geistige Gegenstände") merely on a meta-level (of pure logic or natural

18 On academic philosophy in nineteenth century Germany cf. Köhnke (1986), Schnädelbach (1984), and Oesterreich (1923).

19 Cf. Mill (1976 [1843]). See also Köhnke (1986, 81) who points out that philosophers like Beneke and Trendelenburg developed their empiricist views more or less independently from the British and French empiricist tradition: "In Germany there was no need for a Comte or Mill, in order to develop a notion of positive philosophy" ("In Deutschland bedurfte es keines Comte oder Mill, einen Begriff von positiver Philosophie zu fassen."). However, at least in the case of Dilthey, there is an obvious direct influence of the British and French empiricist tradition.

20 Cf. Mill (1976 [1843], book VI, especially ch. 4)

science) but did not study the empirical process of reasoning as such. However, the concrete structure of mental objects is accessible only if we analyze them *in the context of their development.*

This consideration led Dilthey to a rejection of the ahistorical methods of Kant and Hegel and also led him to a critique of the historical and psychological methods of Comte, Mill, and Buckle.[21] Dilthey's approach led to a completely new understanding of the term "empirical" and to the idea of a new method in psychology that shall allow us to systematize that new empirical world (as something in between the a priori world of German Idealism and the a posteriori world of the natural sciences).[22] Thus, the "German" empiricism of philosophers, such as Dilthey, Trendelenburg, and Ueberweg, is a quite special form of empiricism because it is based on an empirical version of something (i.e., the a priori world of transcendental and pure logic) that, for a full-fledged (French or British) empiricist, *does not exist at all*. In other words: the charm of "German" empiricism lies in its hybrid nature that makes it both very German and very un-German at the same time. (This is the reason why I always put the term "German" within quotation marks here.)

The tactic of "German" empiricism that we may call an "empirization of the transcendental" was generally restricted to those parts of the sciences that Dilthey called *Geisteswissenschaften*: history, psychology, sociology, and those parts of philosophy that remain after the overcoming of metaphysics. Unlike Kant who would have claimed his transcendental logic to be a method for a deductive treatment of the natural sciences *in particular*, Dilthey firstly restricted his philosophical method to those sciences that deal neither with pure formal constructions (like in mathematics) nor with spatiotemporal facts (like in physics) but with "facts of consciousness" ("Tatsachen des Bewusstseins"). Mathematics and the natural sciences are both based on assumptions a priori plus (in the case of the natural sciences) an empirical basis of spatiotemporal facts. The structure of those sciences is strictly *objective* (in the sense of being not influenced by the scientific *subject*). According to Dilthey, philosophy has no access at all to that objective side of the natural sciences. Nevertheless, even in philosophy and in the *Geisteswissenschaften,* the assumptions of the natural sciences may come into focus because as Dilthey points out, the historical perspective of the *Geisteswissenschaften* provides us with a technique that allows us to turn the assumptions of *all* "particular sciences" ("Einzelwissenschaften") *into the empirical*, namely insofar as they are taken as facts of consciousness, implying that, in contrast to mathematics and the natural sciences, philosophy and the *Geisteswissenschaften* and, in that context, even the "natural sciences" as taken from a historical point of view are in no respect based on assumptions a priori but are *purely* empirical things:

21 Cf. Dilthey (1989, 48ff)

22 Cf. Dilthey's paper from 1894 "Ideas for a Descriptive and Analytic Psychology" Dilthey (2010, ch. 5), but also his writings from the Nachlass in Dilthey (1914-2006, vols. XIX and XII).

> What appears from the standpoint of a particular science to be an ultimate truth or an axiom is given with evidence as a fact of consciousness for this comprehensive empirical science [namely philosophy and the *Geisteswissenschaften*, C.D.]. This fact enters the domain of the analysis of consciousness possibly to be clarified in this context, or possibly to be subjected to further psychological analysis. If I regard an axiom from the point of view of the evidence that other propositions, derivative from it, borrow from it, as the moon borrows its light from the sun, then this axiom is for me an ultimate truth. This is the standpoint in which the individual sciences ground their axioms, and from which they develop their systems. If I regard this evidence, however, in the context in which it is originally given, I assume the standpoint of the general experiential science [again, philosophy and the *Geisteswissenschaften*, C.D.] which has the nexus of facts of consciousness for its object. Dilthey (1989, 270-271)

This establishment of a *second point of view* that transforms the assumptions of the sciences into external objects of scientific study is a turn in epistemology which is characteristic also for neo-Kantian philosophy. Both the neo-Kantians of the southwest German and of the Marburg school turn Kant's absolute realm of the synthetic a priori into a relativized realm of structures that are historically relative (in the case of the Marburg school) or simply a question of stipulation of values (in the case of the southwest German school).[23] However, neo-Kantian philosophers never claim that *the science* that allows us to study that relativized realm of a priori structures is a *positive science* in Dilthey's sense (e.g., history, sociology, or psychology). On the contrary, they demand for that realm to be an exclusive business for philosophy which ultimately must provide us with some sort of an a priori method that allows us to access that realm of the relativized a priori or of values, respectively. *The content* of philosophy is the same for both Dilthey and the neo-Kantians, but *the method* to make that content accessible is quite different. For the neo-Kantians, that method is still an aprioristic one; for Dilthey, the method is empirical. Because philosophy, for Dilthey, deals only with facts of consciousness, it turns into an empirical ("positive") science:

> When Kant undertook a pure analysis of the subject and its scientific knowledge with the intention of solving the problem definitely, he divorced his philosophical analysis from the positive human sciences.
>
> Once one recognizes that these problems are connected with those of comparative grammar, mythology, and cultural history, then the task of philosophy cannot be distinguished from that of the positive science of history either by its method or by its means, or even fully by its object. The barrier between philosophy and the positive sciences collapses, just as it could not be upheld between philosophy and the principles of natural science. It derives from the unavoidable narrowness of human nature, which favors one sort of means

23 The main representatives of the Marburg school were Hermann Cohen, Paul Natorp, and Ernst Cassirer; the southwest German school was mainly represented by Wilhelm Windelband and Heinrich Rickert. For an overview of the two schools cf. Holzhey (2004).

and problems over another, but need no longer be seen to reside in any difference regarding [philosophy's] overall object, method, or means.

This suggests a solution to the problem of the unlimited progress of positive knowledge: its limits are only those of the epoch in which we live; there is no absolute philosophy. Dilthey (1989, 279)

While even Cassirer arrived in his "philosophy of symbolic forms" at a notion of philosophy that makes it indistinguishable from the "positive science of history" by its object but demands an exclusive philosophical *method* with no connection to the "positive sciences" of history and/or psychology (Cassirer turns the "Critique of pure reason" into a "Critique of culture,"[24] a culture which is *historically changeable* and thus a posteriori but which is *accessible* only in an aprioristic way); for Dilthey, the whole business of philosophy turns into a business of the "positive sciences" of history and psychology: he turns the "Critique of pure reason" into a "Critique of historical reason."[25]

It is important to note that *both* Dilthey *and* the neo-Kantians developed a notion of philosophy that is *not* completely relativistic. A complete relativism would *only* be given in the context of a *naturalization* of the mental objects or facts of consciousness that makes them an exclusive business of the natural sciences. This is the case in Comte's positivism, Mill's empiricism, and in the materialism of German philosophers, such as Büchner and Moleschott.[26] In this respect, Dilthey and the neo-Kantians share the attitude of F. A. Lange's "History of Materialism"[27] that points out (1) that philosophy has to be naturalized as far as possible (because there is no absolute philosophy), but (2) that a *full* naturalization of philosophy is impossible. *The methods* of philosophy are not identical with the methods of the natural sciences. For Lange, the neo-Kantians, and even Dilthey all have the same reason for distinguishing philosophy from the natural sciences: they are all *Kantians in the broadest sense* (stated in section 4). However, whereas the neo-Kantians search for a method that remains to be exclusively philosophical (an attitude that they share with Husserl and his "transcendental phenomenology"), Dilthey's philosophical method is an introspection-based "descriptive psychology" (plus the history and sociology of science that can be established on the basis of that method). The neo-Kantians (and Husserl) try to carry on the old tradition of a *philosophical* (transcendental, pure or epistemological) *logic* in the new age of relativized philosophy, whereas Dilthey tries to find *a replacement* for that method in a nonmaterialistic "descriptive psychology" and thus *inside* the realm of the "positive sciences."

24 Cassirer (1997 [1923], 11)

25 Dilthey (1989, 165)

26 Dilthey is certain that all those kinds of materialism are inacceptable to him. See, for example, Dilthey (1914-2006, XXII, 140ff).

27 Lange (1866)

3. Dilthey's Nonreductionism

Another convergence between Dilthey and the empiricist tradition is found in his rejection of psycho-physical *dualism*. Like Comte and Mill, Dilthey rejects the idea of mental objects that exist in isolation from their physiological representation. On the other hand, Dilthey also rejects *reductionism* which is a crucial aspect of all classical versions of empiricism and positivism. According to Dilthey, the mind is *hierarchically* organized. There are some "lower" regions in the mind – everything that is directly connected with sense impressions – that are not only *reducible* to physical phenomena but rather *identical* with them. On the other hand, there are "higher" regions – everything that is the product of abstract reasoning and only indirectly connected with sense impressions. Those higher regions are *independent* of the basic physical aspects of the mind (because they are products of the logical process of reasoning and not products of the physical process of perception). They are also dependent on the physical world: the higher level objects of the mind are not only represented as physical objects (in the brain) but results of a causal process which is deeply connected to the lower physical parts of the mind:

> [The] higher phenomena of consciousness […] are doubtlessly products of the lower ones. The lower ones build their basis. But they are not only composed of compounds that can be completely derived from the elementary ones. The notions of development, evolution, unfolding express correctly the mode of causality that is at work here. Dilthey (1914–2006, XXII, 12)[28]

Dilthey's hierarchical conception of the mind also implies a rejection of so-called psycho-physical *parallelism*, that is, the claim that (1) every mental state can be univocally identified with a physical state and (2) causality exists only on the mental and physical levels but never between these two levels. Although Dilthey shares the first part of that claim with the parallelists, his hierarchical conception implies a rejection of the second part, simply because he takes the higher level parts of the mind *as the results of a causal process* that starts with purely physical states. If it is true that the higher level parts of the mind "develop, evolve, unfold" from the lower level (and purely physical) parts, then this would imply that there are causal relations between the physical and the mental levels. Moreover, these relations are most important because, according to Dilthey, only a *historical* reconstruction of the development of the mind (including psychological, biological, and sociological aspects) allows us to understand what kind of things high level mental objects are. Because parallelists reject the existence of causal relations between

28 „[Die] höheren Bewußtseinsphänomene […] gehen ohne Zweifel aus den niederen hervor. Die niederen bilden ihre Grundlage. Aber sie sind durchaus nicht bloß zusammengesetzt von Verbindungen, die aus den elementaren gänzlich abgeleitet werden können. Die Ausdrücke Entwicklung, Evolution, Entfaltung sprechen zutreffend die Art von Kausalität aus, welche hier waltet".

the physical and the mental, they necessarily arrive at a rather artificial and static conception of the mind. Thus, Dilthey accepts a full-fledged parallelism only on the level of low level objects of the mind. However, the more complex and abstract aspects of the mind are something that must be studied in a rather holistic way, as results of the "psychophysical life unit," including both physical and mental factors:

> Mental facts comprise the uppermost limit of natural facts, and the latter the underlying conditions of human life. Because the realm of persons, including human society and history, is the highest phenomenon of the empirical world, knowledge of it must at countless points be based on the system of presuppositions which accounts for its development within the whole of nature. Dilthey (1989, 69)

Dilthey's position in the context of the psycho-physical problem is a version of *weak parallelism* that shares part (1) of the full-fledged parallelism previously described but rejects part (2) of it. Dilthey specified his position on the basis of the following "Three fundamental laws concerning the universal connection between the physical and the mental":

> 1. The first recognizable lawful relation between material and mental facts is that of the dependence of mental activities, directly from the brain and the nervous system, indirectly from the physical processes proceeding in the body, therefore even further mediated from the whole physical environment in which man is living. […] There is no mental activity that is not determined by the condition of the brain and the nervous system. […]
>
> 2. The overview of the organic world, then, delivers us a second comprehensive lawful relation. We will call this the correspondence or the parallelism between the physical and the mental. The notion psychophysical parallelism became ambiguous. As correspondence I understand the fact that in the whole organic world a particular condition, structure and differentiation of the nervous system is connected with a particular condition, structure and differentiation of the mental activities. […]
>
> 3. […] Inside of the mental world there is a process of differentiation of the mental life; in analogy with the physical differentiation of the organism, in the animal kingdom there always developed a higher level of mental life on the basis of a lower one. […]
>
> [in the following §11 this third law is further clarified:] The mental processes appeared to us to be in parallel with the physical. Equally true and important, however, is the awareness of the incommensurability of the two regions. […] [O]n closer inspection, […] how mental entities are interconnected is totally different from how we determine physical phenomena through the medium of thought. Dilthey (1914-2006, XXII, 148-150)[29]

29 „1. Das erste erkennbare allgemeine gesetzliche Verhältnis zwischen den materiellen und den psychischen Vorgängen ist das der Abhängigkeit psychischer Vorgänge direkt von dem Gehirn- und Nervensystem, mittelbar von den im Körper verlaufenden physischen Prozessen, demnach auch weiter vermittelt von dem ganzen physischen Milieu in welchem der Mensch lebt. […] Es gibt keine psychische Leistung, welche nicht von der Verfassung des Gehirns und Nervensystems bedingt wäre. […]
2. Der Überblick über die organische Welt liefert uns alsdann ein zweites umfassendes gesetzliches Verhältnis. Wir wollen dieses als Korrespondenz oder Parallelismus des

In these fundamental laws, Dilthey's hierarchical conception of the psychophysical world can be found. The mind is nothing independent but is deeply determined by the physical milieu in which it develops. In the case of lower animals, such as protozoa or frogs, we have a de facto *identity* between the physical and the mental, as well as in the case of simple perceptions in higher animals and human beings. However, in the course of evolution, the latter develop better and better mental abilities whose independence increases insofar as the possibility of a complete analysis on the exclusive basis of physiological analysis decreases. This does not change the fact that even the mental life of a higher animal or a human being is deeply dependent on its physical milieu (fundamental law 1). Psychophysical parallelism (fundamental law 2) implies that every mental state must have a physical correlate or a suitable functional explanation in the field of physiology. Nevertheless, the mental and the physical world are not *identical*; they rather build two *incommensurable* epistemic fields (fundamental law 3).

Dilthey's conception of the psychophysical world is *both* a reductionist *and* a nonreductionist conception. Dilthey shares with the reductionist conceptions of the strong parallelists and the materialists the attitude to take an independent world of mental states as an absurdity. However, at the same time, he holds that the mental world is not only *a product* of the evolution of the physical world, but as such a product it forms a new kind of supervening "entities" being incommensurable with the purely physical objects of the brain and the nervous system. For Dilthey, both dualism and strong parallelism fail to provide adequate theories for that situation. His alternative is a weak parallelism that allows some sort of causality between the mental and the physical, a theory that may be seen as a compromise between strong parallelism and dualism. The ultimate reason why Dilthey takes these nonreductionist elements of his theory as indispensable is obviously his rejection of the idea of human sciences are just a special form of natural sciences (as it was defended by Hume, Comte, and Mill). Thus, Dilthey's conception of human sciences ("Geisteswissenschaften") as something *relatively independent* of the natural sciences, may be seen as a compromise between the reductionist

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Physischen und Psychischen bezeichnen. Der Ausdruck psychophysischer Parallelismus ist vieldeutig geworden. Ich verstehe unter Korrespondenz die Tatsache, daß in der gesamten organischen Welt eine bestimmte Beschaffenheit, Struktur und Differenzierung des Nervensystems mit einer bestimmten Beschaffenheit, Struktur und Differenzierung der seelischen Leistungen verbunden ist. […]

3. […] Es gibt innerhalb der psychischen Welt einen Vorgang der Differenzierung des psychischen Lebens; analog der physischen Differenzierung des Organismus hat sich in der Tierwelt stets auf der Grundlage einer niederen Stufe des psychischen Lebens eine höhere entwickelt. […]

[§11 …] Die seelischen Vorgänge zeigten sich uns den körperlichen parallel. Ebenso wahr und wichtig aber ist die Erkenntnis von der Unvergleichbarkeit beider Gebiete. […] [B]ei genauerem Zusehen […] zeigt sich […] die gänzliche Verschiedenheit der Art und Weise, wie Psychisches untereinander verbunden ist, und der Art, wie wir physische Erscheinungen durch Denkmittel bestimmen."

positions of Comte, Mill, and Hume and the (extremely) nonreductionist conceptions of the rationalist and idealist tradition of Leibniz, Kant, and Hegel.

4. Dilthey in a broader historical context

Before we turn to the *Aufbau,* we give a sketch of the broad historical background of the philosophy of the *Aufbau*, as it starts with rationalism, empiricism, and Kantianism (cf. the table below). In pre-Kantian philosophy, we have two fundamentally different notions of the world of concepts: the rather platonist conception of *rationalism* that situates the world of concepts in a transcendent realm of ideas and the *empiricist* conception that tries to reconstruct concepts as mere causal *results* of the physical world. In both cases, we have conceptions here that imply that we are able to understand the world of concepts without any direct reference to our own reasoning. Reasoning is relevant here only insofar as it *distorts* the world of concepts that is completely externally given, either in a platonic or in a purely physical realm.

the world of concepts is	rationalism	empiricism	Kant	Hegel	Dilthey	Marburg neo-Kantianism
nonphysically transcendent	X					
transcendental			X			
historically variable				X	X	X
actually convergent				X		
dynamically-transcendental						X
nonphysically empirical					X	
physically determined		X				

"German" empiricism

Kantianism in the broadest sense

In sharp contrast to these conceptions, there is a whole family of conceptions that hold for the world of concepts being something that can be understood *only* by means of a study of reasoning. We may call these conceptions *Kantian in the broadest sense* because it was Kant who famously formulated, in his *Critique of Pure Reason*, the doctrine of so-called *Copernican turn* that switches the focus of philosophy from the external world to the reasoning subject.[30] I will mention four examples for Kantianism in the broadest sense here. First, Kant's own position that is characterized by its *static* character: concepts, according to Kant, do not have a history; thus, every person must arrive at the end at the same conceptual world.

30 See Kant (1998, BXVIf).

The other three conceptions reject that static character of Kant's transcendental philosophy. Insofar, they all share the attitude of Hegel's absolute idealism, according to which the world of concepts is historically dynamical. The remaining two conceptions, however, disagree with Hegel (and Kant) in that they both claim that there is no absolute world of concepts at all, neither a static world, in Kant's original sense, nor a dynamic world that leads us with necessity to a particular result, as it was stated by Hegel. We could say that the two remaining positions that we consider here (namely Dilthey and the Marburg school of neo-Kantianism) diverge from all the other positions insofar as they are instances of *conceptual relativism*: the world of concepts is something that is inevitably *historically relative*. Every historical situation (and at the end even each particular person) has its own world of concepts that reflects the respective status of arts and sciences and the external world and the respective psychological status of the persons that develop that world of concepts. Especially, the respective status of the sciences, unlike in the concepts of Kant and Hegel, is nothing that can be optimized or even proved to be the optimum by means of some internal conceptual argumentation. The only thing that philosophy and epistemology can do here is to point out the respective status of the world of concepts and to illustrate that world in a rather systematic way. Such a *rational reconstruction* of the sciences (and even of other cultural phenomena) may have a number of virtues and functions. It may allow us to put them into a broader historical context and to study the logical relations between particular parts of that world (e.g., to find inconsistencies or to point out interdisciplinary connections). Thus, *the aim* of the study of the world of concepts is not particularly different, in neo-Kantianism and in the Dilthey school. The attitude that epistemology merely can look at science and culture *from the outside* is something that is shared by all versions of neo-Kantianism, the Dilthey school (and by Carnap and the philosophers of the Vienna circle).

Given these preparations, the difference between the Marburg school of neo-Kantianism and Dilthey seems to be only the following, at a first glance, rather inconspicuous thing. Dilthey's opinion is that conceptual structures are something that must be present to the philosopher *in a purely empirical way* (i.e., in the way of his idiosyncratic "German" version of a nonmaterialist empiricism as it was pointed out in section 2). Therefore, the *empirical basis* must provide the epistemologist with the conceptual structures *as something completely objective*. What remains to do for her is simply to put these structures into some (historical, sociological, psychological, or even formal) context and to reconstruct them by means of these external aspects. In contrast to this, for the Marburg school in general and for Ernst Cassirer in particular, the conceptual structure, although present in the empirical material that science provides to the philosopher, is something that has to be firstly reconsidered by the philosopher to sift out something: the objective core, the very structure of that concept, or the like. Whereas for Dilthey, *objectivity* is something completely deflationary – the concept is objective simply because

it is reasoned by a particular person or by a group of persons, and this very fact makes it an object – for the neo-Kantians, there is a notion of objectivity at work that is much more philosophical (and, in a sense, quite *platonistic*): for the (neo-) Kantian, *it is only philosophy* that enables us to find out *in what sense a concept is objective*. The neo-Kantian of the Marburg school is thus concerned with the never ending process of sifting out the objective core of a concept, a task that is quite similar to the task of the neo-Kantian of the southwest German school who wants to determine *the value* of scientific concepts. *In both cases,* there is something missing in the concept because the concept is provided to the philosopher by the sciences, something that can be only sifted out in the context of some strictly aprioristic work in the philosophical laboratory.

For Dilthey, in contrast to this, it is simply not true that there is an objective core or a hidden value of the concept that *philosophy* has to sift out from the conceptual material that sciences provide to it. The world of concepts, of abstract content is *a proper part of the empirical world*. Thus, the task of sifting out the objective core of the conceptual material cannot be a philosophical task because the questions of what the objective content of an object may be or in what sense a particular concept is true or properly chosen or useful in a particular context are all questions that can be answered *only by the sciences themselves*. What philosophy can do here is only to reconstruct and to systematize the motivations and conventional decisions that the sciences provide to it. To conclude, what the neo-Kantians try to handle in a (more or less relativized and slimmed-down) *transcendental realm* is to be handled, according to Dilthey, in an *empirical realm* of history, psychology, and sociology of science.

5. "German" Empiricism in the *Aufbau*

The constitutional system of the *Aufbau* is an all-encompassing system that derives *every* concept from a limited range of basic concepts. According to Carnap, there are at least two possible versions of such basic concepts: the physicalistic basis of concepts that refer to observable objects and the phenomenalistic basis of concepts that refer to recollections of similarities between elementary experiences.[31] Carnap chose the latter because of its advantage that it describes the development of concepts exactly that way they actually develop in the human mind (epistemic primacy).[32] According to Carnap, *the structure* of any concept of a constitutional system thus developed must be *already given* as part of the structure that is specified by a fundamental relation Er of recollected similarities between the elementary experiences of a particular person. What logic contributes here

31 See §§ 59 and 60. Carnap mentions even a third form of constitutional system here, namely one that has a heteropsychological ("fremdpsychische") basis.

32 See § 54

is simply to *reconstruct* the formal substance of the highly complex relation Er in such a way that the hierarchical character of that structure becomes visible. *Rational reconstruction* ("rationale Nachkonstruktion") is nothing else than the systematic study of the order theoretic properties of a complex formal structure of that kind. Therefore, in particular, *the structure* or *the objective content* or even *the value* of the structure that is studied in rational reconstruction is nothing that *results* from the process of rational reconstruction but *is taken as its starting point.* This indicates a fundamental difference between Carnap's *Aufbau* program and (the Marburg school of) neo-Kantianism and a particular convergence between Carnap's program and the "German" empiricism of the Dilthey school.

In the *Aufbau,* Carnap explicitly criticized the idea of Marburg school of neo-Kantianism that there is some objective core of the concepts that the philosopher has to sift out from the conceptual material that science provides to her:

> According to the conception of the *Marburg School* […] the object is the eternal X, its determination is an incompletable task. In opposition to this it is to be noted that finitely many determinations suffice for the constitution of the object – and thus for its univocal description among the objects in general. Once such a description is set up the object is no longer an X, but rather something univocally determined – whose complete description then certainly still remains an incompletable task. (§ 179)

This statement does not imply that Carnap rejected (neo-)Kantianism *in every respect*. It is true that the project of a purely structural theory of knowledge converges with the Kantian tradition *in the broadest sense* but diverges from classical empiricism insofar as the world of concepts for Carnap is something that cannot be reduced to mere sense data (and thus to the external world). Beyond that general aspect, however, Michael Friedman, in my opinion, overdoes the neo-Kantian perspective in the *Aufbau* in criticizing Carnap's own account as unable to dissociate itself from the Marburg school of neo-Kantianism.[33] As Friedman describes the constitutional system of the *Aufbau*, the definition of concepts in the context of that system has a *conventionalist* element that is interpreted by him as being something that we do not find in the rough material of Er but something that is added *on a meta-level*, by the persons that build the constitutional system. Because the process of concept formation thus carried out fails to stop because of some failures of the constitutional system of the *Aufbau*[34], Carnap, according to Friedman, also fails to dissociate himself from neo-Kantianism:

33 See Friedman (1999, ch. 6, especially the "postscript").

34 See Friedman (1999, 161): „[…] the assignment of colors (and, more generally, of 'perceptual qualities') is continually and indefinitely revised as we progress through the hierarchy of types. This is because, first, the initial assignment – based on the 'observations' of a single subject – is subsequently revised on the basis of both the reports of other subjects and the scientific regularities discovered in the world of physics; and second, the construction of the world of physics suffers from a precisely parallel ambiguity: the methodological procedure leading (via the 'physico-qualitative coordination') from sensible qualities to numerical physical state-magnitudes also is

> Carnap's construction of the physical world therefore appears never to close off at a definite rank in the hierarchy of types: it is continually revised to infinity. And this means, of course, that the Marburg doctrine of the never completed 'X' turns out to be correct – at least so far as physical (and hence all higher-level) objects are concerned. Whereas autopsychological objects receive actual definitions locating them at definitive type-theoretic ranks (as sets of … sets of elementary experience), this is not and cannot be true for the higher-level objects. It follows, therefore, that Carnap's rejection to the synthetic a priori – according to which all characterizations of the objects of sciences are either definitions (conventional stipulations) or ordinary empirical truths (concerning already-constituted objects) also fails. (Friedman 1999, 161-162)

This analysis is obviously based on a picture of the nature of concept formation that is deeply inspired by the Marburg school in general and Ernst Cassirer in particular. According to that view, the task of philosophy is to show the formal structures of concepts to be *Grenzbegriffe* that converge in some sense to the empirical world.[35] Therefore, one of the main tasks of philosophy is to prove that our formal conceptual structures do really have *objective content* or fit into the empirical world. In that respect, the philosopher has to add something substantial to the concepts as provided to him or her by the sciences: some conventional decisions that can be made only on a philosophical meta-level.

In sharp contrast to this, for Carnap, *the philosopher on the meta-level of constitutional theory makes no conventional decision at all, neither concerning the formal structure nor the propriety of the formal structure of concepts; all conventional decisions we need take place already on the object level, that is, in the real world of the sciences*. The philosophical constructor of constitutional theory *only* reconstructs an order structure that is *completely* given by means of the relation Er of recollected similarities between elementary experiences.

However, if this is the case, then it may well turn out, at the level of constitutional *theory*, that a particular *system* of concepts fails to be a proper system, to be consistent, or to have finitely axiomatizable definitions (because it is circular in a way); it may well turn out even that some essential assumptions of the constitutional *system* (e.g., reductionism) fail. Clearly, such failures (as long as the logic that constitutional theory uses is consistent in itself and allows us to reconstruct every aspect of the empirical source) cannot be failures of constitutional *theory* but have to be failures of the constitutional *system*, that is, of the scientific constructs that build the basis of constitutional theory and that are given in the more abstract regions of the empirical material Er. A neo-Kantian may believe that the scientist provides us only with the rough conceptual material whose very *objective content* or even whose very *formal structure* has to be sifted out by the philosopher. Carnap left no doubt that this is "the task of the special sciences".[36] For philosophy, there remains only (1) the (rather insubstantial) task of metaphysical

continually revised as we progress through the hierarchy."

35 Cf. Cassirer (1994 [1910], 152ff and 292ff)

36 § 21

"essence problems" and (2) the purely formal task of constitutional theory (that was seen by Carnap as his own task). Carnap concludes:

> We have repeatedly pointed out that the formation of the constitutional *system* as a whole is a task of the whole of science ["Gesamtwissenschaft"], while constitutional *theory* is merely engaged in carrying out the appropriate logical investigations. (§ 179, my italics)[37]

Thus, in Carnap's conception, the task for "pure" philosophy is significantly *narrower* than in the neo-Kantian conception of the Marburg school:

	to sift out the objective content of concepts	to formally reconstruct the objective formal structure of concepts
according to the Marburg school of neo-Kantianism	is at least partly a task for philosophy	is a task for philosophy
according to Carnap	is an exclusive task for the sciences	is a task for philosophy

This implies in particular that the failure of the reduction of physical objects to phenomenal objects in the context of the constitutional system of the *Aufbau* is not at all a failure of constitutional *theory* in itself but a failure of the concrete constitutional *system* that is (re)constructed in the context of (part IV of) the *Aufbau*. Whereas the former is an exclusive task for philosophy, the latter is a much more general task, including the work of every particular science. Thus, the failure of reduction of physical objects to autopsychological objects in the *Aufbau* is a failure of the picture that it provides from the sciences and/or a failure of the picture that sciences themselves provide to the author of the *Aufbau*. But (as long as the logic that constitutional theory uses is consistent in itself and allows us to reconstruct every aspect of the empirical source) it cannot be a failure of the principal layout of constitutional *theory*.

If that diagnosis is correct, this would have a further consequence that is absolutely desirable. The neo-Kantian interpretations of the *Aufbau* imply that there is a significant amount of conventional decisions that are not provided on the object level of the particular sciences but have to take place on the meta-level, so to speak, in the philosophical laboratory in which the constructor of the constitutional system does his or her work. This neo-Kantian attitude establishes a particular kind of

37 Rolf A. George translates "Gesamtwissenschaft" as "unified science". However, I think that "Einheitswissenschaft" ("unified science") and "Gesamtwissenschaft" ("the whole of science") are something totally different. In particular, the term "unified science" may suggest here (quite incorrectly) that "Gesamtwissenschaft" is something constructed by philosophy and not by the sciences in themselves.

apriorism that – although relative in its nature – prevents epistemology from adding to its formal story another story that is *empirical* in a much more immediate sense than a "history of sciences" as based on relative apriorism ever can be.[38] The point is that in a "German" empiricist setting, we may analyze the conventional decisions (that are not decisions on the meta-level, in the philosophical laboratory, but decisions on the object level, in the real life of the scientists) *directly* by means of the methods of history, psychology, biology, and sociology. In contrast, in neo-Kantian conceptions, the typical way to study the historical dynamic of theoretical conventions and ideas is a quasi-Kantian conceptual analysis that does not employ the methods of the human sciences. Thus, a more Diltheyian account of a structural theory of knowledge is *complementary* to a naturalist account of the sciences, whereas in the neo-Kantian picture, naturalizations seem to be rather unnecessary additions to something that is a genuine task for the pure reasoning of the philosopher.

I think that it is an important and not sufficiently appreciated aspect of the rejection of neo-Kantianism as we can find it in Carnap's *Aufbau* that it implies exactly such a Diltheyian picture of a structural theory of knowledge that is *complementary* to a naturalistic understanding of knowledge. This picture in general and Carnap's rejection of neo-Kantianism in particular *only* fail (in the sense of Friedman's argumentation) if we take the conventional decisions that lead to the specification of abstract scientific concepts to be something that has to be done on the meta level of constitutional *theory*; however, if those decisions are something that we already find on the object level of the constitutional *system* (and I have argued that this was indeed Carnap's idea), then there is no need at all for a return to (neo-)Kantian ideas because we may replace aprioristic reasoning on the meta-level (as it is demanded by neo-Kantianism) with history and sociology of science on the object level.[39]

This certainly does *not* imply an uncritical commitment to science studies and to the strong program in sociology of science because it is the crucial point of Carnap's account that the core element of rational reconstruction of the sciences is something purely formal *and therefore a priori*.[40] What we learn from Carnap is

38 Cf. Friedman (2001) who points out that even Thomas Kuhn's approach to the history of science in fact was neo-Kantian in the sense just mentioned.

39 Cf. again Carnap's statement in his letter to Neurath as quoted on page 2, above.

40 Cf. the "strong program" in Bloor (1991 [1976], p. 7ff) that seems to totalize the sociological standpoint in such a way that particularly a *sociological purism* is implied that carefully avoids leaving the sociological meta-level. We can find a similar attitude in the "science studies" of Latour & Woolgar (1986 [1979]) and even in the historical epistemology of Daston & Galison (2007). – In general, the classical approaches in that field would not at all argue in favor of a *complementarity* between rational reconstruction as a formal task and empirical reconstruction as a task for history, psychology, and sociology of science but rather would claim that these two aspects of the sciences are something *completely different*, something that we should carefully avoid confusing, and not at all something that we may have *to combine* in one or another way.

rather that a sociological approach to a rational reconstruction of the sciences *only* makes sense if it is embedded in a formal framework that allows us to reconstruct the underlying formal structures of the empirical elements that sociology and history provides to the philosopher. Again, this may be seen as an example were Carnap is sort of a "Kantian in the broadest sense" because even if the Kantian picture of a total difference of the empirical and the conceptual side of reasoning is false, this does not change the fundamental truth of Kant's observation that there always is *both* an empirical and a conceptual and a sensual and a structural *aspect* in reasoning and that a theory of reasoning that completely leaves one of these aspects must be either "blind" or "empty."

One finally may object here that even the formal framework may be something that must have an empirical motivation and that Carnap in the *Aufbau* completely fails to provide anything like that. Indeed, if my understanding of the *Aufbau* is correct, then *the only* conventional element that remains for the meta-level of constitutional *theory* is the question of the choice of the *formal framework.* It is true that in *this* respect, the *Aufbau* completely fails to provide sufficient motivation. However, the reason for this "failure" is obviously given by the fact that Carnap, at the time when he wrote the *Aufbau,* thought that there ultimately is only one possible system of pure logic that has eternal validity and thus cannot be questioned at all by the philosopher. Therefore, Carnap thought at this time that there is no need at all for a motivation of the "formal framework" (i.e., Russell's theory of types) that is used by constitutional theory. However, if we reject that picture and consider a plurality of logics (as it was done by Carnap from his Viennese period onward[41]), then the motivation of theoretical decisions becomes a question even on the meta-level of constitutional *theory*. Even in that case, if we consider a plurality of logics and, possibly, even some empirical motivation for and against some of the frameworks thus considered, this would not change at all the *complementarity* of the formal and the sociological approach because *in no case* (neither on the object level of the constitutional system nor on the meta level of constitutional theory), the presence of a sociological reconstruction dispenses us from the task of a purely *rational* (and therefore *logical*) reconstruction. We neither reduce the formal side of the sciences to the sociological nor the sociological to the formal – a *complete* picture can only be obtained if we consider *both*. This is something fundamentally different to everything that was claimed by the rather purist accounts of science studies and sociology of scientific knowledge.

To conclude, I do not want to argue here for an *assimilation* of the *Aufbau* to sociology of science but rather for the claim that the *incomplete* formalist story of the *Aufbau* may find its *completion* by means of sociology, psychology, and history of science. A *complementarity* of that kind is quite typical for Dilthey and his "German" empiricist attitude. Moreover, there *is* a Diltheyian background in

41 Cf. the "principle of tolerance in syntax" in Carnap (1968 [1934], § 17)

Carnap's early philosophy. These two facts, one systematic, and the other historical, make it very likely that Carnap already had in mind a complementarity between a formal and a historical/sociological approach to the sciences, an approach that rules out every form of synthetic a priori. Carnap seems to have embraced this, not only in 1928 under the influence of Otto Neurath, but already at the time when he worked on the *Aufbau*, under the influence of the Dilthey school.

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Institut Wiener Kreis
Spitalgasse 2-4, Hof 1
A-1090 Wien
Austria
christian.damboeck@univie.ac.at