Quine and the Vienna Circle

Rui Silva

Carnap was my greatest teacher (…). I was very much his disciple for six years. In later years his views went on evolving and so did mine, in divergent ways. But even where we disagreed he was still setting the theme; the line of my thought was largely determined by problems that I felt his views presented.

Quine, *Ways of Paradox*

Quine's philosophy must be reconstructed as an attempt of a synthesis between the different theoretical orientations of Rudolf Carnap and Otto Neurath.

Koppelberg, *Die Aufhebung der analytischen Philosophie: Quine als Synthese von Carnap und Neurath*

1. Introduction

The influence of logical positivism on Quine's philosophy is indisputable, and Quine himself confessed that Carnap was his major philosophical influence. However, Quine was also a very influential critic of logical positivism. The title of a book from Dirk Koppelberg expresses well the nature of the relation between Quine and the logical positivism: *Die Aufhebung der analytischen Philosophie: Quine als Synthese von Carnap und Neurath*. The German word *Aufhebung* is, with its Hegelian overtones, particularly appropriate in this context, because Quine tried to overcome the partly antithetical positions of Neurath and Carnap, preserving what he considered to be their correct insights. From Neurath, Quine adopts his fallibilism, coherentism and holistic conception of science; and from a long philosophical

dialogue with Carnap, Quine developed not only a critique of the analytic/synthetic distinction, but also his thesis of the indeterminacy of translation. My analysis of the relation between Quine and the Vienna Circle will focus on two major problems: the critique of analyticity and the nature of observation sentences.

Before analysing the connection between Quine and the Vienna Circle, it is important to clarify the meaning of Quine's naturalism and its implications for his conception of philosophy. Quine's philosophy departs from physicalist premises. He not only says that «*nothing happens in the world (…) without some redistribution of microphysical states*» [QUINE 1981, 98], but goes further and claims that «*where positions and states of bodies do not matter, there is no fact of the matter*» [QUINE 1979, 162]. As a result, his physicalism entails at the anthropological level that «*we are physical denizens of a physical world*» [QUINE 1995, 16]. One of the most significant consequences of his naturalism is the rejection of a *first philosophy* or *prior philosophy*, understood as a conceptual activity separated from the factual investigations of science. The following passage clearly illustrates this point:

> I hold that knowledge, mind, and meaning are part of the same world that they have to do it, and that they are to be studied in the same empirical study that animates natural science. There is no place for a prior philosophy [QUINE 1969, 26].

Quine's defence of naturalism and physicalism is one of the main affinities between him and the Vienna Circle. One must remark, however, that Quine did not accept the conception of philosophy advocated by many members of the Vienna Circle, according to which philosophy is a logical and conceptual activity that should be distinguished from science. In Schlick's words, for instance, science establishes the truth of propositions whereas the task of philosophy consists in clarifying their meanings. However, a representative of the Vienna Circle exerted a clear influence on Quine's thesis of the continuity between philosophy and science – Neurath:

> I see philosophy not as an *a priori* propaedeutic or groundwork for science, but as continuous with science. I see philosophy

and science as in the same boat – a boat which, to revert to Neurath's figure as I often do, we can rebuild only at sea while staying afloat in it. There is no external vantage point, no first philosophy [QUINE 1969, 126-7].

The comparison between science and a boat that is rebuilt at sea is present, as we will see, in Neurath's influential article 'Protocol Sentences', where he endorses a holistic view of science according to which any proposition can be revised or abandoned in order to preserve the coherence of the system. In opposition to foundationalist theories of knowledge, Neurath refused to conceive of observational statements as firm foundations of science and even claimed that a sentence can only be justified by another sentence, rejecting thereby the idea of confronting sentences with a non-linguistically interpreted reality. Neurath's image of a science as a boat is significant: architectonic metaphors point to foundationalist epistemologies, whereas nautical metaphors point to a coherentist epistemology (which is present in the writings of both Neurath and Quine).

2. The analytic/synthetic distinction

Carnap's account of the analytic/synthetic distinction played a very important role in the development of Quine's philosophical work. Before assessing Quine's critique of this distinction, it is necessary to consider its meaning and role in Carnap's thought. One of his favourite strategies to dissolve traditional metaphysical problems was to reduce them to a choice between different languages. His critique of the realism/anti-realism controversy provides a good illustration of this point. Some members of the Vienna Circle considered that science required a defence of realism, understood as a metaphysical thesis that affirms the existence of an external reality, but Carnap claimed that the dispute between realists and anti-realists boils down to a choice between a realist and a non-realist language. This choice is ultimately based on pragmatic grounds, because there is not a fact of the matter underlying this metaphysical debate; we simply choose the most

adequate language for our purposes. In the case of science, we choose a realist language (on this issue, see CARNAP 1956, 43 and 206-213). In this context, we should bear in mind Carnap's defence of his well-known *Principle of Tolerance*, according to which «*in logic, there are no morals*» [CARNAP 1937, 52] and anybody is entitled to build one's own logic or language, provided that one states explicitly the respective rules. The idea was, in Carnap's words, to «*give syntactical rules instead of philosophical arguments*» [CARNAP 1937, 52].

The *Principle of Tolerance* points to Carnap's important distinction between internal and external questions. Internal questions are those questions that can be formulated and answered within the framework of a specific language. Scientific questions, for instance, are internal questions in the sense that, once accepted the language of a specific scientific discipline, there is a set of rules that allows the formulation of questions and provide the criteria to settle them. External questions, like the question «*Is there an external reality?*», are not cognitive questions because they amount to a pragmatic choice between different languages. External questions are simply questions about what set of linguistic or logical rules one should accept, whereas internal question presuppose an already established set of rules that allow rational discussions and agreements.

It is precisely the notion of language-constitutive rules that led Carnap to give to the analytic/synthetic distinction a fundamental role in his epistemological reflections. Some propositions (the analytic propositions) have a privileged epistemic status, because they express or follow from the rules that constitute a language. These language-constitutive rules may be chosen by convention, but once chosen, they fix the meaning of the terms and create thereby a class of propositions that are true (or false) in virtue of meaning. Such an account of analytic propositions offered to Carnap (and to other members of the Vienna Circle) an elegant solution to a problem that had haunted the empiricist tradition for centuries, namely the problem to reconcile the empiricist principle that all knowledge comes from sense experience with the existence of knowledge in the field of logic and mathematics. J. S. Mill, pushing empiricism to its limits, claimed that logic and mathematics are based on empirical experience, but the huge difficulties of grounding these

disciplines in sense experience discredited Mill's strategy. The notion of analytic propositions as expressions of language-constitutive rules allowed logical positivists to provide an account of mathematical and logical knowledge that does not ground it in experience and does not appeal to mysterious cognitive faculties. The propositions of logic and the theorems of mathematics are true because they are a consequence of the rules that constitute a language.

This account of the analytic propositions was also essential for Carnap's conception of philosophy. The Vienna Circle cultivated the ideal of a scientific philosophy, but this ideal did not entail the dissolution of the borders between science and philosophy. On the contrary, Carnap was adamant in claiming that philosophy is not an empirical discipline; philosophy was conceived of as a logical analysis of the cognitive or scientific language, an analysis aimed at conceptual clarification and at the specification of syntactic and semantic rules.

Quine's critique of the analytic/synthetic distinction started in the 1930s. In papers like 'Carnap and Logical Truth' and 'Truth by Convention', he argued that it is useless to ground logic in conventions because, among other reasons, we need logic to draw inferences from conventions. According to Quine's early writings on this subject, any attempt to clarify the meaning of logical terms on the basis of conventions would be hopeless, because everyday communication and the establishment of such conventions presuppose already a mastery of the meaning of the logical terms. Against the claim that conventions are simply recognized or detected in the linguistic behaviour, Quine remarks that such an account of conventions does not fit our common understanding of conventions as something that is explicitly adopted. Moreover, it is not possible to distinguish between conventions and deeply entrenched beliefs [QUINE 1966, 105-6].

It is not totally clear whether the target of his critique was really Carnap; according to the standard interpretation, it was, but some recent work on Carnap and Quine has disputed this interpretation claiming that Quine was simply attacking a position that could be suggested by or associated with the logical positivism (see, e.g., EBBS 2011).

At any rate, Carnap is clearly one of Quine's targets in his famous article 'Two Dogmas of Empiricism', where he develops two argumentation lines against analyticity. Firstly, Quine claims that analyticity belongs to a circle of interdefinable but equally obscure notions, like synonymy, necessity and semantical rules. One of the first accounts of analyticity that Quine rejects is based on a conception of analytic statements as *«statements whose denial are self-contradictory»* [QUINE 1953, 20]. He objects that the intended sense of self-contradiction (as distinct from the strictly logical-syntactic sense) is an obscure notion, as obscure as the very notion of analyticity.

Another attempt to explain analyticity is based on the notion of synonymy. Meaning and synonymy are interdefinable notions: meaning can be identified with a class of synonyms and synonymy, in turn, can be conceived of as sameness of meaning. Because analytic statements can be characterized as statements that are true in virtue of meaning, analyticity could be adequately explained if we could give a clear sense to the notion of synonymy. In fact, as Quine himself admits, analytic statements are either logical truths or statements reducible to logical truths by substituting synonyms [QUINE 1953, 22-23]. To use Quine's example, the sentence 'No bachelor is married' is reducible to a logically true sentence by replacing 'bachelor' with 'unmarried man'. According to Quine, however, synonymy is as obscure as analyticity itself. It is tempting to explain synonymy in terms of definitions, but Quine rejects this strategy. First, what he calls *«discursive definitions»* [Quine 1976, 118-9], far from explaining synonymy, are based on already established synonymy relations; it is the type of definitions that is the object of the lexicographer's work. *«Legislative definitions»* consist in the introduction of a new term, but in these cases the synonymy is created artificially, by convention. There is an intermediate type of definitions, explications, which clarify the meaning of a term; they rely, again, on already existent linguistic use and its synonymy relations.

In a similar vein, Quine rejects another attempt to explain analyticity, one that is based on the idea of interchangeability of terms or expressions *salua ueritate*; two terms or expressions would be synonymous if we could replace one another without affecting the truth value of the sentences where they

occur. But such an attempt fails because two expressions may be, in fact, extensionally equivalent and have, nevertheless, different meanings. If one tried to complement this strategy with appeals to *necessity*, one would be introducing a notion that presupposes a previous understanding of what analyticity is.

From the standpoint of Quine's dialogue with Carnap, the most interesting attempt to define analyticity is the one that involves the notion of semantical rules. As we have seen, logical positivists conceived of analytic statements as statements that express the conventions and rules that govern a language. At the level of artificial languages, we can stipulate, indeed, that a certain statement is analytic, but by doing so we are merely presupposing the notion of analyticity. We can clarify Quine's point with a reference to Carnap's reflection on analyticity in his *Introduction to Semantics*. Carnap proposed there the following adequacy condition for a definition of analyticity: the sentence S_i is analytic (L-true) in S if the sentence 'S_i is true in S' was L-true in the metalanguage [CARNAP 1942, 61]. Against such attempts, Quine complains that «*here the difficulty is simply that the rules contain the word 'analytic', which we do not understand!*» [QUINE 1953, 33].

Another Carnapian attempt to clarify analyticity is present in *Meaning and Necessity*, where he proposes the following convention:

> A sentence S_i is L-true (analytic) in a semantical system *S* if and only if S_i is true in *S* in such a way that its truth can be established on the basis of the semantical rules of the system *S* alone, without any reference to (extralinguistic) facts [CARNAP 1956, 10].

Quine's basic reply to this proposal is that «*we are now appealing to an unexplained phrase 'semantical rule'*» [QUINE 1953, 34]. We could, at most, specify the set of analytic statements for language$_1$ or for language$_2$. Quine argues that without a general concept of semantical rules, it is a vacuity to claim that analytic propositions are propositions that follow from the semantical rules of a language; in fact, from the set of true sentences of a language, one can arbitrarily select some of them as semantical rules. The

phrase 'semantical rule' was left unexplained in Carnap's work and for that reason it cannot help us understand analyticity [QUINE 1953, 33-34].

In sum, the notion of analyticity is enclosed in a circle of interdefinable and equally obscure intensional notions (synonymy, definition, necessity, semantical rules). However, the absence of a satisfactory account of analyticity is not, by itself, a powerful argument against the notion; Grice and Strawson (1956) remarked that we cannot infer from the fact that a concept or distinction resists to a rigorous definition that its use is illegitimate. At any rate, Quine follows in 'Two Dogmas of Empiricism' another argumentative line against the analytic/synthetic distinction. This second strategy was motivated by an apparently plausible account of analyticity, based on a verificationist theory of meaning, according to which «*the meaning of a statement is the method of empirically confirming and infirming it*». On the assumption that «*an analytic statement is that limiting case which is confirmed no matter what*» [QUINE 1953, 37], we could have a criterion to distinguish between analytic and synthetic statements. We could also legitimize the notion of synonymy: two statements would be synonymous if they had the same method of confirmation. Against this attempt, Quine, following in this context a famous thesis from Pierre Duhem, claims that «*our statements about the external world face the tribunal of sense experience not individually but only as a corporate body*» [QUINE 1953, 41]. The Duhem thesis entails what is called a confirmation holism, which is opposed to the reductionist view that each statement has its own empirical content and can be tested in isolation from other statements [cf. QUINE 1953, 41]. This thesis has far-reaching consequences that were not adequately assessed by the members of the Vienna Circle. Carnap accepted confirmation holism and the idea that any scientific statement can be changed or abandoned [cf. CARNAP 1937, 318], but he underestimated the challenge that these points raise for the analytic/synthetic distinction; in opposition to Quine, he continued to endorse a distinction between factual and meaning-constitutive statements.

According to Quine, the confirmation holism (the so-called Duhem-Quine thesis) undermines the analytic/synthetic distinction. In fact, if it is not possible to test isolated hypotheses, but only a system of hypotheses, in the

presence of recalcitrant evidence there are many possible ways to modify a theoretical system in order to preserve its agreement with experience. Against traditional accounts of analyticity, Quine argues that no statement is immune to revision; in the limit, even principles of logic may be revised. On the other hand, any empirical statement can be preserved, by making adjustments in other parts of the system:

> It becomes folly to seek a boundary between synthetic statements, which hold contingently on experience, and analytic statements, which hold come what may. Any statement can be held true come what may, if we make drastic enough adjustments elsewhere in the system. (…) Conversely, by the same token, no statement is immune to revision. Revision even of the logical law of the excluded middle has been proposed as a means of simplifying quantum mechanics [QUINE 1953, 43].

This critique of the analytic/synthetic distinction leads to a critique of the distinction between conceptual and factual investigations. Accordingly, Quine rejected the conception of philosophy advocated in the Vienna Circle as a conceptual investigation essentially devoted to an analysis of the scientific language. With his proposal of a *«naturalized epistemology»*, Quine establishes a continuity between science and philosophy; philosophical questions can be distinguished from scientific questions only because of their higher degree of generality. From the standpoint of *«naturalized epistemology»*, epistemology becomes a part of the natural science, and not a supra-scientific tribunal that validates our cognitive processes. It should be noted that Neurath had also pointed in the direction of a naturalized epistemology:

> …it becomes clear that within a consistent physicalism there can be no 'theory of knowledge,' at least not in the traditional form. (…) Many of the problems of the theory of knowledge will, perhaps, be transformed into empirical questions in such a way that they can be accommodated in unified science [NEURATH 1959a, 292].

The rejection of the analytic/synthetic distinction raises, however, a problem: how can we justify, from an empiricist standpoint, the privileged status of logic and mathematics? According to Quine, these disciplines have, indeed, a special status, not because of some epistemic privilege, but simply because they have a central position in the system of science; changes in logic and mathematics may have a serious and subversive impact in the field of science, and for this reason they are relatively immune to revision.

3. The indeterminacy of translation thesis

Quine's critique of the analytic/synthetic distinction culminates in his famous thesis of the indeterminacy of translation. Once again, Quine's thought was stimulated by Carnap who had attempted, in a 1955 paper with the title 'Meaning and Synonymy in Natural Languages', to show that the analytic/synthetic distinction was empirically legitimate. In this article, Carnap claimed that it is possible to determine the reference or extension of the words uttered by a speaker of an unknown language in light of the observable circumstances of his utterances. Furthermore, Carnap also claimed that, once the extensions are fixed, we could formulate hypotheses concerning the intensions and test them by observing the speaker's linguistic behaviour [CARNAP 1956, 237]. Meanings and intensions would be, therefore, scientifically respectable.

The Carnapian scenario of radical translation (the translation of a totally unknown language) attracted immediately Quine's attention. In 'Two Dogmas of Empiricism' he had expressed his scepticism regarding the notion of synonymy; the scenario of radical translation allowed Quine to develop his critical analysis of synonymy. In spite of being again inspired by Carnap, Quine claims that both extensions and intensions are indeterminate. Firstly, and in accordance with his naturalism and linguistic behaviourism, he claims that «*there are no meanings, nor likenesses nor distinctions of meaning beyond what is implicit in people's dispositions to overt behaviour*» [QUINE 1969, 29]. Secondly, he claims that the linguistic behaviour is not sufficient to determine

meanings, in the sense that the totality of a speaker's dispositions for linguistic behaviour is compatible with *n* translation manuals that are mutually incompatible:

> The thesis is then this: manuals for translating one language into another can be set up in divergent ways, all compatible with the totality of speech dispositions, yet incompatible with one another [QUINE 1960, 27].

It should be noted that Quine has a very restrictive conception of the available evidence; it consists of (1) sounds produced by the speakers, (2) the circumstances of the production of these sounds and (3) reactions of assent of dissent to questions asked by the translator. The reference of terms is indeterminate, as his Gavagai example shows; *gavagai* can be translated by *rabbit*, but also by *undetached rabbit part* or *rabbit* stage. The choice is pragmatic, because there is not a fact of the matter. Quine replaces the traditional notion of meaning with its behaviourist *ersatz*, stimulus-meaning, which consists, on the one hand, of the set of circumstances that trigger the speaker's assent to a sentence and, on the other hand, the set of circumstances that trigger the speaker's dissent. The translation of sentences (taken as wholes) is also indeterminate. From the impossibility of determining synonymy relations and criteria of identity of meanings, and in light of the principle that there is no entity without identity, Quine concludes that intensional entities are illegitimate. His thesis of the indeterminacy of meaning is, as he himself recognized, an attack against the Fregean notion of *Gedanke* and the Carnapian notion of proposition:

> My thought experiment in radical translation, in *Word and Object*, was meant as a challenge to the reality of propositions as meanings of cognitive sentences. Since there is no entity without identity, no reification without individuation, I needed only to challenge *sameness* of meaning of cognitive sentences [Quine 2000, 419].

In *Meaning and Necessity*, Carnap had defined the intension of a singular term as an individual concept or as a description that picks out uniquely the

designated object, and the intension of sentences as propositions, which were understood as the content expressed by a declarative sentence and as «*objective, non-mental, extra-linguistic entities*» [CARNAP 1956, 25]. Quine's critique of analyticity and his thesis of the indeterminacy of translation are based precisely on a rejection of meanings as self-subsisting entities;

> Translation is not the recapturing of some determinate entity, a meaning, but only a balancing of various values [QUINE 1975, 322].

4. The nature of observation sentences

The second major problem that is at the centre of the relation between Quine and the Vienna Circle concerns the nature of observation sentences. Quine struggled in his work to offer an adequate account of the nature of observation sentences, and this struggle can be considered as a follow-up of the important but inconclusive debate on the so-called «*protocol sentences*» that took place in the Vienna Circle. Protocol sentences, understood as records of the content of our sense experience, were supposed to be the empirical basis of science, the checkpoints of empirical knowledge or the bridge between language and experience. The importance of protocol sentences was clearly recognized by the members of the Vienna Circle, but there was no agreement on the nature and status of these sentences.

One of the leading members of the Vienna Circle, Moritz Schlick, proposed an account of protocol sentences influenced by a foundationalist account of knowledge. Schlick's epistemological ideal was to provide an *absolute certainty* and an *unshakeable foundation* to human knowledge [SCHLICK 1959, 209]. He was aware of the fallibility of scientific hypotheses and even of protocol sentences [SCHLICK 1959, 212], and for this reason he appealed to what he called *Konstatierungen*, which are not proper protocol sentences, but statements of the *form* «*Here is yellow*» [SCHLICK 1986, 232], which grasp the immediate experience and constitute the «*unshakeable point of contact between knowledge and experience*» [SCHLICK 1959, 226]. However, as

intermediaries between language and experience, *Konstatierungen* are awkward entities. They cannot be written down, because the direct contact with experience would be thereby lost [cf. SCHLICK 1959, 226]. They are the starting point of science and also what makes it possible to verify the empirical knowledge, but they are not proper parts of science [SCHLICK 1986, 232]. They are synthetic statements, but also incorrigible and non-hypothetical [cf. SCHLICK 1959, 223 and 227]. In sum, Schlick's epistemological project is somehow paradoxical; he claims to have found a *fundamentum inconcussum* for science that is alien to the system of science.

Neurath, on the contrary, proposed an account of protocol sentences based on a coherentist epistemology, according to which a sentence can only be justified by another sentence and not by subjective experiences:

> It is always science as a system of statements which is at issue. *Statements are compared with statements*, not with *experiences*, [*Erlebnisse*], *the world*, or anything else. All these meaningless *duplications* belong to a more or less refined metaphysics and are, for that reason, to be rejected. Each new statement is compared with the totality of existing statements previously coordinated. To say that a statement is correct, therefore, means that it can be incorporated in this totality [NEURATH 1959b, 291].

According to this coherentist epistemology, it is hopeless to ground the scientific knowledge on an extra-scientific and extra-linguistic basis. It is equally impossible to pick out a set of privileged, unrevisable propositions:

> There is no way of taking conclusively established pure protocol sentences as the starting point of the sciences. No *tabula rasa* exists. We are like sailors who must rebuild their ship on the open sea, never able to dismantle it in dry-dock and to reconstruct it there out of the best materials [NEURATH 1959a, 201].

> The fate of being discarded may befall even a protocol sentence. No sentence enjoys the *noli me tangere* which Carnap ordains for protocol sentences [NEURATH 1959a, 203].

Schlick objected that Neurath's coherentism threatened empiricism [SCHLICK 1959, 214-216], but Neurath did not share Schlick's foundationalist worries; according to Neurath, «*the possibility of science is demonstrated by the existence of science*» [NEURATH 1959a, 285].

Carnap attempted to steer a middle course between, on the one hand, Schlick's foundationalism and phenomenalism and, on the other hand, Neurath's coherentism and physicalism. In *Der logische Aufbau der Welt*, Carnap had developed an ambitious empiricist project whose goal was to ground human knowledge on our immediate experiences (*Elementarerlebnisse*). The project required the construction of a phenomenalist language that could be used to describe our immediate, subjective experiences. Physical objects were not immediately given, but should be constructed on the basis of our sense experiences. When Carnap took part in the debate on protocol sentences, in the early 1930s, he advanced two major theses:

1) there is a pure protocol language, uncontaminated by scientific theories;

2) protocol sentences are incorrigible and do not require verification.

However, he tried to accommodate Neurath's critique of phenomenalism, by claiming that the protocol language was translatable into a physicalist language [cf. CARNAP 1932]. He eventually came to the conclusion that there are no incorrigible statements in science, conceding thereby a major point to Neurath. At any rate, the debate on protocol sentences did not bring about a real clarification of the relation between observation and theory.

Quine was also deeply interested in clarifying the nature of observation sentences. He presented them as a sub-set of occasion sentences, sentences that are true in some occasions but not in other ones. More precisely, «*an observation sentence is an occasion sentence on which speakers of the language can agree outright on witnessing the occasion*» [QUINE 1992, 3]. With this definition Quine recognizes the subjective aspect of such sentences (the fact that they depend on the stimulation of our senses) and their intersubjective character, which makes the objectivity of science possible. Quine sometimes emphasized the subjective dimension of observation sentences and on certain

moments stressed their social dimension. He finally decided to ground the undeniable social aspect of observation sentences on an individualist basis:

> [I] account a sentence observational for a group if it is observational for each member *and* if each would agree in assenting to it, or dissenting, on witnessing the occasion of utterance [QUINE 1992, 443].

An elucidation of the nature of observation sentences touches on a central issue of philosophy of science: the question whether there are pure observational data, uncontaminated by theory. Quine's holism is a friendly environment for the thesis of the theory-ladenness of observation, but Quine tried to avoid both the thesis of the purity of observations and the thesis of the theoretical contamination of observations. Firstly, he avoids references to subjective experience (like *Konstatierungen* or Carnap's *Elementarerlebnisse*), rejecting the notion of sense data and replacing it by two clearer concepts: the neural input (the neurological *Ersatz* of the psychological notion of sense data) and the observation sentence. The latter notion is *Janus-faced*, because it involves a «*neural intake*» and, at the same time, it is related to theoretical sentences. In order to clarify the relation between theory and experience, Quine claims that observation sentences can be taken in two ways: holophrastically, as unstructured responses to certain stimuli, and analytically, structured by terms that refer to external objects and are connected to theories: «*Our Janus-faced observation sentence faces neural intake when taken holophrastically and faces theory when taken term by term*» [QUINE 1993, 110]. To put it another way, observation sentences taken holophrastically are not theory-laden and constitute a solid, empirical basis for science; taken analytically, they are theory-laden and belong to the system of science. This double personality of observation sentences is, however, problematic. In particular, when taken holophrastically, observation sentences are entities too rude to have epistemological significance; in fact, they are «*the human counterpart to animal cries*», which have the function to alert for dangers and opportunities [cf. QUINE 1993, 109]. Quine's empiricism led him to elaborate an account of observation sentences that downplays their dependence on

theory, but the claim that observation sentences have two faces (a theory-free and a theory-laden face) is a mistake; instead of describing two faces of the same entity, we may say that Quine is in fact describing two (quite) different entities... We can conclude that he failed in providing a satisfactory account of a theory-free, empirical basis of science.

Quine's strong version of empiricism is also responsible for his account of meaning and the controversial thesis of the indeterminacy of meaning. His empiricism imposes very restrictive conditions on a theory of meaning that lead inevitably to meaning scepticism. But there are obvious alternatives. From a Wittgensteinian standpoint, for instance, social norms play a fundamental role in determining meaning, but the social and normative dimension of meaning is clearly neglected by Quine. In sum, if there is a lesson to be taken from Quine's critical dialogue with the Vienna Circle, it consists in recognizing that there is something wrong in Quine's austere empiricism.

References

AYER, Alfred Jules, ed. (1959) *Logical Positivism*, New York: The Free Press.

CARNAP, Rudolf (1928) *Der logische Aufbau der Welt*, Hamburg: Meiner.

CARNAP, Rudolf (1932) 'Die physikalische Sprache als Universalsprache der Wissenschaft', *Erkenntnis* 2, 432-65.

CARNAP, Rudolf (1932/33a) 'Psychologie in physikalischer Sprache', *Erkenntnis* 3, 107-42.

CARNAP, Rudolf (1932/33b) 'Über Protokollsätze', *Erkenntnis* 3, 215-28.

CARNAP, Rudolf (1937) *The Logical Syntax of Language*, London: Routledge.

CARNAP, Rudolf (1942) *Introduction to Semantics*, Cambridge, MA: Harvard University Press.

CARNAP, Rudolf [1947] (1956) *Meaning and Necessity*, Chicago: The University of Chicago Press.

COFFA, Alberto (1991) *The Semantic Tradition from Kant to Carnap*, Cambridge: Cambridge University Press.

EBBS, Gary (2011) 'Carnap and Quine on Truth by Convention', *Mind* 120, 193-237.

GIBSON, Roger, ed. (2004) *The Cambridge Companion to Quine*, Cambridge: Cambridge University Press.

GRICE, Herbert Paul & Peter Frederick STRAWSON (1956) 'In Defence of a Dogma', *The Philosophical Review* 65, 141-158.

HYLTON, Peter (2007) *Quine*, London: Routledge.

JUHL, Cory & Eric LOOMIS (2010) *Analyticity*, London: Routledge.

KOPPELBERG, Dirk (1987) *Die Aufhebung der analytischen Philosophie. Quine als Synthese von Carnap und Neurath*, Frankfurt: Suhrkamp.

NEURATH, Otto [1931] (1959a) 'Sociology and Physicalism' A. J. AYER, ed., *Logical Positivism*, New York: The Free Press, 282-317.

NEURATH, Otto [1932/3] (1959b) 'Protocol Sentences', A. J. AYER, ed., *Logical Positivism*, New York: The Free Press, 199-208.

O'GRADY, Paul (1999) 'Carnap and Two Dogmas of Empiricism', *Philosophy and Phenomenological Research* 59, 1015-1027.

PUTNAM, Hilary Whitehall (1975) *Mind, Language and Reality*, Cambridge: Cambridge University Press.

QUINE, Willard Van Orman (1953) *From a Logical Point of View*, Cambridge, MA: Harvard University Press.

QUINE, Willard Van Orman (1960) *Word and Object*, Cambridge, MA: The MIT Press.

QUINE, Willard Van Orman (1966) *The Ways of Paradox and Other Essays*, Cambridge, MA: Harvard University Press.

QUINE, Willard Van Orman (1969) *Ontological Relativity and Other Essays*, New York: Columbia University Press.

QUINE, Willard Van Orman (1975) 'On Empirically Equivalent Systems of the World', *Erkenntnis* 9, 313-28.

QUINE, Willard Van Orman (1979) 'Facts of the Matter', R. SHAHAN & C. SWOYER, eds. *Essays on the Philosophy of W. V. Quine*, Hassocks: Harvester, 155-169.

QUINE, Willard Van Orman (1981) *Theories and Things*, Cambridge, MA: Harvard University Press.

QUINE, Willard Van Orman (1992) *Pursuit of Truth*, Cambridge, MA: Harvard University Press.

QUINE, Willard Van Orman (1993) 'In Praise of Observation Sentences', *The Journal of Philosophy* 90, 107-116.

QUINE, Willard Van Orman (1995) *From Stimulus to Science*, Cambridge, MA: Harvard University Press.

QUINE, Willard Van Orman (2000) 'Responses', A. ORENSTEIN & P. KOTATKO, eds., *Knowledge, Language and Logic: Questions for Quine*, Dordrecht: Kluwer, 407-430.

SCHLICK, Moritz (1986) *Philosophische Logik*, Frankfurt: Suhrkamp.

SCHLICK, Moritz [1934] (1959) 'The Foundation of Knowledge', A. J. AYER, ed., *Logical Positivism*, New York: The Free Press, 209-227.

✺✺✺