CHAPTER 7

Rejection of Analytic Truth

1. Logical pluralism with respect to understandability, neutrality with respect to the correctness of a logic.

The argumental conception of meaning is pluralistic with respect to the understandability of different logics. In order to understand a logic we need only to know the argumentation rules concerning the logical constants, i.e. to know some relevant logical rules. In order to give meaning to a logical constant, it is sufficient to accept the logical rules concerning it.

However, it should be clear that the logical pluralism which characterizes the conception of meaning here described is not the same pluralism that Rudolf Carnap embraced in *The Logical Syntax of Language*.\(^1\) Carnap was a pluralist because he thought that there are many understandable languages and many possible logics corresponding to these different languages. But he also thought that we are completely free to choose which language to adopt. He explicitly denied that there be any rationally acceptable and clear notion of correctness with respect to which the choice of a language and the choice of a logic could be considered right or wrong. The famous Principle of Tolerance expresses this view with Carnap's characteristic clarity.

In logic there are no morals. Everyone is at liberty to build up his own logic, i.e. his own form of language as he wishes. All that is required of him is that [...] he must state his methods clearly, and give syntactical rules instead of philosophical arguments.\(^2\)

Here Carnap meant explicitly stated rules, while we maintained in chapter 3 that the argumentation rules neither are nor have to be always explicitly stated by the speakers who follow them. But the latter, though important, is a comparatively minor point. The most important difference between Carnap's view and the argumental conception of meaning proposed in this book is that according to the latter conception a fundamental aspect of rational inquiry consists in criticizing and improving the languages in which arguments are constructed and assertions are made in order to attain to an ideal balance between various criteria of language-correctness. The view I defend involves the tenet that the adoption of a language in a given epistemic situation can be right or wrong and that inquiry

\[^1\] Carnap (1934).
\[^2\] Carnap (1934) §17, Engl. translation, p. 52.
passes through many *rational* modifications of the languages in which the investigation is carried on, whereas Carnap maintained that rational inquiry takes place only *within a fixed language* and that the adoption of one rather than another language is a matter *beyond rationality*, and does not belong to rational inquiry. According to *The Logical Syntax of Language*, a language is a *formal system*, a closed set of fixed rules. For Carnap, to understand a language is just to master the rules of a formal system, while the supporter of the argumental conception of meaning – according to chapter 6 – maintains that an understanding of the syntactic rules and of the argumentation rules of a language is only a part of our understanding, and that another essential part is the assertoric force which drives us beyond the set of rules that we presently accept, towards possible rational changes of those rules. Different languages – according to *The Logical Syntax of Language* – can only be compared like formal systems by a purely ‘syntactical’ examination which should be "nothing more than *combinatorial analysis*, or, in other words, the *geometry* of finite, discrete serial structures of a particular kind"\(^3\). But ‘syntactical’ analysis in Carnap's sense is simply a metalinguistic description of the properties of the languages, and it does not provide any rational criterion for choosing, criticizing or improving them. In sum, Carnap not only was a pluralist with respect to the understandability of different logics, but also rejected any *non-relativistic notion of correctness for a logic*: if we choose to adopt a language, then a certain logic will be correct for us, relatively to the language we have chosen. But we are completely free to choose as we wish.

The argumental conception which has been described in this study, differently from Carnap's view, accepts the idea that a language can be rationally considered correct or incorrect. Moreover, as we saw in chapter 5, the understandability of a language and of a logic does not guarantee their correctness. The correctness of a logic in an epistemic situation depends on the correctness of the language in which it is framed, and the correctness of the language, as we saw, depends on many conflicting factors which should be evaluated in the given epistemic situation. Such an evaluation may change in a subsequent epistemic situation until an ideal epistemic situation is reached where the attitude towards that logic becomes stable. Even if there are changes, and for example a logic is first considered correct and then incorrect, that logic remains always understandable.

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\(^3\) Carnap (1934), §2, Engl. transl. p. 7. However, Carnap did not remain faithful to this characterization of syntactical analysis, because in his definition of consequence and analyticity he availed himself of *semantic* techniques requiring strong metalanguages, cf. Carnap (1934), §§ 34a-34d. For different interpretations of Carnap's approach, cf. Friedman (1988), and Goldfarb and Ricketts (1993).
A theory of meaning centred on immediate argumental role answers the question about the nature of the understandability of a logic. But the theory of meaning cannot answer the question whether a logic is correct or not, because the latter question must be decided in concrete epistemic situations which the theory of meaning cannot describe in advance. Therefore the argumental conception of meaning is neutral with respect to the correctness of a logic.

2. There are relatively a priori sentences, but no sentence is absolutely a priori.

In chapter 4 we saw that a sentence can be a priori assertable relatively to a language \( <L,A,\geq> \). In \( <L,A,\geq> \) one can construct arguments which do not contain any undischarged assumption and do not employ any non-linguistic evidence. If \( S \) is the conclusion of such an argument, then \( S \) is a priori assertable relatively to \( <L,A,\geq> \). In other words:

\[ \text{xxxvii} \quad \text{S is a priori assertable relatively to } <L,A,\geq> \text{ if, and only if,} \]
\[ \text{the empty pair } <\emptyset,\emptyset> \text{ is a global assertability condition of } S \text{ in } <L,A,\geq>. \]

If \( S \) is a priori assertable relatively to \( <L,A,\geq> \), once one has accepted the language \( <L,A,\geq> \) and its argumentation rules, one can find an argument for \( S \) without resorting to experience. That is why \( S \) is a priori relative to \( <L,A,\geq> \). However this does not mean that \( S \) is absolutely a priori, nor does it mean that \( S \) is true.

It does not mean that \( S \) is true, because the truth of a sentence \( S \) is the assertability of \( S \) in an ideal epistemic situation, which depends on the possibility to accept a language preserving the immediate argumental role of \( S \) in an ideal epistemic situation and on the existence in that language of an argument for \( S \) independent of assumptions. The mere fact that \( S \) is a priori assertable relatively to \( <L,A,\geq> \) does not guarantee that \( <L,A,\geq> \) is acceptable in an ideal epistemic situation for \( S \), hence it does not guarantee that \( S \) is true.

Moreover the acceptability of a language \( <L,A,\geq> \) in an epistemic situation, as we have often repeated, depends on many contextual factors, including also characteristics of \( <L,A,\geq> \) which make such a language a better apparatus for

\[ 4 \text{ Cf. chapter 4, section 1.} \]
\[ 5 \text{ The notion of a global assertability condition of a sentence } S \text{ in a language } <L,A,\geq> \text{ was introduced in chapter 4, section 1, by definition } \text{xxxvi}, \text{ p. 126.} \]
dealing with empirical evidence. Thus, even if S is a priori assertable relatively to \(<L,A,≥>\), the acceptability of \(<L,A,≥>\) is not a priori. A piece of knowledge is absolutely a priori only if it is independent of all experience.⁶ Since the acceptability of S depends on the acceptability of \(<L,A,≥>\), which in turn depends on experience, S is not absolutely a priori.⁷

In particular, logical truths – i.e. truths in which only logical constants occur essentially⁸ – are not absolutely a priori.

### 3. There are not analytic truths.

The argumental conception of meaning expounded in this book leads us not only to reject the idea that some sentences are absolutely a priori, but also the idea that some sentences are true only in virtue of their meaning, i.e. analytically true.⁹

According to the argumental conception, as we saw in chapter 5, a language can be incorrect. Thus, meanings by themselves cannot make a sentence true. A sentence S can be a priori assertable relatively to the language fragment \(<L^S,A^S,≥S>\) presupposed by its immediate argumental role. In such a case, S is a priori assertable relatively to any language \(<L,A,≥>\) which preserves the immediate argumental role – i.e. the sense – of S. Thus, we can say that S is assertable relatively to \(<L,A,≥>\) only in virtue of its meaning. But the choice whether or not such a language \(<L,A,≥>\) and its sublanguage \(<L^S,A^S,≥S>\) are

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⁶ Cf. Kant (1787) B3: "Wir werden also im Verfolg unter Erkenntnissen a priori nicht solche verstehen, die von dieser oder jener, sondern die schlechterdings von aller Erfahrung unabhängig stattfinden".

⁷ The thesis that some sentences are a priori "relative to a particular body of knowledge", but no sentence is absolutely a priori, was defended by Putnam; cf. for example Putnam (1975a) pp. viii-x.

⁸ This is Quine's well known definition of logical truth in Quine (1936). Quine's notion of ‘essential occurrence’ is defined as follows: 1) an expression occurs vacuously in a sentence S if, and only if, by replacing it with other syntactically admissible expressions the truth or the falsity of S remains always unaltered in the resulting sentence S*; 2) a sentence S* obtained by replacing an expression occurring vacuously in S is a vacuous variant of S (all vacuous variants of S have in common "a certain skeleton of symbolic make-up" but differ "in exhibiting all grammatically possible variations upon the vacuous constituents" of S); 3) an expression occurs essentially in a sentence S if, and only if, "it occurs in all the vacuous variants" of S, ”i.e. if it forms part of the aforementioned skeleton”. Cf. Quine (1976) pp. 80-81.

⁹ Though there are other definitions of ‘analytic’, the widest sense given to ‘analytically true’ is that a sentence is analytically true if, and only if, it is true only in virtue of its meaning; cf. Quinton (1964).
acceptable in an epistemic situation depends on considerations which go beyond the meaning of $S$.

*If $S$ is true*, its truth, according to the epistemic conception of truth described in chapter 6, depends on the acceptability in an ideal epistemic situation of a language $<L, A, \geq>$ which preserves the immediate argumental role of $S$. But this acceptability, again, does not depend only on the meaning of $S$, i.e. it does not depend only on what we have to know in order to understand $S$. It depends on the evaluation of $<L, A, \geq>$ guided by the various criteria mentioned in chapter 5: non-paradoxicality, simplicity, epistemic fruitfulness etc. The course of inquiry leading to an ideal epistemic situation for $S$ may consist of many epistemic transitions which involve modifications of the accepted languages according to the aforementioned criteria. And also in the ideal epistemic situation the evaluation of $<L, A, \geq>$ has to do with *the whole language*, not only with the fragment $<L_S, A_S, \geq S>$ presupposed by the meaning of $S$. Moreover the epistemic fruitfulness of $<L, A, \geq>$ ultimately depends on *experience*. Therefore, even if a sentence $S$ is true and *a priori* assertable relatively to $<L_S, A_S, \geq S>$, $S$ is *not* true only in virtue of its meaning, i.e. it is not analytically true.

In "Two Dogmas of Empiricism" Quine denied that there are analytically true sentences. But Quine denied also that it is possible to make a legitimate distinction between knowledge of language – constitutive of linguistic understanding – and further knowledge which is not constitutive of linguistic understanding. Thus Quine, in rejecting analyticity, rejected also the genuine notion of meaning. On the contrary, the argumental conception of meaning denies that there are analytical truths without abandoning the notion of meaning and without eliminating the distinction between knowledge of a language and non-linguistic knowledge.

In particular, logical truths are not true in virtue of the meanings of logical constants. An explanation of the meanings of a given set of logical constants explains only in what an understanding of those logical constants consists by describing the logical rules concerning them. But since understandability does not guarantee correctness ("tonk" is understandable, but wrong), an explanation of the meanings of those logical constants does not decide whether the resulting logic is acceptable. This can be decided only within concrete epistemic situations which are to a great extent unforeseeable. The idea that a meaning-theoretical investigation should decide whether a logic is valid, depends on the idea that a theory of meaning should at the same time explain what it is to *understand* a

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10 Quine (1951).
11 Cf. chapter 5, section 1.
language and give a guarantee of the *correctness* of the language. My point is that these two tasks cannot be performed simultaneously.

4. Dummett's requirements on a theory of meaning are not sufficient for rejecting classical logic.

Dummett thinks that a theory of meaning should be a theory of understanding and should satisfy the requirements of compositionality and manifestability. On the basis of these requirements, Dummett has proposed an argument against classical logic and in favour of intuitionistic logic, which, differently from Brouwer's original criticism of classical logic, involves only general considerations within the theory of meaning. Dummett seems to think that it is not possible to devise any theory of meaning and understanding in accordance with these requirements which gives meaning to the classical logical constants. Dummett's conclusion is that the classical logical constants are unintelligible. Therefore he has advocated a revision of logical practice: classical logic should be abandoned and replaced with intuitionistic logic (which is justified by a verificationist theory of meaning).\(^{12}\)

But a theory of meaning centred on immediate argumental role is a compositional theory of understanding which satisfies the requirement of manifestability and according to which classical logical constants are perfectly understood, because we all know argumentation rules for some version of classical logic. Thus Dummett's requirements on a theory of meaning don't imply that classical logic is unintelligible, and are not sufficient for rejecting classical logic.

It can be objected that if we accept the equivalence thesis:

\begin{align*}
1) \text{(it is true that } S) & \leftrightarrow S, \\
2) S \lor \neg S, \\
3) \text{(it is true that } S) \lor \text{(it is true that } \neg S).
\end{align*}

\(^{12}\) Cf. Dummett (1975a). See also chapter 2, section 2, of this book.
The principle of bivalence, even if it cannot be denied without contradiction, seems unwarranted if we adopt an epistemic conception of truth like the one described in chapter 6 and the sentence substituted for S is a still undecided sentence (e.g. Goldbach's conjecture) such that we do not know any effective method for deciding it. In this case, we now have no argument for the thesis that there is an ideal epistemic situation in which it is decided whether such a sentence is assertable or its negation is, except the extrinsic argument based on the excluded middle. In other words, we don't know whether we can solve the problem whether S or \( \neg S \), but classical logic, if we endorse the epistemic conception of truth, forces us to conclude that we (at least in principle) can.

This objection shows that classical logic – as Brouwer stressed in 1908\(^ {13} \) – involves an unwarranted assumption: the assumption that we can in principle solve any given problem. The controversial character of such an assumption may be an argument against classical logic, but it does not show that classical logic is unintelligible. Moreover such an argument against classical logic can be outweighed by other advantageous properties of classical logic. Quine, for example, has maintained that classical logic should be preferred to other logics for "the convenience, the simplicity and the beauty" that it affords.\(^ {14} \) John Burgess has argued that the price of replacing classical mathematics with intuitionistic mathematics would be too high, especially if one considers the consequences of such a revision for the applications of mathematics to physics, and in general to the empirical sciences.\(^ {15} \) Whether these arguments in favour of classical logic are decisive is a difficult question that I am not competent to answer. My point here is only that classical logic is perfectly intelligible. Dummett himself, to some extent, seems to grant that even Brouwer understood classical logic and classical mathematics:

Brouwer made himself famous with his great series of discoveries in classical topology. His principal motive for doing so was to obtain the chair of mathematics at Amsterdam, from which he could preach the necessity of replacing classical by intuitionistic mathematics; *but by proving these classical theorems, he demonstrated that he had a profound grasp of classical mathematics*. He could

\(^{13}\) Cf. Brouwer (1908).


\(^{15}\) Cf. Burgess (1984) pp. 191-192. Geoffrey Hellman's recent proof that Gleason's Theorem is not constructively provable supports Burgess' claim (Gleason's Theorem is a fundamental theorem for the foundations of quantum mechanics). Cf. Hellman (1993a). Moreover in Hellman (1993b) it is argued that "central results of functional analysis for Quantum Mechanics involving *unbounded* linear Hermitian operators in Hilbert space, especially the Spectral Theorem [...] not only can [...] not be constructively proved, [...]but] cannot even be constructively stated!".
play the game of classical mathematics as skilfully as any classical mathematician, and more skilfully than most. [...] How, then, could he maintain that classical mathematics is meaningless?  

The answer, in my opinion, is that Brouwer's views about mathematical meaning and mathematical understanding – centred upon the psychologistic and solipsistic notion of 'languageless mental construction' – did not aim at explaining linguistic practice in accordance with the thesis that meaning is public and with the requirement of manifestability. For Brouwer, mathematical understanding depends on the mental constructions which are performed in the mind of a mathematician. Mental constructions are "languageless"\(^17\), and thus independent of linguistic practice. Linguistic practice is necessary for communication, but it is also the main source of error and misunderstanding in mathematics, because it is not always accompanied by corresponding mental constructions.\(^18\) That is why the possession of the linguistic practical ability to use logical constants classically – according to Brouwer – is compatible with a complete lack of real understanding.

But if we don't want to leave linguistic practice unexplained, and if we accept the Wittgensteinian view that meaning is use and Dummett's requirement of manifestability – which is a development of the Wittgensteinian view –, we have to admit that if one is able to share the common practice of classical logic, then one understands the relevant logical words. Since I do think that a theory of understanding ought to explain linguistic practice in accordance with the requirement of manifestability, the intelligibility of classical logic seems to me a clear fact.

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\(^{16}\) Dummett (1991a) p. 239 (my italics).

\(^{17}\) Cf. Brouwer (1933), Engl. transl p. 443.

\(^{18}\) Cf. \textit{ibidem}: "for a human mind equipped with an unlimited memory pure mathematics, practised in solitude and without using linguistic signs, would be exact, but the exactness would be lost in mathematical communication \textit{between} human beings with an unlimited memory, because they would still be thrown upon language as their means of understanding". Cf. also Brouwer (1908) pp. 107-108.