

## Is there a hermeneutic aspect in Carnap's *Aufbau*?

Forthcoming in Adam Tamas Tuboly (ed.), *The History of Understanding in Analytic Philosophy: Around Logical Empiricism*. London: Bloomsbury.

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**Abstract:** This paper elaborates on the now classical interpretation of Carnap's *Aufbau* by Michael Friedman. My main idea is that while correctly explaining the crucial formal notion of Carnap's account, Friedman's conception does not tell the whole story on the role of objectivity in the *Aufbau*. Purely structural definite descriptions as highlighted by Friedman are not the only condition for intersubjective communicability of concepts. There also must be added certain reducibility conditions that include psychophysical parallelism and a somewhat Diltheyian notion of understanding via analogical conclusion. If we add these conditions, it turns out that objectivity in the *Aufbau* ultimately is not just a purely logical (or purely structural) issue but also involves the acceptance of certain rather traditional philosophical notions. This becomes possible, because these notions, in Carnap's scientific framework, are indeed not philosophical because they have the character of non-trivial empirical claims.

**Keywords:** Rudolf Carnap, Wilhelm Dilthey, objectivity, understanding, Hermeneutics

### 6.1. Introduction

Michael Friedman (1999: 89–113) argued that the main aim of the constructional system of Carnap's *Der logische Aufbau der Welt* (1928/1967), hereafter called *Aufbau*, is to provide intersubjectively communicable and therefore objective definitions for concepts. This intersubjective communicability, in turn, becomes granted via what Friedman calls purely structural definite descriptions of concepts (hereafter PSDD):'

Carnap argues that only the logical form or structure of a relation is objective or scientifically communicable: any excess 'content' going beyond logical structure must rest ultimately on ostensive definitions, and these, according to Carnap, provide no intersubjective meaning. For truly objective communication, then, we must require that all relations are given only through descriptions of their structure—through what Carnap calls 'purely structural definite descriptions' (§§12-15). (Friedman 1999: 97)

A famous example of a PSDD in the *Aufbau* is the definition of the “Eurasian railroad network” (§14). One of the stations in the network might be characterized by the structural characteristic that emerges if we draw lines between all stations being directly connected in the railroad network. If the resulting graph is unique for a station A then it constitutes a PSDD for A.

In this paper, I recommend separating Friedman’s discussion of PSDD from his more general point about how to make concepts intersubjectively communicable. While the main innovative feature of the *Aufbau* is certainly the idea of PSDD, it is also important to see that there is another aspect of intersubjective communicability involved in the *Aufbau* which does not boil down to structure but instead directly connects with more traditionally minded philosophical notions such as psychophysical parallelism and understanding via analogical conclusion. Because all these notions are characteristic of Dilthey’s and other 19<sup>th</sup> century hermeneuticist’s views generally, including their conception of hermeneutics and objectivity, for example, this story also adds an additional task to highlighting Dilthey’s work as relevant background reading to the *Aufbau*. Whereas previous readings (Damböck 2012; Dewulf 2017) were more focused on the status of mental objects (*geistige Gegenstände*) in the *Aufbau*, the present paper has a different focus, namely, how crucial psychophysical parallelism and understanding via analogical conclusion as Diltheyian notions are for the general scientific and empirical side of objectivity.

But how does this work? How can Carnap, who unequivocally claims in the *Aufbau* and elsewhere to be neutral regarding philosophical questions such as, e.g., realism versus phenomenalism (§§176-178) at the same time defend such seemingly super-philosophical 19<sup>th</sup> century claims? The answer is that there is a clear difference between, e.g., the realism topic and the notions of psychophysical parallelism and understanding via ontological conclusion being addressed here. Though the latter were defended mainly by philosophers and insofar are philosophical because they belong to the 19<sup>th</sup> century philosophical discourse culture, they are still different from philosophical conceptions in the sense of realism and phenomenalism because they involve non-trivial empirical claims. If psychophysical parallelism holds, then for every mental fact we need to have a corresponding empirical fact, and this firstly needs to be established at the level of facts and natural laws. Moreover, understanding via analogical conclusion only works if for every particular case of a mental state we also can find a strategy to connect this with empirical facts (at the level of behavior or neurons); again, we need to have empirical facts and laws of nature here that make this conception tenable. Insofar, it is also quite problematic to call these conceptions

“philosophical”; one might better call them general scientific notions because they are bound to empirical facts and natural laws that first need to be established in sciences such as psychology, sociology, history, physiology, and the neurosciences. In order to do justice to this we henceforth call these crucial notions here philosophical/scientific notions because they stem from 19<sup>th</sup> century philosophical discourse but still depend on concrete empirical facts and natural laws.

In Section 6.2, I briefly characterize the particular brand of hermeneutics that was represented by Wilhelm Dilthey and highlight those crucial notions of this conception that also might have been relevant for Carnap. In Section 6.3 I review several reduction procedures as crucial elements of the *Aufbau* which obviously parallel Dilthey’s conception in ways that at least partially can be traced back to Dilthey. On this basis I claim in Section 6.4 that objectivity in the *Aufbau* cannot entirely become boiled down to PSDD.

## **6.2. Dilthey (and other 19<sup>th</sup> century philosophers) on hermeneutic objectivity**

Note that the views being attributed to Dilthey here are characteristic also for several other German philosophers that include the Völkerpsychologie of Moritz Lazarus and Chajim H. Steinthal, the empirio-criticism of Richard Avenarius, and the Neo-Kantianism of Hermann Cohen and Ernst Cassirer. These views were commonplace for the mainstream of German philosophy in the second half of the 19<sup>th</sup> century but they were increasingly attacked at the beginning of the 20<sup>th</sup> century, to the effect that in the 1920s, facing the new age of philosophy as represented by Edmund Husserl, Martin Heidegger, and others, they were widely rejected in the German philosophy community: 20<sup>th</sup> century continental philosophy henceforth took a stance being widely at odds with the more rational and objectivist views of these 19<sup>th</sup> century philosophers. (Damböck 2020, forthcoming) Given that overall picture it is indeed remarkable that Carnap still decided to defend these 19<sup>th</sup> century pro-scientific views against his somewhat post-modern contemporaries in the 1920s. I take Dilthey as my chief witness here, only because he and some of his followers at first influenced Carnap regarding his general views on objectivity and understanding. So, this is the story that could be told in similar ways as well, using Steinthal, Lazarus, Avenarius, Cohen, or even Cassirer:

As a counterpart to the more well-known notion of objectivity as a means of observing nature in an entirely non-subjective way, the German philosopher Wilhelm Dilthey specified a second form of objectivity as a crucial notion of hermeneutics, viz., objective

understanding.<sup>1</sup> Whereas the former was a matter of the natural sciences, the latter was intended as its counterpart in the field of the human sciences. However, even Dilthey made some effort to point out that the first variety of objectivity that comes from the natural sciences is crucial for all kinds of science. Following the lead of Helmholtz, Dilthey (2011: 690) was convinced “that we got a grip on the proofs that it is really the case and the world is built by objects being utterly identical with our representations”. However, objectivity of that kind had to be complemented, for Dilthey, by a second variety being tailored for the humanities:

The objectivity of knowledge that is sought here has a different sense; the methods for approaching the ideal of objectivity of knowledge here display essential differences from those by which we approach the conceptual cognition of nature. (Dilthey 2002: 92)

The “laws” that are relevant here, for Dilthey, are grounded in the nature of “the experienceable, conceivable, and understandable” (ibid.). The key problem for Dilthey, however, in the task of gaining objectivity in the field of the human sciences, is that while the physical world is, in his view, directly accessible through our senses, the cognitive world of others is accessible indirectly, at best. He says, for example: “We can understand other people only by means of analogy to our own inward” (Dilthey 1990: 315). Therefore, on Dilthey’s view the hermeneutic method has to be developed on the basis of everyday communication because only there we come close to the “inward” of others; analogical understanding, therefore, has to be based on a study of everyday communication. According to Dilthey, the “elementary forms of understanding” as covered by a study of that kind provided the “letters” of our alphabet of understanding which we put together in order to develop “higher forms of understanding” (Dilthey 2002: 228–34). Thus, understanding as a whole is entirely based, for Dilthey, in the development of what we today might rather call a semiotic practice that allows us to decipher the talk and behavior of others.

*Intuition* plays an important role here, of course, since it is intuition alone that allows us to see the just mentioned “analogies to our own inward.” However, intuition of that kind is not anything irrational. Dilthey followed here the scientific attitude of his teacher August Boeckh, according to whom hermeneutics has been based on scientific analyses in the fields

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<sup>1</sup> It is remarkable that Daston and Galison (2007) though correctly describing objectivity as an “epistemic virtue” that became crucial only in the second half of the 19th century by no means deal with this second form of objectivity. For them, objectivity is exclusively a business of the natural sciences, in spite of the fact that for Dilthey and other main representatives of the humanities the second, hermeneutic aspect of objectivity has been no less crucial for their scientific worldview than the first one.

of (what we now would call) linguistics, history, psychology, and sociology. This variety of hermeneutics converges with 20<sup>th</sup> century semiotics, although it has little to do with the varieties of hermeneutics, in the style of Heidegger, Habermas, and Gadamer. Though for Boeckh hermeneutics was based on intuition or “feeling” (“Gefühl”) this side of hermeneutics was just the last step in a corpus of investigations that could become scientific only if they were developed in an entirely empirical way. (Boeckh, Bratuscheck, and Klußmann 1886/1877: I, 86).

The key features of this empirically minded variety of hermeneutics, which are quite characteristic for 19<sup>th</sup> century German philosophy, although they became somewhat twisted in 20<sup>th</sup> century so-called continental philosophy, are the following:

- (1) A variety of psychophysical parallelism, here seen as the thesis that there is no mental phenomenon without a clearly demarcated physical representation or, as Dilthey (1989: 67) put it: “Only by means of abstraction is mental life separable from the psychophysical life-unit”.<sup>2</sup>
- (2) Understanding becomes possible by means of the fundamental thesis that mental events as well as meanings of utterances are related to behavior in similar ways among human beings.
- (3) Mental objects become empirically accessible only via their physical representations—Hegel’s “objective spirit”, therefore, becomes turned on its head; the Hegelian notion of a mental being objective already at the mental level becomes replaced with a mental whose objectivity exists only by means of the physical representations of mental objects (Dilthey 2002: 170–4).

In the following I will argue that the constitutional system of the *Aufbau* is based on notions of intuition and understanding being quite similar to these developed by Dilthey. More precisely, it will be my crucial claim that objectivity in the *Aufbau* at the end must be seen as surprisingly close to Dilthey’s second, hermeneutic notion of objectivity, while PSDD are mere tools that allow us to achieve that goal, in a scientific way.

### 6.3. Reducibility conditions

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<sup>2</sup> This variety of psychophysical parallelism is weaker than the classical notion in Fechner, because unlike Fechner, Dilthey does not base his notion on a rejection of causal relationships between the mental and the physical. Carnap, as I will point out below, also uses the notion in this weaker and more general form as it is used by Dilthey, not mentioning at all the mind-body-causality topic.

The *Aufbau* offers several fundamental reduction procedures which all rest on philosophical/scientific assumptions which are related to Dilthey's (and other 19<sup>th</sup> century philosophers') conception of hermeneutics. This does not change the fact, of course, that the way in which these procedures become realized in the *Aufbau* is entirely different from Dilthey's view, which clearly does not offer anything like PSDD. These are the Diltheyian procedures, as they appear in the *Aufbau*:

(1') Reduction of the physical to the autopsychological is the most fundamental reduction procedure of the *Aufbau*. I will not discuss here whether Carnap's seemingly failed attempts to provide such a reduction procedure might finally come to a happy end in the context of a new and improved system (Chalmers 2012; Leitgeb 2011). Rather, I simply want to point out that to provide such a procedure is fairly crucial; failure of a reduction procedure of that kind would imply an entire breakdown of science and rationality. In the *Aufbau*, Carnap defends several times (and quite explicitly) psychophysical parallelism (§§19, 57) as the basis of this step. Carnap identifies "the central problem of metaphysics" independently from the "psychophysical problem" (§22) and therefore locates it outside the purview of the *Aufbau*, where he clearly defends *psychophysical parallelism* and rejects *substance-dualism* (§162).

If a physical object were irreducible to sensory qualities and thus to psychological objects, this would mean that there are no perceptible indicators for it. Statements about it would be suspended in the void; in science at least, there would be no room for it. *Thus, all physical objects are reducible to psychological ones.* (§57, original emphasis)

To be able to talk about a physical object, one must have a mental grasp of it. Otherwise, the object will be a myth, or something for which "in science at least, there would be no room". There are no isolated spheres of physical and psychological objects for Carnap. The strategy to reduce psychological objects to their parallel physical objects can be twofold; it either can be based on "parallel processes" in the brain or on (behavioral) "expression relations" (ibid). Without reduction procedures of that kind the external spatiotemporal world would be inaccessible to the human mind. Therefore, psychophysical parallelism and the respective reduction procedure, for Carnap, are fundamental conditions for the possibility of a constructional system and science as a whole.

(2') Similarly, the reducibility of heteropsychological objects to autopsychological ones (by means of physical objects) is an equally fundamental condition for Carnap. This can

be illustrated by the following episode which occurred when Carnap started his work on the *Aufbau* in summer 1920 with a brief manuscript, entitled “Skeleton of the theory of knowledge” (“Skelett der Erkenntnistheorie”).<sup>3</sup> This manuscript reflects the outcome of a meeting Carnap had organized in summer 1920, in order to do philosophy of science with a number of friends (who, by the way, all belonged to the Dilthey-school; see Dahms 2016; Damböck 2021). It consists of a sketch of the interrelation of the first three object types of the *Aufbau* and considerations on possible reduction procedures. The starting points are “experiences” or “facts of consciousness” (“Erlebnisse (Bewusstseinstatsachen)”). Certain experiences that Carnap calls “representations” (“Vorstellungen”) allow us to identify their objects, which either can be “representations” again or “physical objects”. Distinguished physical objects are “my body” and “other bodies”.

Several sequences of physical events of my body are often simultaneous with certain sequences of experiences; when I find similar sequences of events in other bodies then I will produce the fiction that even their ‘experiences of other minds’ take place. (RC 081-05-04)

This shows that in 1920 Carnap already had a system in mind whose major aim would have been *the development of reduction procedures* between autopsychological, physical, and heteropsychological objects (whereas the idea of PSDD was developed at a later stage). At the end of the “skeleton” Carnap provides a reference to Eduard Sokal’s paper “The salto mortale of thought” (“Das Salto-Mortale des Gedankens”) from the 1904 issue of Ostwald’s *Annalen der Naturphilosophie* (Sokal 1904). Since this paper, which (at least to my knowledge) has never been cited in Carnap’s subsequent work, seems to have been important for the formulation of the very first draft of the *Aufbau* it should be worthwhile having a brief look at it.

After a number of poems and romantic considerations on the small man and the big stars, Sokal turns to a rather clear and concise discussion of the psychophysical problem, with special focus on the problem of accessibility of other minds. Sokal’s discussion mentions Gustav Theodor Fechner as its major witness and points out that we are able to know from other minds only by means of “analogical conclusion” (“Analogieschluss”). It is not perception but rather (logical) deduction that allows us to gain knowledge of others.

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<sup>3</sup> Archives for Scientific Philosophy, Hillman Library, University of Pittsburgh, Rudolf Carnap Papers, RC 081,05-04.

[This] *knowledge of others* that we only can deduce and conjecture but never can perceive [undertakes] a steady and essential correction to our own content of consciousness and [serves] as integral part of our fundamental and important conceptual differentiations. Without this eternally enigmatic knowledge of the other that we achieve through a *salto mortale* of thought we obviously would never have been able to supply to our own perceptions the examination and objectivation that appears to be so important, both in a practical and in a thought economical, i.e., scientific sense. (Sokal 1904: 108)

Carnap seems to have agreed with the conclusion that there is no communication and, as a consequence of this there is also no objectivity if science fails to offer this “*salto mortale*” and instead connects different minds via the behavior of the respective people and via the fundamental thesis that behavior represents mental events in all human beings in similar ways. This is, in fact, what Carnap describes in those paragraphs of the *Aufbau* that deal with the problem of intersubjectivity (see the next section).

(3') Mental objects (“*geistige Gegenstände*”) have to be reducible, for Carnap, to psychological and physical representations. He rejects the idea of mental objects as being located in a transcendent realm of platonic ideas. Carnap’s respective conception is closely related to Hans Freyer’s account in *Theory of Objective Mind (Theorie des objektiven Geistes)*. Freyer’s book, in turn, is based on the conceptions of Wilhelm Dilthey, especially of Dilthey’s late book *The Formation of the Historical World in the Human Sciences (Der Aufbau der geschichtlichen Welt in den Geisteswissenschaften; cf. Dilthey 2002; Freyer 1923; Tuboly 2021)*. The upshot of these writings of Freyer and Dilthey is that mental objects exist only by means of their mental representations (in the head of the persons who represent them) or the pieces of literature, art, and artifact that represent them, respectively. This *psychological* and *semiotic* approach to mental objects is crucial for Carnap because only in the context of such a non-Platonist treatment do suitable reduction procedures become possible.

These three examples demonstrate that Carnap’s constructional system, though neutral with regard to metaphysical conceptions such as realism and phenomenalism, and also based on the purely logical account of PSDD, is not neutral with regard to fundamental philosophically/scientific claims. Psychophysical parallelism, the accessibility of other minds, and the non-transcendent status of mental objects and values are quite concrete and empirically meaningful philosophical/scientific positions. For Carnap, to affirm these positions and to reject their counterparts is a fundamental condition for the possibility of rationality, for intersubjective communication, and for the sciences as a whole. The



constructional system of the *Aufbau* is inevitably linked to these philosophical/scientific positions, and it is neither a purely logical undertaking nor is it neutral. Those philosophical conceptions, in turn, that Carnap regards as a matter of convention—viz. realism vs. phenomenalism—are compatible with the same empirical reality and are indeed empirically neutral and somewhat irrelevant for science. Psychophysical parallelism and hermeneutics via ontological conclusions, by contrast, are by no means neutral in this sense because they lead to a wealth of empirical implications. Therefore, only because they are *not philosophical at all* in the sense in which Carnap takes philosophy a mere matter of convention can these notions be adopted by Carnap on a level that goes beyond matters of convention.

The idea that Carnap had a deep commitment to philosophical neutrality (Carnap 1928/1967, §§157–78; Schilpp 1963, 44–6) is misleading insofar as he only rejected philosophical claims (or tried to be neutral at least, i.e., accepted both negative and affirmative readings of these claims) that have no positive empirical meaning at all. However, the reducibility claims we attributed to the *Aufbau* are certainly empirically meaningful. Psychophysical parallelism (in the sense Carnap took it) has the concrete empirical implication that every psychological phenomenon must have a physical representation (the existence of psychological phenomena that fail to have such representations would refute that claim); the claim of accessibility of other minds implies the possibility of universal *understanding* (the existence of entirely inaccessible, un-understandable persons would refute that claim). The claim that mental objects only exist by means of their psychological and physical representations demands for an entirely empirical approach that rules out any aprioristic talk about the mental. In other words, the just described philosophical/scientific claims of the *Aufbau* are empirically meaningful because their failure would in each case imply the failure of the respective reducibility condition, and as a result of this failure the empirical world would look entirely different.

#### **6.4. How purely structural is the notion of objectivity in the *Aufbau*?**

The aim of the *Aufbau* is to achieve an entirely *objective* constructional system. Whereas in other systems of concepts (such as Husserlian phenomenology or sense-data empiricism) the meaning of concepts becomes specified only by means of some irreducibly subjective aspects (phenomena in the sense of Husserl are irreducibly *intentional*, sense-data in the sense of

Hume, Mill, Russell, are irreducibly *ostensive*<sup>4</sup>), Carnap's approach in the *Aufbau* is based on the representations of the logical values of concepts via PSDD, which do not contain any subjective element and are therefore perfectly objective. However, this (purely logical) sense of objectivity is not the only sense of objectivity that can be found in the *Aufbau*. Rather, Carnap also wants to make the full meaning of each concept—the epistemic value rather than the logical value—objectively available. The logical value of a concept is purely structural, but it may cover not even an aspect of the epistemic value. Carnap notes that “A constructional transformation may, for example, turn a true, epistemically valuable statement into a triviality” (§50). It certainly was not the end goal of the *Aufbau* to produce objective definitions at the price of turning meaningful concepts into (cognitively useless) trivialities.

In other words, it is not quite true that, as Alan Richardson puts it (closely following Michael Friedman), “the objective and the objectively communicable *are exhausted* by the structural properties of the objects of science” (Richardson 1990: 12, emphasis added). Though purely structural properties are of crucial importance for the *Aufbau*'s story about the route to objectivity, it is certainly not only the structural property of a concept that Carnap wants to make intersubjectively communicable and therefore objective. Carnap's aim is instead to make the whole epistemic meaning of a concept intersubjectively communicable and therefore objective. This implies that my reading of the following passage of the *Aufbau* seems to somewhat diverge from the readings of Friedman and Richardson:

Even though the subjective origin of all knowledge lies in the contents of experiences and their connections, it is still possible, as the constructional system will show, to advance to an intersubjective, objective world, which can be conceptually comprehended and which is identical for all observers. (§2)

To achieve that goal, we firstly (but not exclusively) must develop purely structural definitions for all concepts (here I am in complete agreement with Friedman and Richardson). These definitions are (in themselves) both intersubjectively communicable and objective, of course, but they are by no means identical with the “intersubjective, objective world” which, according to Carnap, the constructional system allows us to make sense of.

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<sup>4</sup> The sense-data empiricism of Russell is not identical with the sense-data empiricism of Hume and Mill; cf. Richardson (1990). While Hume and Mill take sense-data as mental phenomena, Russell takes them to be physical entities. However, the different varieties of sense-data empiricism as mentioned here seems to converge at least with respect to their “ostensive” nature.

For Carnap, what makes a concept objective in the full sense that also includes its epistemic value is not merely the development of PSDD (this is merely a first step), but also the procedure of “intersubjective correspondence” (“intersubjektive Zuordnung”, §146), which allows us to map each concept  $c$  of each type to its intersubjective sphere. Intersubjective correspondence is a procedure that allows us to specify counterparts  $c^M$  to  $c$ , for every instance  $M$  in the world of heteropsychological objects. This procedure relocates a given concept  $c$  in the autopsychological realm of a person  $M$ , in such a way that it covers exactly the same meaning (epistemic value) that it initially covered in the autopsychological realm of  $M$ . In order to shift the concept from person  $M$  to another person  $N$  we simply use the autopsychological basis as an intermediary step, and consider both  $c^M$  and  $c^N$ . Intersubjective correspondence therefore allows us *to distribute* any concept  $c$  to the intersubjective realm; the epistemic value of  $c$  becomes available to each person  $M$  (provided that  $M$  is capable of dealing with our system at all). The whole constructional system appears to be a device for *understanding*, which is a *hermeneutic* tool. The account of “intersubjective correspondence” as given in Richardson (1998: 82–6) is perfectly compatible with my interpretation. There is no disagreement here with respect to the question of how intersubjective correspondence works. Disagreement may arise only with respect to the question of how the function of intersubjective correspondence works for the overall conception of a constructional system.

It is true that Carnap in § 16 points out “that, *for science, it is possible and at the same time necessary to restrict itself to structure statements.*” But this does not imply that, for Carnap, science *is exhausted* by its structuralist side. According to Carnap, science must be purely structural as long as it is also something purely linguistic, such as a class of statements or deductions, or the kind of thing that we might lay down in the form of a computer program. However, this is not the only side of science for Carnap. For him, science is also a cognitive undertaking which is carried out by human beings. Thus, for Carnap, even “in science” “cognition” takes place (“for the most part”) “intuitively and not in the rational form of logical deductions” (§100). Carnap at one point says, “*The constructional system is a rational reconstruction of the entire formation of reality, which, in cognition, is carried out for the most part intuitively*” (ibid.). The qualification that Carnap makes in this passage is not that he wants us to overcome intuition and replace it with logic. Referring again to the just quoted section, in §143, Carnap unequivocally says that “*the construction* [i.e., the constructional system] does not represent the actual process of cognition in its concrete

manifestations”. This leads to a “deviation of the construction from the actual process of cognition” (ibid.). In other words, the constructional system provides a rational reconstruction which is something quite different from “the actual process of cognition.” PSDD do not represent actual concepts but do represent something else. PSDD are not even similar to concepts. They only uncover their structural locus and their functional role in the whole process of cognition in order to allow us to build bridges between different realms of cognition, the most important of which are the bridges between the concepts in different minds. PSDD are a tool that allows us to support understanding but they are located in a realm that appears to be rather disjoint from cognition in itself. Carnap says, “[The] course of the process of cognition is not misrepresented by the construction” (ibid) because construction ultimately has little to do with cognition. It instead represents an entirely different realm, viz. the realm of structural/analytic objects, whereas cognition is an empirical matter.

“Construction” “reconstructs” the actual “course of the process of cognition”, and as Carnap points out at the end of §143, these entities are “not even fictitious” (ibid.). And this is a qualification which seems to be important for the whole of the constructional system. The remark that immediately follows this passage unequivocally points out that what Carnap tells us here is to be taken as a fairly general observation with serious consequences for the whole of the constructional system: “These remarks hold, beyond the present problem [of production of signs], quite generally for all construction” (ibid.). In other words, we have good reasons to believe that this is a crucial passage of the *Aufbau*.

Recall, on the other hand, Carnap’s statement in §16 “that, *for science, it is possible and at the same time necessary to restrict itself to structure statements*”. This is an important observation, of course. But concepts belong to the constructional system in a twofold way. Firstly, they belong to it as something produced by the constructional system, viz. something purely formal or analytic, and not as something produced by the scientist who produces the constructional system, viz. something cognitive or synthetic. In this sense, concepts are PSDD. But these purely structural objects must be distinguished sharply from Carnap’s understanding of concepts as the sources of cognition which provide the external sources of the constructional system. These external sources are not produced by the constructional system but by human beings, and they are not analytical but cognitive! The constructional system is intended to help us to stabilize concepts in the latter fully-fledged sense of cognitive products of the human mind. To achieve this goal, we need PSDD, to be sure. Secondly, there is also a variety of this process of stabilization which becomes visible inside

of the constructional system and functions independent from the formal story of PSDD. The end goal of the constructional system is the construction of “the intersubjective world” (§148). The fundamental qualification of the *Aufbau* is that “there exists a general one-to-one correspondence between all such systems, that is, between the worlds of all persons (i.e., normal persons known to me), including myself” (ibid.). This intersubjective world “forms the actual object domain of science” (§149). Intersubjectivity in that sense is entirely detached from the structural story because it is realized as a concrete empirical process of distribution of concepts among human beings.

This qualification also becomes quite necessary if we survey the different places in the *Aufbau* where Carnap uses the term “objectivity”. This term is used together with “intersubjectivity”, which already in that passage where the former term first occurs (in the already cited §2). The next time Carnap uses the term “objectivity” is the famous (and already cited) §16, this time with an explicit reference to “the problem of intersubjective reality” to which he announces he will return “later”. Finally, in §66, Carnap points out that “the precise method for achieving objectivity in the sense of intersubjectivity” will be demonstrated in §§146-149, i.e., in the already cited paragraphs where Carnap introduces the notion of intersubjective correspondence that we identified as crucial for the constructional system as a whole. It is only the technique of intersubjective correspondence that allows us to establish objectivity in its fully-fledged form, whereas PSDD function as auxiliary devices here.

The richer form of objectivity as just characterized above points to an important (and somewhat neglected) side of Carnap’s thought, which is connected to the role that *psychology* plays in the *Aufbau*. As pointed out by Uljana Feest (2007), Carnap’s understanding of psychology in the *Aufbau* is neither based on Gestalt psychology nor on Brentano’s notion of intentionality. Rather, Carnap deals with elementary experiences in the *Aufbau* which have strong similarities with conceptions of psychology developed by authors such as Hans Cornelius and Wilhelm Dilthey.

Already the very first draft to the *Aufbau*—the above mentioned “Skeleton of a theory of knowledge” from 1920—has been based on “facts of consciousness”, a term that has been almost exclusively used by Dilthey and his followers. Given this and the fact that Carnap developed the 1920 draft in collaboration with intellectuals who all belonged to the Dilthey-school, there is good evidence to suspect that the psychological basis of the *Aufbau* has been informed by the Dilthey tradition. The crucial aspect of “facts of consciousness” as understood in this tradition is that they are taken as objective representations of subjective

states (§65—“The given does not have a subject”). They are taken to be “facts”, i.e., there is no irreducibly subjective aspect, no “intentionality”, as in Brentano’s scholastic treatment of psychological states, but at the same time they are facts “of consciousness”, i.e., something that is owed only by a certain subject. A certain “fact of consciousness” or, as Carnap calls it in the *Aufbau*, a certain “elementary experience”  $e$  is something that (like any other fact) occurs *just once*;  $e$  cannot become repeated, neither in the same nor in another person’s stream of consciousness. Thus, a question comes up (and this was, of course, the crucial question of hermeneutics that involved Dilthey’s hermeneutic conception of objectivity) about how to gain access to such singular events by means of other events of consciousness. How can we map  $e$  to another mental event (“fact of consciousness”, “elementary experience”)  $e'$  in such a way that  $e$  and  $e'$ , though not the same event, nevertheless might be identified as being identical in some way? Carnap’s answer to that question and his solution to Dilthey’s problem of hermeneutic objectivity is encapsulated in the notion of intersubjective correspondence as introduced in §146 of the *Aufbau*.

In Conclusion, though its most innovative contribution is certainly the idea of intersubjective communicability of concepts via PSDD, the *Aufbau* nevertheless serves another aim that is related to objectivity and intersubjective communicability, namely, the aim of gaining access to other minds on the basis of notions such as psychophysical parallelism and understanding via analogical conclusion. The reduction procedures of the *Aufbau* almost all rest on such hermeneutic notions. It also needs to be pointed out that the presence of these material notions of objectivity may allow us to uncover another quite interesting and innovative feature of Carnap’s structuralism. The strength of the formal story of the *Aufbau* increases as soon as we realize that this formal story serves a certain external, material purpose, viz. to gain objectivity for real concepts and not just their structural representations. Moreover, psychophysical parallelism and understanding via analogical conclusion are neither metaphysical nor analytic but empirical claims because there must exist certain facts and laws of nature which allow us to uphold our fallible claims about other minds. This non-trivial, non-reductionist, and non-behaviorist variety of empiricism was continuously defended by Carnap in all later periods of his intellectual life. Taken from a more general and broader perspective, the story that is here told on the *Aufbau* would lead to an examination of “intersubjective accountability” in the philosophy of the left wing of the Vienna Circle (Uebel 2020), because the hermeneutic aspect of psychophysical parallelism and understanding via analogical conclusion is not only a key element of the Scientific World

Conception, in general, it also becomes crucial for the left Vienna Circle's attempt to develop a political philosophy of science. Finally, it is also worth noting that not only Carnap but also Otto Neurath committed himself to key notions of 19<sup>th</sup> century hermeneutics (Uebel 2019, Damböck forthcoming). This demonstrates that Carnap's respective commitment in the *Aufbau* was by no means an early aberration only but became characteristic for all varieties of Carnap's and left logical empiricist's philosophy.

## 6.5. Acknowledgements

This paper was written for its most parts already in spring 2015, during a stay at the Center for Philosophy of Science, University of Pittsburgh. For comments in the Center's reading group I am grateful to William Bechtel, Sara Green, Wayne Myrvold, John Norton, Hamid Sayedsayamdost, and Raphael Scholl. The paper elaborates on these sections of my habilitation thesis that deal with the theoretical aspects of the *Aufbau* and their relationship with the Dilthey school (Damböck 2017, 164–90). It also is related to some extent to (Damböck forthcoming) and to a talk with the same title that was presented at a workshop in Pécs in 2018. For comments on this talk, I am grateful to Akos Sivado, Adam Tuboly, Thomas Uebel, and Andreas Vrahimis. Thanks, finally, to an anonymous reviewer of this paper, for extremely helpful comments, and to Sammy Hirshland for language edits that highly improved the readability of this paper.

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