

Carnap's Incorporation of the Geisteswissenschaften in the *Aufbau*

Fons Dewulf

Ghent University

Contact: Vakgroep Wijsbegeerte en Moraalwetenschap, Blandijnberg 2, 9000 Gent

fons.dewulf@ugent.be

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Abstract

This paper investigates the various ways in which Rudolf Carnap incorporated contemporary epistemological problems concerning the *Geisteswissenschaften* in *Der logische Aufbau der Welt*. I argue that Carnap defends a non-reductive incorporation of the *Geisteswissenschaften* within the unity of science. To this end Carnap aims to solve the problem of individuality, which was the focus of attention for important philosophers of the *Geisteswissenschaften*, like Dilthey, Rickert and Windelband. At the same time, Carnap also argues that his constitutional method, which transforms cultural objects to psychological or physical objects, does not imply a loss of autonomy for the *Geisteswissenschaften*. Besides this defense of autonomy, Carnap also incorporates several central notions of contemporary theory of the *Geisteswissenschaften* into his theory of the *Aufbau*: cultural manifestation, phenomenology of cultural experience, and the method of *Verstehen*.

1. Introduction

Over the last three decades the philosophical origins of logical empiricism have been reassessed and the influence of post Kantian German philosophy on Rudolf Carnap has been heavily debated. Carnap's multifaceted work, *Der logische Aufbau der Welt* (1928), was a central node of this debate. The relationship between this early work of Carnap and various contemporary philosophical positions has been the subject of much discussion. Thus, scholars have sought to understand Carnap's work in relationship to Neo-Kantianism in general (Friedman 1999; Friedman 2000; Richardson 1998), and to the work of Cassirer (Mormann 2012), Rickert (Mormann 2006), Dilthey (Damböck 2012), and Husserl (Haddock 2008) in particular. However, one important aspect of the *Aufbau* within its contemporary philosophical context has, so far, been given only scant attention: namely the incorporation of contemporary debates on the cultural sciences¹ [*Geisteswissenschaften*] and the role of these sciences within the overarching structure and goal of the work.² This neglect is somewhat surprising considering that discussions on the cultural sciences were part of a dispute within philosophical reflection on science at the time and that an epistemology of the cultural sciences was a central

1 'Cultural sciences' will be used as a term that refers to a wide set of disciplines containing historiography, linguistics, political science, anthropology, literary studies, art studies and archeology. Carnap consistently uses the term "Geisteswissenschaften" to refer to these disciplines. Neo-Kantians like Rickert and Cassirer, use the term "Kulturwissenschaften". For these authors there was no clear-cut difference between social sciences and humanities. So I will not use this fairly modern terminology. Where I will speak of these sciences in abstraction from their epistemological analysis, I will use the term "cultural sciences", which it is not a common English term itself. I will not use the term as a translation for Carnap's "Geisteswissenschaften", because it would abstract from the very reason why Carnap used this term, and not the term "Kulturwissenschaften". cf. Note 6

2 As far as I know, Klaus Robering is the only author who mentions this incorporation in an encyclopedia-article on "Wissenschaftstheorie und Semiotik". He remarks that even though current philosophy of science has paid little attention to the cultural sciences, Carnap as one of the prominent figures in the origins of philosophy of science gives a detailed sketch of a theory of the cultural sciences. (Robering 1997, 2407) Michael Friedman also remarks that the cultural sciences form a collection of object levels within the system of the *Aufbau*. Friedman does not, however, discuss the specific features of these levels and their relation to contemporary theory. (Friedman 2000, n. 89 & 113)

philosophical concern for Dilthey, Rickert, Cassirer and Husserl.³

In this paper I argue that in his *Aufbau*, Carnap explicitly aims to position himself within the contemporary debates about the epistemic status of the cultural sciences. Given that the project of the *Aufbau* is to defend the unity of science, it is not surprising that it includes a discussion of the cultural sciences. What has not been sufficiently noted however, is how he actively incorporates the central contemporary terminology and methodology about the cultural sciences in his account of cultural objects. He also stresses that his logical analysis actually brings with it important advantages if one wants to understand the autonomy of the cultural sciences vis-à-vis the natural sciences or psychology. I analyse these advantages in section two by drawing attention, first, to Carnap's solution to the problem of individuality (2.1) and, second, to his distinction between logical complex and mereological sum, which I relate to his distinction between logical and epistemic value (2.2) and which should allow a non-reductive analysis of cultural objects. In sections three, four and five I reconstruct Carnap's sketch of what a theory of the cultural sciences should look like. In section three I discuss the constitutive definitions of the cultural objects outlined in the *Aufbau* and examine their relation to Dilthey's notion of manifestation. In section four I discuss Carnap's adoption of the notion of a *phenomenology* of the cultural sciences, and in section five I discuss Carnap's position on *Verstehen* where it will become clear that Carnap develops his position in an implicit debate with Dilthey's own account of the concept.⁴ In section six I summarize the insights of the paper and I also show how Carnap's position on the cultural sciences expressed in the *Aufbau* gradually disappears from his writings during the 1930's.

2. The autonomy of the *Geisteswissenschaften*

In this section I focus on the reasons Carnap gives for describing the domain of the *Geisteswissenschaften* as autonomous. This is a necessary precursor for sections three, four and five, where I focus on Carnap's sketch of a positive account of the cultural sciences. Carnap's concern for the *Geisteswissenschaften* in the *Aufbau* is related to the aim of the book, which is to show how a limited set of basic concepts and a theory of relations can be used to constitute all the concepts of the different sciences within one “constitutional system”. Carnap intends to show that despite all the differences in objects, methods and concepts, the various branches of the sciences can be united in “a unified system of

3 Dilthey, Rickert and Cassirer will be the subject of comparison at several points in the rest of the paper. For Husserl the epistemology of the cultural sciences was, perhaps, less of a direct concern. He was, however, actively involved in the debate. See e.g. (Husserl 2015; Jalbert 1988).

4 Christian Damböck has already argued that the *Aufbau* should be understood partly within a Dilthey inspired, “German empiricist” tradition. (Damböck 2012) I argue below that Carnap's specific position on the *Geisteswissenschaften* should also be understood as a Dilthey-like position. This claim is consistent with, but does not rely on Damböck's wider account.

concepts to overcome the separation of unified science into unrelated special sciences” (Carnap 1928/1998, sec. 2).⁵ Given this aim, Carnap incorporates not only the natural sciences, but also psychology and what he calls the “Geisteswissenschaften”. These sciences study cultural [*kulturellen*], historical and sociological objects (Carnap 1928/1998, sec. 23).⁶ Carnap takes the validity of the *Geisteswissenschaften* as an autonomous field of inquiry for granted.

The philosophy of the nineteenth century did not pay sufficient attention to the fact that the cultural objects form an autonomous type. The reason for this is that epistemological and logical investigations tended to confine their attention predominately to physics and psychology as paradigmatic subject matter areas. Only the more recent philosophy of history (since Dilthey) has called attention to the methodological and object-theoretical peculiarity [*Eigenart*] of the area of the *Geisteswissenschaften*.⁷ (Carnap 1928/2003, sec. 23)

In those sections of the *Aufbau* that discuss the constitution of the *Geisteswissenschaften*, the autonomy and validity of these sciences are repeatedly emphasized. In sec. 56 he restates the claim that cultural objects “are not composed out of psychological states”, rather they belong to a completely different object sphere within the constitutional system. This is repeated in sec. 151: “the cultural objects are of a completely different object level than the psychological or physical”. Propositions containing cultural objects cannot be meaningfully [*mit Sinn*] transformed into propositions containing other kinds of objects (Carnap 1928/1998, sec. 23). One finds the same message in his discussion of the philosophical mind-body problem: the dualism between mind and body only arose in philosophy as a consequence of the early focus of the sciences on the physical and the psychological, while the cultural [*geistigen*] and biological still had to be developed as independent [*selbständig*] domains (Carnap 1928/1998, sec. 162). Carnap did not add these remarks on the autonomy and specificity [*Eigenart*] of the *Geisteswissenschaften* within his constitutional system without further explication. On the contrary, he actively tries to incorporate insights gained from the debates within contemporary theory of the *Geisteswissenschaften* in his logical argument for the unity of science.⁸ In 2.1 I argue that Carnap believes

5 Throughout the paper I use Rolf George's translation of the *Aufbau* (Carnap 1928/2003).

6 Carnap calls these objects the “geistige Gegenstände”. Throughout the paper I choose to translate “geistige Gegenstand” as “cultural object”, because mental objects in English refer to a psychological phenomenon, which is precisely not what Carnap means with “geistige Gegenstand”. Carnap himself realizes that his terminology could confuse his readers (Carnap 1928/1998, sec. 23). He probably stuck to the Diltheyian terminology, because he had a logically very different theory of the concepts of the *Geisteswissenschaften* than Windelband and Rickert (cf. 2.2), who consistently talked about cultural object and cultural sciences [*Kulturwissenschaften*] (Makkreel 2010).

7 Rolf George mistranslates “Geschichtsphilosophie” as “history of philosophy”. The corrected translation would be “philosophy of history”.

8 In contrast to Alan Richardson's remark that the constitution of cultural objects does not introduce any new epistemological problems in the *Aufbau*, I argue below that a range of epistemological problems that were not treated before, in fact play a role, most notably the problem of the particular in the *Geisteswissenschaften* (Richardson 1998, 76).

that his purely structural, definite descriptions can be used to solve the problem of individuality that had, up until then, haunted the epistemology of the Geisteswissenschaften. Carnap's position here is very close to Ernst Cassirer's on the nature of concepts in the cultural sciences from Cassirer's *Substance & Function*. In 2.2 I argue that Carnap also believes that his constitutional theory allows him to maintain the disciplinary autonomy [Selbständigkeit] of these sciences vis-à-vis psychology and the natural sciences. The resulting position occupies an interesting place within contemporary debates since it merges the logical unity of all scientific concepts with autonomy at the level of disciplines.

2.1 Creating a Logic of Individuality

The first problem related to the Geisteswissenschaften that Carnap mentions in the *Aufbau*, is the problem of a logic of individuality - a central problem within the theory of the Geisteswissenschaften at that time. In a recent historical overview of the German historicist tradition Frederick Beiser takes the “principle of individuality” as one of its defining features. According to Beiser, German historicism is characterized by the belief that “the defining subject matter of history, and the goal of historical inquiry, is the individual, i.e., this or that determinate person, action, culture, or epoch which exists at a particular time and place” (Beiser 2012, 4). How exactly knowledge of the individual can be attained differs throughout the historicist tradition, but historicists share the common goal of understanding how knowledge of the individual is possible. Wilhelm Windelband gave one of the most influential accounts of this problem, and his former student Heinrich Rickert developed it further. Both argued that any concept in the natural sciences should be logically analyzed as a generic concept, which abstracts from the unique properties of the objects that are subsumed under it. Thus on their account, a natural scientific concept necessarily implies an abstraction from the individual traits and a collection only of common characteristics (Rickert 1929, 742; Windelband 1894/1980, 179). If cultural concepts were to maintain the individual properties of the historical and cultural objects they account for, they should avoid abstraction and use an alternative principle of subsumption.⁹ Wilhelm Dilthey outlines a competing epistemology of the cultural sciences that was widely discussed at the time. Dilthey emphasized that these sciences focused on the singular and individual aspects of historical and societal reality. (Dilthey 1883/1922, 1:27–28)

Carnap introduces these concerns in the theory of the cultural sciences in sec. 12 of the *Aufbau*.

Recently (in connection with ideas of Dilthey, Windelband, Rickert), a "logic of individuality" has repeatedly been demanded; what is desired here is a method which allows a conceptual comprehension of,

⁹ As a solution, Rickert introduced the classificatory notion of value-relation (Rickert 1929, 278). For discussion of Rickert's solution and its problems see (Iggers 1983, 156–159).

and does justice to, the peculiarity of individual entities, and which does not attempt to grasp this peculiarity through inclusion in narrower and narrower classes. Such a method would be of great importance for individual psychology and for all cultural sciences, especially history. (Cf., for example, Freyer [Obj. Geist] 108) I merely wish to mention in passing that the concept of structure as it occurs in the theory of relations would form a suitable basis for such a method. The method would have to be developed through adaptation of the tools of relation theory to the specific area in question. Cf. also Cassirer's theory of relational concepts [Substanzbegr.] esp. 299, and the application of the theory of relations (but not yet to cultural objects) in Carnap [Logistik] Part 11. (Carnap 1928/2003, sec. 12)

Carnap correctly recognizes that Rickert and Windelband aimed to develop a method to recognize the individuality of a given object without understanding it as a member of a generic class. Understanding a phenomenon as a specific individual within its historical/sociological context was considered by these two philosophers to be the characteristic that differentiates the *Geisteswissenschaften* from the natural sciences. Carnap agrees that such a method would be of great importance, especially for history. As an example, he refers to a specific passage in Hans Freyer's *Theorie des objektiven Geistes*.¹⁰ In this paragraph, called *Towards a logic of individual unities* [Zur Logik individueller Einheiten], Freyer laments the lack of a non-Aristotelian logical understanding of the concepts of the *Geisteswissenschaften*: “In German idealism, romanticism and in contemporary German philosophy one can find many attempts at this new logic, but the actual Aristotelian act has not ended yet. Its demise is, however, necessary” (Freyer 1923, 108).¹¹ Such a request for a new logic was grist for the mill to Carnap, who was on the forefront of the development of the new logic himself, and specifically of its application to the analysis of science.

As quoted above, Carnap believed Rickert's problem - namely to logically account for the uniqueness of an object - could be solved through the introduction of “the concept of structure as it occurs in the theory of relations”. He points to a specific passage in Cassirer's *Substance and Function* (henceforth *S&F*) as a reference: the passage appears in a chapter where Cassirer criticizes Rickert's theory of the concept of the natural sciences. Cassirer argues that Rickert's notion of “concept” in the natural sciences is incapable of “grasping the particular as particular”, since this concept is understood as an abstraction aimed at uniting only what is common in reality (Cassirer 1910/2004, 222). The particular

10 Freyer was an influential interbellum sociologist inspired by Dilthey's works. He held positions in Kiel and Leipzig, and became a representative of right wing socialist reform, and also a supporter of the national socialist movement. Carnap personally knew Freyer from the Dilthey school around Herman Nohl in Jena. He broke his relationships with him after 1933 (Damböck 2012, 75–76).

11 This is my translation. The original German reads: “In der Philosophie des deutschen Idealismus, der deutschen Romantik und der deutschen Gegenwart ließen sich mancherlei Ansätze zu dieser neuen Logik finden, aber die eigentliche aristotelische Tat ist noch nicht getan. Daß sie getan wird, ist dringende Notwendigkeit.”

is thus lost once subsumed under the concept - Rickert understands the universality of a concept as abstraction. Cassirer, however, wants to understand the concept of the natural sciences as a definite law of relations that unites the various individuals in a functional relation (Cassirer 1910/2004, 225). The passage in *S&F* to which Carnap referred, contains a page-long footnote reflecting on the nature of the purely individual historical concept and the problem of individuality. It is the only passage in *S&F* where Cassirer makes claims about the concept formation in the cultural sciences.

An essential task of the historical concept is the insertion of the individual into an inclusive systematic connection, such as has constantly established itself more distinctly as the real goal of the scientific construction of concepts. This “insertion” can occur under different points of view and according to different motives; nevertheless it has common logical features, which can be defined and isolated as the essence of “the concept”. (Cassirer 1910/2004, 228)

Interestingly Cassirer's point in this long footnote is a critique of any strong conceptual differentiation between the natural and the cultural sciences, directed against the proposals of Windelband or Rickert. In contrast to his later work Cassirer still believes that one logical analysis of the scientific concept, namely what he calls the functional concept, can incorporate both types of sciences.¹² Carnap understands his project in the *Aufbau* as a way to spell out such a theory of the functional concept with the aid of the modern logic of relations, which could thus also include the *Geisteswissenschaften*. Similar to Cassirer's position in *S&F*, Carnap argues that one logical analysis of the scientific concept could incorporate both the natural sciences and the cultural sciences. Specifically Carnap believes that his use of purely structural definite description of objects in the system of the *Aufbau* would allow him to determine the individual within a structured whole of relations. He can thus dissolve Rickert's and Windelband's quest for a logic of individuality specific to the cultural science, saving both the natural sciences from focusing solely on generalizing concepts, and the cultural sciences solely on individualizing concepts. The example of the railway system as a system of relations that closely follows the passage from sec. 12, was supposed to exemplify this belief.¹³

Carnap refers to the same passage from *S&F* again in sec. 75 of the *Aufbau*, stating that relational concepts actually determine an individual through lawful interconnections without losing its individual content. Both Michael Friedman and Alan Richardson refer to sec. 12 and sec. 75 of the *Aufbau* when arguing for the similarities between constitutional

12 Pace (Birkeland and Nilsen 2002, 105) the quite radical shift from *S&F* to the *Philosophy of Symbolic Forms* is very important to understand Cassirer's critique of the idiographic-nomothetic distinction. In *S&F* Cassirer believes one logic of conceptual functions should suffice, while after his *Philosophy of Symbolic Forms* Cassirer clearly believes different “types” of logic with a different phenomenological basis need to be recognized. Framing Cassirer's transition this way enables one to understand why Carnap could unproblematically refer to *S&F* as similar to his own position in the *Aufbau*, while Cassirer in his works from '30's and '40's would rather vehemently criticize Carnap's position.

13 For a discussion of Carnap's structuralist position in the *Aufbau*, see (Richardson 1998, 47–51).

theory and Cassirer's *S&F* (Friedman 2000, 71; Richardson 1998, 38–39). On my reading, the above quoted passage in sec. 12 is about more than that: it is also a part of Carnap's strategy to incorporate the debate on the Geisteswissenschaften in the *Aufbau*. Carnap's citation of Cassirer pointed to a Neo-Kantian who denied any strong conceptual bifurcation of the sciences and thus fitted within the unificatory ideal of logical empiricism. The reference to Cassirer in sec. 12 is primarily intended to show how Carnap situates himself within the German debate on knowledge of the individual in the Geisteswissenschaften. Carnap first refers to a well-known problem within philosophy of the Geisteswissenschaften and the inability of the traditional philosophers, namely Dilthey, Windelband and Rickert, to solve it, because, he claims, they were stuck with a traditional notion of concepts as generic classes. The reference to the specific passage in Freyer's work confirms that Carnap is talking about a problem that is specific to the conceptual analysis of the Geisteswissenschaften. Then, Carnap states that his theory of relations can be used to solve this problem. This is followed up by a reference to the footnote, where Cassirer refutes the Rickertian distinction between two different kinds of scientific concepts. My claim is not that Carnap developed his structuralist position in order to solve the problem of individuality that had plagued Rickert and Windelband, it is rather that he actively tried to prove how his structuralist position might also appeal to philosophers and theorists of the cultural sciences, because it was capable of handling a logical problem of great concern to them.

In section three I will investigate in greater detail the specific way that Carnap actually applies his structuralist position to the cultural sciences, or how he suggests it should be applied. First, however, it is necessary to show why Carnap took his theory of the concept to imply that he could maintain the autonomy of the Geisteswissenschaften.

2.2 Autonomy defended by Constitutional Theory

In order to understand Carnap's claim that the Geisteswissenschaften form an autonomous field, I will investigate what he calls “the epistemic value” [Erkenntniswert] of a level of a constitutional system.¹⁴ While Carnap introduces the notion of epistemic value in sec. 50 to characterize a fundamental feature of any constitutional level in any possible constitutional system, he only mentions this feature again when talking about cultural objects. Quite clearly, he recognizes that the problem of autonomy is most urgent for the cultural sciences. In order to reconstruct the exact meaning of this notion I will need to revisit some of the more abstract characteristics of constitutional theory outlined in the *Aufbau*.

A constitutional system is supposed to constitute various concepts from a limited set of ground concepts (Carnap 1928/1998, sec. 1). In the *Aufbau* Carnap introduces a constitutional theory that should be applicable to any constitutional system. The important notion of epistemic value that Carnap uses to uphold the autonomy of the

14 The distinction between constitutional theory and constitutional system is taken from (Damböck 2012, 90).

Geisteswissenschaften is an aspect of this theory. Using the theory Carnap also proposes a specific constitutional system that should be capable of yielding all scientific concepts. This system has elementary experiences as ground objects and one ground relation that holds over these objects (recollection of similarity). He does not exclude the possibility of other systems, e.g. with a physical basis (Carnap 1928/1998, sec. 62), or even a cultural basis (Carnap 1928/1998, sec. 56). The constitutional theory of the *Aufbau* analyzes every sentence as a propositional function (a proposition stripped of all non-logical constants). Certain names of objects [Gegenstände] can be used to complete the propositional function, yielding true or false propositions. "Object" [Gegenstand] is thus used in the *Aufbau* in a wide sense for any possible argument of a propositional function (Carnap 1928/1998, sec. 1 & 5). Those objects that can be used to complete the same type of propositional function are "sphererelated objects" and a class of all objects which are sphererelated to each other is called an "objectsphere" [Gegenstandssphäre] (Carnap 1928/1998, sec. 29).¹⁵ The objectspheres form the "levels" [Arten] of the constitutional system and are related to each other through constitutional definitions (Carnap 1928/1998, sec. 41). These definitions state how propositional functions containing an object of a specific level can be transformed into propositional functions containing other, already constituted objects within the system, while preserving the truth value of the relevant propositions.

If for example "natural number", "one" and "divisibility" are already constituted, one can constitute "prime number" by transforming the propositional function "x is a prime number" to "x is a natural number that can only be divided by one and itself" (Carnap 1928/1998, sec. 36). Every object that validates the first propositional function will also validate the second (so truth values are preserved). Through this transformation of the propositional function, the object "prime number" has been eliminated and replaced with already constituted objects. Every constitutional definition introduces a new object-level [Gegenstandsart] of the logical system by stipulating the logical meaning of the newly introduced signs, e.g. "prime number". Any introduced object of the system can, in this way, be 'eliminated' all the way back to the ground level of the constitutional system. In the proposed system of the *Aufbau* this ground level contains nothing but a relation (recollection of similarities) over a field of ground objects (the holistic elementary experiences). In the end every scientific sentence should be transformable into a sentence containing nothing but the ground relation and the ground objects, with preservation of the truth value of the original sentence.

Central to this idea of constitution is the notion of the "quasi-object". Every sign of an object of one of the levels (e.g. "prime number") refers to a "quasi-object". The quasi-object is, on the one hand, an object for the propositional functions of its own sphere. On the other hand the same quasi-object is a class or a relation that has validity over the

15 As Carnap himself remarks, this is similar to Russel's type theory (Carnap 1928/1998, sec. 33).

objects on the lower level that are used in its own constitution (Carnap 1928/1998, sec. 42).¹⁶ Every object of the system can be both a concept constituted out of lower-level objects and itself an object constituting higher-level objects (with the exception of the ground objects). Therefore, all the objects of the system other than the ground objects are called “quasi-objects” (Carnap 1928/1998, sec. 27). They are only relations between or classes of other quasi-objects. The only objects within the logical constitution system are the ground objects (elementary experiences): these objects are not themselves constituted. Therefore the objects of science have only those objects as their true logical reference (“logische Bedeutung”) (Carnap 1928/1998, sec. 41). However these objects do not epistemically validate the objective nature of scientific concepts. The elementary experiences are purely subjective and prevent an intersubjective system (Carnap 1928/1998, sec. 66). Only the structure of relations which is posited over them yields objective content.

This has a peculiar result: science does not talk about the ground objects. “In its practical procedure science creates propositions mainly in the form of propositions about the constitutive structure, not about the ground objects. And these structures belong to different constitutional levels, which belong to different spheres.” (Carnap 1928/1998, sec. 41) One cannot replace a quasi-object in a propositional function with a quasi-object from a different level of the system. One can only transform the propositional function, but then one is no longer talking about the previous objects. This allows Carnap to give his hierarchy of quasi-objects a specific epistemological meaning. Because of this feature of the quasi-object, science can be conceived of as a unified multiplicity of autonomous object spheres. Science is a structure of various autonomous object spheres layered over each other. The object spheres are constituted out of a single class of objects, namely those objects that can have a position as argument within a specific type of propositional functions (Carnap 1928/1998, sec. 41). Carnap introduces this idea very early in the *Aufbau* through the example of the “state”, a political concept belonging to the higher levels of the cultural domain:

The object state, for example, will have to be constructed in this constitutional system out of psychological processes, but it should by no means be thought of as a sum of psychological processes. We shall distinguish between a whole and a logical complex. The whole is composed of its elements; they are its parts. An independent logical complex does not have this relation to its elements, but rather, it is characterized by the fact that all statements about it can be transformed into statements about its elements. (Carnap 1928/2003, sec. 4)

16 Sec. 42 is an incorporation of the Neo-Kantian distinction between *sein* and *gelten* into the logical system of the *Aufbau* (Friedman 1999, 135–136). Carnap's position on the relation between the various levels of the constitution system will allow him to maintain both the general idea of reduction throughout the system and the idea of autonomy of the various levels, which are both important theses of constitution theory (Carnap 1928/1998, sec. 41).

Even though this characteristic is common to all the constitutional levels, Carnap refers to the difference between the compound whole and the logical complex almost exclusively in the context of his account of the Geisteswissenschaften. In sec. 23, where he first introduces the Geisteswissenschaften, he states that “the cultural objects are not composed out of the psychological or physical, but belong to a fully disparate object-level”. In sec. 56 he almost verbatim repeats the same thing. And in sec. 151 Carnap wants to “emphatically emphasize that the cultural objects are not psychologized”, because they are constituted through a relation over certain psychological objects of the system. “The cultural objects belong to a higher sphere within the system.”

Constitution, however, entails the possibility of transformation of every sentence containing cultural objects to a sentence containing physical or psychological objects. Contrary to a mereological analysis, the complex is not a sum of its elements: sentences about the elements are not sentences about the complex, or vice versa. Even though the transformed sentences are no longer about the complexes, something has to be preserved throughout the transformation. This is the extension (truth value) and Carnap calls the truth value “the logical value” (Carnap 1928/1998, sec. 32;50). The assigned truth values for the sentences before and after transformation will remain the same. Every true sentence about prime numbers will remain true after transformation. Because the object spheres are autonomous, something has to be lost through transformation. This is the epistemic value [Erkenntniswert] of a sentence. “This is the representational meaning of a sentence or its worth for knowledge” (Carnap 1928/1998, sec. 50).¹⁷

Through constitutional transformation of a propositional function the epistemic value of a sentence can be lost, since, once transformed, it becomes trivial or tautologous (Carnap 1928/1998, sec. 50). Carnap gives the example of the constitutional definition of a rattlesnake: a rattlesnake is an animal that carries a number of rattles at the end of its body. Sentences like “This animal which carries a number of rattles at the end of its body, is a rattlesnake”, once transformed, will result in a tautologous and trivial transformation like: “This animal which carries a number of rattles at the end of its body is an animal which carries a number...” (Carnap 1928/1998, sec. 50). The quasi-object of a rattlesnake can be replaced by a class of animals without an effect on the truth value of the sentence. This does, however, result in a change of the representational content of the sentence. “The constitutional method only concerns the logical value, not the epistemic value; it is purely logical, not psychological” (Carnap 1928/1998, sec. 50). The sign ‘rattlesnake’ adds

17 The notion of epistemic value is reminiscent of Frege: he uses the very same notion in his *Sinn und Bedeutung*. At the beginning of his famous paper Frege states that the epistemic value of “a=a” and “a=b” is different. This difference is related to the way the signs refer to the same object differently. Because the way the object is given through “a” and through “b” does not resemble each other, the equation “a=b” is a true contribution to knowledge according to Frege (Frege 1892/ 1997, 152). At the end of the paper Frege claims that the difference in epistemic value is related to the difference of meaning [Sinn] of “a” and “b” (Frege 1892/ 1997, 171). In the *Aufbau* Carnap similarly claims that an object “a” from a higher level of the system can be eliminated from the sentence with conservation of truth value (the same reference), as Frege also claimed. Such an elimination does, however, result in a loss of value for knowledge (different meaning).

some new transformational possibilities, e.g. one can use the newly introduced quasi-object “rattlesnake” to constitute higher-level concepts, such as subspecies of rattlesnake. The constitutional reduction of that sign “rattlesnake”, namely “animal which carries a number of rattles at the end of its body” does not have these features any more.

In the section on identity Carnap refers back to the difference between two values of a sentence: even though “the birthday of Sir A” and “22 March 1832” have the same reference or logical value, they do not share the same sense or epistemic value. While the constitutional system guarantees that the logical value remains stable throughout every transformation, the descriptions determined by the constitutional definitions “play an important role for scientific knowledge” (Carnap 1928/1998, sec. 159). What does this “importance” mean? Scientific questions are meaningful because “the signs in an answer are different from the signs in its question” (Carnap 1928/1998, sec. 159).¹⁸ In the example of the rattlesnake, the tautology loses its value for knowledge because the signs are no longer different.

Tellingly, the best illustration of the importance of constitutional definitions that introduce new signs and higher object levels can be found in a section on the autonomy of the cultural sphere; the domain for which there already existed sophisticated and controversial debates on its relation to the natural sciences or psychology.

In sec. 56 Carnap uses the difference between the two values of a sentence when he discusses the possible directions of constitutional rules for the cultural objects. “The meaning [Sinn] of the sentences about the cultural objects cannot be rendered within sentences about psychological objects (this is sometimes the case, but not always).” If the cultural complex of 'greeting' were composed out of psychological thoughts, then everything which can be said of 'greeting' could be said of thoughts. But this is not the case. 'Greeting' as a cultural object is characteristic of a larger social group of people, the psychological thoughts cannot be a characteristics of such a group, since they are by definition individual. It is the logical complex of greeting that enables one to speak over and beyond the merely psychological occurrences, even though the complex is constituted by certain psychological objects of the constitutional system. This constitution merely entails “the possibility of transformation in constitutional meaning, being the possibility of a transformational rule, through which the logical value remains unchanged, but not the epistemic value” (Carnap 1928/1998, sec. 56).

'Greeting' as an object of the cultural sphere can only be used as an argument in propositional functions of that sphere, but not in functions of lower levels. Nor can any of the objects from lower spheres be used as arguments in propositional functions about the cultural domain. Only the logical value of the sentences is maintained in transformation. The hierarchy of types within the constitutional system guarantees that the objects of every sphere can

18 Or, in Frege's words: “A difference [between epistemic values] can arise only if the difference between the signs corresponds to a difference in the mode of presentation of the thing designated” (Frege 1892/1997, 152).

only be used as arguments of the propositional function of that sphere. This, however, entails that every scientific discipline is limited to gathering knowledge about the objects of its own sphere. The constitutional definitions entail the possibility of the transformation of sentences, which in turn entails the incorporation of the objects in a logical, intersubjective system. This possibility does not entail the transformation of the objects themselves: greeting is not composed of psychic processes.

Carnap uses the difference between composition and constitution, and its related difference between the logical and epistemic value of sentence, to emphasize that cultural objects themselves are not reduced to psychological or physical objects. Only the sentences are transformed, which almost always entails a loss of epistemic value. Even though such remarks would also be possible for the psychological or physical objects vis-à-vis the elementary experiences, he specifically makes the remarks in the context of the *Geisteswissenschaften*. This is a clear sign that Carnap thinks the autonomy of the *Geisteswissenschaften* is an important epistemological desideratum for him. And it is at this point that his notion of epistemic value shows its greatest importance for Carnap's overall position on the unity of science in the *Aufbau*.

3 Manifestation and documentation

The *Aufbau* does not contain a particularly rich treatment of higher-level objects (e.g. the biological, psychological, etc.). Their constitution is not performed in logical-symbolic form, but focuses solely on the fundamental possibility of such a logical constitution (Carnap 1928/1998, sec. 139). To this end Carnap gives outlines of the constitutional rules that shape the higher levels of the system. Within these higher levels his discussion of the *Geisteswissenschaften* is not as sketchy as his discussion of the biological or psychological domain.

Carnap believes he can use the already available psychological and physical objects from lower levels of the constitutional system in order to constitute the cultural objects. Transforming propositions containing cultural objects into propositions containing already constituted psychological objects can be done through a *relation of manifestation* [Manifestationsbeziehung]. This is the relation between a cultural object and the psychological process in which the cultural appears or manifests itself (Carnap 1928/1998, sec. 24). Carnap uses the example of greeting twice as an illustration for this relation: the cultural custom of taking your hat off when you see someone you know, can be constituted using those psychological processes that 'manifest' that custom (Carnap 1928/1998, sec. 24, 150). Certain psychological dispositions manifest a cultural object, like a custom, while others do not. A *relation of manifestation* stipulates which dispositions, volitions, etc. manifest the cultural.¹⁹

¹⁹ Carnap remarks that a cultural object (e.g. a state) can persist, even though the individuals and the related psychological dispositions that manifest it have all been replaced (Carnap 1928/1998, sec. 24). This does not, however,

Carnap also offers a second route of constitution of the cultural domain, namely the *relation of documentation* [Dokumentationsbeziehung]. This is the relation between a cultural object (e.g. an art movement) and its document, being an enduring, physical object in which the cultural life is petrified (e.g. the physical aspects of a painting) (Carnap 1928/1998, sec. 24). Documents are the material witnesses [dingliche Zeugen] of the cultural. The documents of an art style for example can be paintings or sculptures. The documents of the railwaysystem can be its infrastructure and written timetables. However an object can only become a document with the aid of a manifestation.

However, the documentation of a cultural object necessarily takes place with the aid of a manifestation. For, if a physical object is to be formed or transformed in such a way that it becomes a document, a bearer of expression [Ausdrucksträger] for the cultural object, then this requires an act of creation or transformation on the part of one or several individuals, and thus psychological occurrences in which the cultural object comes alive; these psychological occurrences are the manifestations of the cultural object. (Carnap 1928/2003, sec. 55)

Here Carnap implies that a relation between a physical and a cultural object can only be stipulated when there are recognizable actors that use the object as if it manifests something cultural. The *Aufbau* contains no further explanation of this principle, but it shows that Carnap was sensitive to the difficulties of transforming a physical object into something culturally meaningful. The relation of documentation needs to show how the cultural comes alive through the merely physical based on certain mental states attributable to actors, which in turn, manifest the cultural. The physical domain does not, in itself, determine the cultural, but does determine the way an actor thinks and acts through the physical so that it becomes alive. Only the constitutive relations of manifestation and documentation turn the thoughts or actions of the actor into something cultural.

The central notion of manifestation stems from a dominant tradition of thinking about the cultural [geistige] in 19th century German philosophy. It is a relation between an expression [Ausdruck] and the cultural thing [eines Geistiges] that it manifests or expresses. The idea of a document as bearer of the expression of something cultural has its origins in Hegel's philosophy of the objective spirit: those documents are the material patterns of human interaction in which the spirit [Geist] objectifies itself. This vocabulary of an objectification of the Geist is explicitly taken over by Dilthey in his epistemology of the *Geisteswissenschaften*, but then without its metaphysical aspects (Dilthey 1910/1927, 7: 148-

imply that cultural objects have a different ontological or epistemological nature than physical or psychological objects. It merely entails that cultural objects can be manifested or documented through more than one specific psychological or physical object.

150).²⁰ Dilthey describes the objectifications as “manifestations of life” [Manifestationen des Lebens]. They are the realizations of the cultural in the empirical world. Every gesture, form of courtesy or work of art²¹ is related to a common structure that binds them, namely the cultural structure (Dilthey 1910/1927, 7:146). In sec. 23 Carnap stated that Dilthey's philosophy of history is the starting point for the understanding of the autonomy of the *Geisteswissenschaften* (cf. 2.2) and it seems he has taken this to heart. Not only does the notion of the cultural as a new level within the system of knowledge have clear allegiances with the contemporary debate on the *Geisteswissenschaften*, Carnap's use of the *relation of manifestation* and *documentation* also resonates with the specific language of those debates.

In a letter to Wilhelm and Elisabeth Flitner forty years after the publication of the *Aufbau* Carnap wrote that he never read anything by Dilthey, as far as he remembered (Gabriel 2004, 16–17). However, he does mention Dilthey's *Einleitung in die Geisteswissenschaften* in the bibliography of the *Aufbau*. If Carnap did not get the notion of manifestation from Dilthey himself directly, one might expect he got it from Diltheyian inspired philosopher Hans Freyer, whom he knew personally and must have read, given his very precise quotation in sec. 12. Manifestation is, however, not discussed in Freyer's *Theorie des objektiven Geistes*. Whether or not he actually read Dilthey, the first version of the *Aufbau* was written in an intellectual climate in which Dilthey was widely discussed and this might explain why Carnap seems to have been influenced by his ideas (Damböck 2012, 76).

4 Logic and Phenomenology of the Geisteswissenschaften

The range of possible cultural objects in the cultural domain of the *Aufbau* is extensive: engineering, economy, law, politics, language, art, science, religion, etc. (Carnap 1928/1998, sec. 151). In order to cope with the huge amount of possible cultural objects, Carnap makes a distinction between primary and secondary cultural objects. Whereas the primary objects are constituted through the available physical and psychological levels, using only relations of documentation or manifestation, the secondary objects use other cultural objects for their constitutional rules. (Carnap 1928/1998, sec. 150). It would be hard to constitute all the different objects of the cultural domain directly through manifestations or documentations. Carnap, therefore, divides the task for the constitution of the cultural domain into two separate programs. The *logic of the Geisteswissenschaften*, on the one hand, has to investigate which objects of the different fields can be constituted as primary or secondary. The investigation, on the other hand, how and which

20 Even though Dilthey explicitly mentions Hegel as a precursor of the notion of objectification of the Geist, Dilthey also distances himself from Hegel's theory that the cultural sphere evolved in line with one rational idea. “Hegel constructs metaphysically; we want to analyse the given.” (Dilthey 1910/1927, 7: 150)

21 Carnap's examples resemble Dilthey's: greetings as a form of courtesy and works of art as expressions of art movements (Carnap 1928/1998, sec. 24, 31 & 49). Other examples in the *Aufbau* include: the sociological concept of a state (sec. 4, 30, 151), religion (sec. 55) and the occurrence of the Trojan war (sec. 175).

psychological objects manifest the primary cultural objects is the task of the *Phenomenology [Phänomenologie] of the Geisteswissenschaften* (Carnap 1928/1998, sec. 150). Both investigations bear a resemblance to Dilthey's epistemology of the *Geisteswissenschaften*.

Carnap's call for a phenomenology of the *Geisteswissenschaften* is in line with one dominant strand of the contemporary theory of his time. Dilthey had already argued that the difference between the natural sciences and the *Geisteswissenschaften* should be understood *phenomenologically* because each type of science starts from a different kind of experience. While knowledge of nature should be grounded in sense perception, the knowledge of the socio-historical is grounded in lived experience [Erlebnis] (Beiser 2012, 328). A later manifestation of the same idea is present in the second study of Cassirer's *Zur Logik der Kulturwissenschaften* (Cassirer 1942/2011). There, Cassirer argues that the true difference between the two forms of science can only be understood by a phenomenology of perception [Phänomonologie der Wahrnehmung] which yields two different branches of perception: *Dingwahrnehmung*, the perception of objects in space and time, that is, the world of things or, *Ausdruckswahrnehmung*, the perception of physical objects as expressions of a person (Cassirer 1942/2011, 42). Constituting the physical as a bearer of expression is also exactly what a relation of documentation is supposed to do in Carnap's *Aufbau*.

In sec.150 Carnap states that the constitution of the cultural domain has to be understood, analogously to the constitution of the physical domain, from experiences [auf Grund der Erlebnisse]. As Alan Richardson has argued convincingly, the constitution of the physical out of the autopsychological domain in the *Aufbau* cannot be understood as a reduction of physical objects to objects of experience: the qualitative world of perception does not determine the mathematical world of physics. In order to reach the physical domain physical theory is required (Richardson 1998, 75). The experiential world does not determine which four dimensional world of state magnitudes is used in the physical world. This is a heuristic choice, based on simplicity (Carnap 1928/1998, sec. 136). The analogy that Carnap speaks of in sec. 150 cannot pertain to the specific constitution of state magnitudes from qualitative properties, since the cultural domain is not made out of mathematical magnitudes. So the analogy must concern the fact that the psychological thoughts do not determine their cultural manifestations completely. Just as the mathematical framework of the physicist transforms the state magnitudes, the theoretical apparatus of historians or art scholars will be needed to transform the psychological experience into cultural knowledge. Exactly how this theoretical apparatus achieves this task was, according to Carnap, still under debate. "The absence of a complete constitution of these objects, has its origin in the lack of a complete and systematic psychology or phenomenology of cultural knowledge, in contrast to that of perceptions" (Carnap 1928/1998, sec. 150). This absence is exactly why further investigation into a phenomenology of the *Geisteswissenschaften* is necessary, according to Carnap.

Carnap's position on the constitution of the cultural objects is also in line with important theorists of the cultural sciences like Dilthey and Cassirer, for whom the constitution of the cultural domain is not determined by the physical level. Instead, this constitution will require its own investigation into the relation between psychological objects and the cultural world they manifest. Certain objects from the psychological levels will be able to generate something else, or in Cassirer's own terms, "a new function appears in them", i.e. that of its cultural meaning (Cassirer 1942/2011, 46). It is important to stress that Cassirer's or Dilthey's specific use of phenomenology still differs from Carnap's. In the end Carnap refers to a program for a purely logical constitution of cultural objects as manifestations. No philosophical investigation of two strands of perception occurs in that program – as Dilthey or Cassirer would want it.²² All three would, however, give a similar epistemological evaluation of knowledge of the cultural: it is not reducible to the physical level. Only after the relation of manifestation logically constitutes the cultural object, is it possible to recognize certain psychological objects as manifestations of a cultural phenomenon. Psychological objects in themselves have no cultural content. This would also explain why Carnap emphasizes the autonomous characteristic of the cultural domain so heavily, whenever he talks about its constitution. E.g. the psychological experience of watching an opera or watching a musical may be very similar, while they have a clear different cultural meaning. They manifest something else, which is only so given the theoretical import from the constitutive definitions of the cultural level.

5 The role of *verstehen*

The *Aufbau* does not undertake a systematic discussion of a specific *methodology* of the *Geisteswissenschaften*. Instead, the work aims to give a theory of the logical analysis of the conceptual structure of science, rather than its experimental practice or empirical inquiry. *Verstehen*, which was typically understood as a central method for the *Geisteswissenschaften*, is, however, mentioned on the side. *Verstehen*, introduced by Dilthey, was at the time considered a procedure of understanding the meaning of actions, texts or objects from the past. In the *Aufbau* Carnap links the procedure of *Verstehen* to his conceptual analysis of the cultural sciences. This goes against the dominant view on early logical empiricists' position on *Verstehen*. According to this view logical empiricists took the method of *Verstehen* merely as a heuristic method: an imaginative process of intuition that generates some claim for the historian. The rational justification of this claim, however, remains unrelated to the heuristic (Uebel 2010, 293–296). Carnap first mentions the method in sec. 49 of the *Aufbau*.

In many cases, especially in the *Geisteswissenschaften*, when we are concerned, for example, with the

²² For a more detailed account of the differences between Carnap and Cassirer concerning this point, see (Mormann 2012, 161–164).

stylistic character of a work of art, etc., the indicators [Kennzeichnungen] are given either very vaguely or not at all. In such a case the decision as to whether a certain state of affairs obtains is not made on the basis of rational criteria but by empathy. Such empathy decisions are justly considered scientific decisions. The justification for this rests upon the fact that either it is already possible, even though very complicated in the individual case, to produce indicators whose application does not require empathy or else that the task of finding such indicators has been recognized as a scientific task and is considered as solvable in principle. (Carnap 1928/2003, sec. 49)

The method of empathy (later equated with *Verstehen* (Carnap 1928/1998, sec. 55)) is scientific, because it should always be possible to make the criteria explicit when, for example, the stylistic characters of a work of art obtain. The indicators [Kennzeichnungen] are the constitutional definitions of the cultural objects. These definitions state which physical states or psychological objects document or manifest cultural content. So while the initial recognition of a painting as an expressionist painting can be based on intuition, one should in principle always be able to rationally reconstruct this recognition.²³ If Carnap's account of *Verstehen* is merely a heuristic one, then the intuition should be completely separated from the rational reconstruction. This, however, is not the case. In sec. 55 he states that the method of empathy is completely determined by the character of the mediating objects from the lower levels. Specifying the constitutional structure and thus grounding the objective nature of the cultural object within the constitutional system is, according to Carnap, intimately entwined with *Verstehen*. Finding a path for the constitution of the object based on the *relation of manifestation or documentation*, is exactly what *Verstehen* does.

It is occasionally claimed that it is possible to recognize cultural objects without having to take a detour via psychological processes in which they manifest themselves or via physical documentation. But so far, such methods are not known to science and have not yet been applied. The *Geisteswissenschaften* recognize their objects [...] through "empathy" or *Verstehen*. But this intuitive procedure, without exception, begins with manifestations and documentations. Furthermore, it is not merely the case that intuitive understanding, or empathy, is occasioned by the recognition of the mediating psychological or physical objects, but its content is completely determined through the character of the mediating objects.

EXAMPLE. The awareness [Erfassung] of the aesthetic content of a work of art, for example a marble statue, is indeed not identical with the recognition of the sensible characteristics of the piece of marble, its

23 Carnap in the *Aufbau* seems optimistic about the possibilities to do this, since expressionism is mentioned as an example of a cultural object in sec. 31, alongside the constitution of a state.

shape, size, color, and material. But this awareness is not something outside of the perception, since for it no content other than the content of perception is given; more precisely: this awareness is uniquely determined through what is perceived by the senses. Thus, there exists a unique functional relation between the physical properties of the piece of marble and the aesthetic content of the work of art which is represented in this piece of marble. (Carnap 1928/2003, sec. 55)

Capturing [Erfassung]²⁴ the marble sculpture as an aesthetic art object is not independent from the constitutional definition of the art object. The constitutional definition stipulates which physical and psychological objects are manifestations of an art object and the act of *Verstehen* is similar, because it determines which physical and psychological objects manifest an aesthetic content. The implicit intuitive method thus always relies on the possibility to make the relation explicit between a cultural object and its physical or psychological expression.²⁵

Within the framework of the *Aufbau* the method of *Verstehen* is a methodological aspect of what Carnap calls the 'first' task of science: the construction of a constitutional system. This task has priority in the logical sense: it gives a full logical determination to the objects of scientific investigation (Carnap 1928/1998, sec. 179). The necessity of this logical investigation, however, should in no way keep science from engaging with higher level objects that have not yet been fully constituted, such as cultural objects, "if at least science does not want to abstain from those important fields which are meaningful for their practical application" (Carnap 1928/1998, sec. 179). In the real scientific process scientists are justified in using a merely intuitive constitution of their object, as long as they also have the task of giving a full logical characterization. Carnap's call for a phenomenology of the *Geisteswissenschaften* is specifically directed towards this last task.

At first, one might consider that this integration of the intuitive *Verstehen* in the non-intuitive constitutional framework runs counter to Dilthey's original conception of *Verstehen*. In his *Aufbau der geschichtlichen Welt in die Geisteswissenschaften* Dilthey states that *Verstehen* is based on the relation between what expresses and that which it expresses. And this relation cannot be represented by "formulas of logical powers" [Formeln logischer Leistungen] (Dilthey [1910a] 1927, 7:218). He does not, however, exclude the possibility of a logic of the *Geisteswissenschaften*

24 Dilthey specifically uses the related verb "erfassen" to describe the recognition of the object under study within its cultural interconnections. It is the second phase of the *Verstehen* process, notably after the enquirer has relived the object in his intuition (Dilthey 1927b, 313). One could thus reconstruct the "Erfassung" without the imaginary procedure that generated it.

25 In his overview of *Verstehen* in orthodox logical-empiricism, Uebel mainly uses Carnap's *Scheinprobleme in der Philosophie* (Uebel 2010, 293–296). Uebel focusses on Carnap's reductionary behaviourism as outlined in both *Scheinprobleme* and the *Aufbau*. In the *Aufbau*, however, *Verstehen* is understood as a procedure of capturing the cultural content of an expressive thing. (cf. my quotation from sec. 49 and sec. 55) *Verstehen* is not discussed in paragraph sec. 57 on the relation between physical and psychological objects that Uebel treats in his paper. *Scheinprobleme*, moreover, does not contain any position on *Verstehen* as a method of the *Geisteswissenschaften*.

[Logik der Geisteswissenschaften].²⁶ Such a logic should investigate rules that assess the possibility of general principles concerning the relation between a physical or psychological expression and the cultural that it expresses. This is, of course, exactly what Carnap's relation of manifestation is supposed to do. According to Dilthey, this logic would yield the method of *Verstehen* as a form of induction. This induction would not generate a law, but a structure that takes the individual as part of a meaningful whole (Dilthey [1910a] 1927, 7:220).²⁷ Thus, a non-intuitive account of *Verstehen*, is also present in Dilthey's own work. Again, we see a convergence between Dilthey's and Carnap's position.

6. Where does the philosophy of science loose the cultural sciences?

The *Aufbau* is a work where contemporary philosophical and societal tensions manifest themselves. One of those potential tensions is the opposition between the idea of logical unity on the one hand and respect for the autonomy of the *Geisteswissenschaften* on the other hand. Carnap tries to dissolve this tension in four various ways. First he believes that his structuralist position on the scientific concept can be used to solve a long-standing debate on the logical nature of individual concepts in the cultural sciences. Second, he employs a notion of epistemic value to emphasize that the *Geisteswissenschaften* have the same disciplinary autonomy as psychology or the natural sciences within the overall constitutional system. Third, he incorporates Dilthey's central notion of manifestation in his account of cultural objects, and also uses the specific terminology of phenomenology to label the search for the relations of manifestation that constitute the primary levels of the cultural domain. Lastly, *Verstehen* as a central methodology is also understood as a non-intuitive procedure that is important for scientific development, and this again resembles Dilthey's position.

In his later works Carnap never explicitly returns to the epistemological tensions specific to the *Geisteswissenschaften* debate. Neither a specific phenomenology, nor a specific logic of the *Geisteswissenschaften*, or a non-intuitive account of *Verstehen* are ever mentioned again. Three years after the publication of the *Aufbau*, in 1931, Otto Neurath is very explicit in denying any room for an autonomous treatment of the *Geisteswissenschaften*. There can be no dualism between the natural and the cultural sciences (Neurath 1931, 407).

Sociology is not a "Geisteswissenschaft" or "Geistwissenschaft" (Sombart), which is in any fundamental opposition to any other type of science, the natural sciences. Instead, it is part of unified science as social behaviorism. (Neurath 1931, 409)

26 Throughout this paper the term logic has been used ambiguously, both in an epistemological sense and in a formal sense. When Dilthey, Windelband or Rickert use this term they consider it as an epistemological term related to the formation of scientific concepts. Carnap in the *Aufbau*, however, uses the term mainly to denote formal aspects of propositions, even though this formal analysis still has some epistemological meaning in the *Aufbau*.

27 For a recent defense of the non-intuitive reading of Dilthey's theory of *Verstehen*, see (Beiser 2012, 351).

We know from Carnap's diaries that Neurath personally conversed with Carnap on 19 December 1929, specifically on the Diltheyian notions like “Manifestation” in the *Aufbau*, which were too idealist for Neurath.²⁸ Carnap refers to Neurath's position in his 1931 paper on the unity of science and abandons the terminology of “Geisteswissenschaften” completely. Only “(empirical) sociology in the widest sense, containing the historical, cultural and economic processes” can be maintained (Carnap 1931, 451).

So it is clear that sociology does not treat of anything but situations, events, patterns of conduct of groups or individuals (men or other animals), reciprocal reactions and reactions on events in the environment.²⁹ (Carnap 1931, 451)

As in the *Aufbau*, Carnap states that the sociological sentences need to have a criterion for translation into sentences containing nothing but psychological or physical objects. In contrast, however, to the *Aufbau* there is no mention any more of the specific autonomy of the field of sociology widely conceived. Nor does he mention the specific problem of the logic of individuality. The crucial *relations of documentation* and *manifestation* are completely absent as well. The idea that the cultural as an autonomous sphere is expressed through the physical or psychological objects is abandoned: there is no more talk of social customs, art movements or political structures, only reactions to environmental circumstances. The epistemological problems that were generated by the *Geisteswissenschaften* in the *Aufbau* have all vanished.

When in 1938, Carnap wrote an article on the unity of science in English, he used the term “social sciences and the so-called humanities”. The specific idea of a translation of sentences containing objects of those fields into sentences containing only physical and psychological objects is rephrased by Carnap in the following terms:

The conditions for the application of any term can be formulated in terms of psychology, biology, and physics, including the thing-language. Many terms can even be defined on that basis, and the rest is certainly reducible to it. (Carnap [1938] 1991, 402)

Ten years after the publication of the *Aufbau* almost nothing is left of the initial contribution to the problem of the *Geisteswissenschaften*, where Carnap thinks he can overcome the problem of individuality through relational logic, defends the autonomy of the field, incorporates the method of *Verstehen* and sets out a research program for a

28 See the entry of 19 December 1929 in RC 025-73-03: Rudolf Carnap Papers, 1905-1970, ASP.1974.01, Special Collections Department, University of Pittsburgh. I accessed the diaries via the website of Christian Damböck's project. “Early Carnap in Context. Three Case Studies and the Diaries.” 2015. Accessed December 10. https://homepage.univie.ac.at/christian.damboeck/carnap_diaries_2015-2018/index.html.

29 The translation is my own.

phenomenology of the *Geisteswissenschaften*.

This neglect is reflected in the early critiques of logical empiricism - and of Carnap specifically- raised by important philosophers of the cultural sciences, like Horkheimer and Cassirer. They argued that Carnap's philosophy was fundamentally incapable of dealing with the cultural sciences, because it set out to reduce all the concepts of those sciences to either relations between sense data, or to concepts of physics.³⁰ Both types of reductions, according to them, destroy the epistemic content that is proper to the cultural concepts. Horkheimer points out that man and society cannot be analyzed as sums of things or events and the effects of these sums on each other. The meaningful world of volitions, wishes, feelings and ideas that interact with each other, should, according to Horkheimer, also be subjects of some type of knowledge. In Horkheimer's account, Carnapian epistemology reduces man to the mereological sum of physical properties and leaves no room for man's meaningful world (Horkheimer 1937, 23–24). Ernst Cassirer criticizes Carnap in a similar vein. Carnap's epistemology implies that all science must be translatable to a physical language, he says. But, if this were the case, then every object would only be characterized through its physical properties. Thus, the meaning of the cultural object will be lost (Cassirer 1942/2011, 44–45). A religion will be constituted by its physical properties, but the “meaning” of its sacrifices and prayers cannot be accounted for (Cassirer 1942/2011, 46). For Cassirer the cultural sciences explicitly aim to go beyond what mere factual experience can yield, and thus Carnap's epistemology will necessarily come out short for any analysis of the cultural sciences.

Horkheimer and Cassirer reacted to a version of logical empiricism that became more prominent in the thirties and did not take into account the epistemological aspects of cultural manifestation, or *Verstehen*, which were present in the *Aufbau*. Within ten years' time the potential for fruitful integration of the various philosophical programs that was present in the *Aufbau* had vanished. After the Second World War attention to the question of the specificity of the cultural sciences had completely disappeared as a topic in mainstream philosophy of science. Explaining how and why this change occurred, requires more research. One could speculate that the death of both Zilsel and Neurath, by the end of the Second World War, must have contributed to this disappearance. As specialists from the disciplines they were expected to integrate debates from the cultural sciences into the philosophical agenda of the movement. Also, the fact that, during the 1930's, logical empiricists gradually averted their intellectual gaze away from the old continent and its

30 Horkheimer and Cassirer are not always very clear which Carnapian theory that they are attacking, the phenomenalist or physicalist theory. Cassirer refers to Carnap's physicalist position in Carnap's *Universalsprache der Wissenschaft* from 1931, where every valid scientific sentence needs to be reducible to a sentence in physicalist language (Cassirer 1942/2011, 44). A paragraph earlier, Cassirer, however, also points to the phenomenalist reduction of all knowledge to purely quantitative sensory qualities (Cassirer 1942/2011, 43). Similarly, Horkheimer switches between the phenomenalist (Horkheimer 1937, 12) and physicalist reduction (Horkheimer 1937, 18). For a more detailed account of Horkheimer's critique of logical-empiricism in his 1937 article, see (Hans-Joachim Dahms 1998; O'Neill and Uebel 2004). The general divergence between Cassirer and Carnap has been treated in (Friedman 2000, chap. 7; Mormann 2012; Ikonen 2011).

epistemological debates on the *Geisteswissenschaften* might have contributed to this change. While post Diltheyian Germany was dominated by ideas like manifestations of the cultural, the philosophical reflection on historiography and related disciplines was comparatively weak in the United States.

This article merely intended to show that a change did occur, one that may have had a major impact on the current exclusion of the cultural sciences from the scope of the philosophy of science. The disappearance of the cultural sciences and their epistemological problems from the agenda of logical empiricism is reflected in Horkheimer and Cassirer's critical remarks. While Carnap in the *Aufbau*, Cassirer and Horkheimer still share philosophical concerns, their philosophical successors in many cases lacked a shared background to enable a fruitful debate about the cultural sciences.

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