CHAPTER 5

Correctness of a language

1. Meaningful paradoxical languages.

At the end of the preceding chapter tolerance about the form of the argumentation rules which may constitute the sense of a word, one of the main characteristics of the theory of meaning centred on immediate argumental role, was contrasted with the restrictive attitude of the verificationist theory of meaning. Tolerance was regarded as an advantage of the theory centred on immediate argumental role, because it made such a theory fully compatible with epistemological holism: no bounds are set in advance on the ways in which one can verify a sentence. A supporter of the verificationist theory of meaning, however, has an immediate objection to this seemingly unrestricted openness with respect to what can count as a verification of a sentence on the part of a theory centred on immediate argumental role. If we don't put any limit, in what sense can we say that a new verification which is put forward is correct? Is a linguistic community free to adopt argumentation rules, and thereby standards of correct verification, arbitrarily? But the issue is not whether there are limits. The issue is whether the limits can be fixed in advance and whether they can be fixed by a theory of meaning.

Anyway, the verificationist's worries might seem right if one considers that a theory of meaning centred on immediate argumental role admits the possibility of meaningful paradoxical languages. We may say that a language (or fragment of language) is paradoxical if, and only if, whenever a sentence is assertable in that (fragment of) language, also every other sentence is assertable. In a paradoxical language one cannot distinguish different circumstances in virtue of the assertability of different sentences: if something can be said, then everything can be said. This is of course a very bad defect because we need a language in order to impose an intersubjective order upon our experience and a minimal requirement for this aim to be achieved is that one can distinguish different circumstances through the legitimacy of different linguistic moves.

Now, it is not difficult to see that if there are no restrictions on the argumentation rules by means of which new words are introduced into a language, we can introduce new words with which are associated argumentation rules such that we not only, through those rules, can assert something new, but we can assert everything, because the resulting language is paradoxical. A very clear and simple example of this general fact is Arthur Prior's connective "tonk".
In "The runabout inference-ticket"\textsuperscript{1}, published in 1960, Prior described "tonk" as a connective introduced into a language by giving the following introduction and elimination rules.

\begin{align*}
\text{tonk-I} & \quad \frac{C}{C \text{ tonk} D} \\
\text{tonk-E} & \quad \frac{C \text{ tonk} D}{D}
\end{align*}

If "tonk" belongs to a language \( <L,A,\ge> \), then every sentence \( D \) is assertable in \( <L,A,\ge> \) on the basis of any assumption \( C \). To see how this is possible, it is sufficient to put an application of tonk-introduction on top of an application of tonk-elimination.

\begin{align*}
\frac{C}{C \text{ tonk} D} & \quad \frac{C \text{ tonk} D}{D}
\end{align*}

Thus, if there is some \( C \) assertable in \( <L,A,\ge> \), we may assert every sentence \( D \) in \( <L,A,\ge> \) by means of the argument above.

Prior's intention in describing "tonk" was to show that one cannot give meaning to a sentential connective by fixing some inference rules concerning it. His view was that "an expression must have some independently determined meaning before we can discover whether inferences involving it are valid or invalid".\textsuperscript{2} "tonk" is simply meaningless and the tonk-introduction and tonk-elimination rules cannot give it a meaning that it does not already have. Paradoxicality arises, according to Prior, only if we wrongly think that meaning can be given by inference rules.\textsuperscript{3}

Nuel Belnap, more in sympathy with the idea that meaning can be given by fixing inference rules, preferred to conclude that one should demand in advance that the rules fulfil certain requirements (especially the requirement that the language obtained by adding a new expression and rules concerning that new expression should be a conservative extension of the old language).\textsuperscript{4} Also Dummett's and Prawitz's demand that every indirect verification should be in

\textsuperscript{1} Prior (1960).
\textsuperscript{2} Prior (1960) p.38.
\textsuperscript{3} From Stevenson (1961) to Johnson-Laird (1983) pp.41-42 many commentators agree with Prior's view that "tonk" show that meaning cannot be given by rules of inference.
\textsuperscript{4} Cf. Belnap (1962).
principle reducible to a direct verification corresponds to a general restriction on the acceptability of inference rules for a logical constant: the requirement that there should be a harmony between the introduction rules fixing the meaning of the logical constant and the elimination rules that are valid in virtue of that meaning. So, a verificationist theory of meaning for a given language, as described by Dummett and Prawitz, would provide not only an articulated picture of an understanding of that language, but also a guarantee that the language is not paradoxical.

Despite the differences, the common trait of Prior's, Belnap's, Dummett's and Prawitz's attitude is that a paradoxical set of rules cannot give meaning to an expression. The common assumption is that a paradoxical (fragment of) language cannot be meaningful, and if a theory of meaning implies that there can be meaningful paradoxical languages, then such a theory is wrong.

My claim will be that, on the contrary, this common assumption is wrong. More exactly, I claim that if a theory of meaning a) is a theory of understanding, b) is adequate to explain linguistic practice and c) satisfies the requirement of manifestability, then such a theory of meaning must admit the possibility of meaningful languages that are paradoxical. The admissibility of meaningful paradoxical languages is a condition of adequacy for a theory of meaning in this sense. Such a claim is not meant as a denial that paradoxical languages are incorrect languages, and that they should be emended. I have already stressed that paradoxical languages are deeply defective. The issue is not whether they are defective, but whether they are meaningful, that is to say whether they are understandable.

The claim that paradoxical languages are understandable is based on a patent fact. It is a fact that we are capable of constructing and of using languages that are paradoxical. Because of the liar paradox Tarski has suggested that natural language is paradoxical. Perhaps Tarski was wrong, but important examples like set theory and the calculus show that in the course of the history of science paradoxical languages were fruitfully and lastingly used even if their paradoxicality was well known. Moreover we mostly have no guarantee that the languages we now use are not paradoxical.

A supporter of the idea that a paradoxical language cannot be meaningful maintains that it is not possible to understand paradoxical notions. Facing the fact that people use paradoxical languages he may say that they believe that they believe that they

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5 Cf. Prawitz (1977) and Prawitz (1987) on the distinction between the requirement of harmony and Belnap's requirement of conservativeness (which Prawitz does not demand). However, Dummett seems to equate the two requirements; cf. Dummett (1991) p.209 and pp.246-251.
6 Cf. Tarski (1943).
understand, but that in reality they do not understand. A real understanding -he maintains- implies the non-paradoxicality of what is understood. I shall call such a notion of understanding REAL-UNDERSTANDING. Such a notion of understanding, however, if nothing is added, does not provide any explanation of the paradoxical practice. But the only reason why we need a theory of understanding is that through a theory of understanding we hope to gain an explanation of our capacity to master a language, that is of our linguistic practice.

So, if you support the idea that REAL-UNDERSTANDING implies the non-paradoxicality of what is understood but you want that your notion of understanding be relevant to an explanation of linguistic practice, you should not say that in a paradoxical practice there is no REAL-UNDERSTANDING at all. You had better say that the language users who implicitly or explicitly accept paradoxical rules concerning some words have understood some non-paradoxical notions independently of the paradoxical argumentation rules, that they have associated the non-paradoxical notions with the words in question and so have given sense to those words, but in performing reasonings concerning those words have come to accept the paradoxical rules because they wrongly interpreted the previously grasped non-paradoxical notions. So the paradoxical practice would be explained by the understanding of non-paradoxical notions. The paradoxical principles would originate from a wrong interpretation of non-paradoxical notions, they would distort and betray the original notions, but they would depend on them. The understanding would not consist in the paradoxical argumental practice which, in itself, would be meaningless, but that practice would depend on a previous REAL-UNDERSTANDING.

According to such a view, for example, the mathematicians who in the seventeenth and eighteenth century used the paradoxical Newtonian method of fluxions or the equally paradoxical Leibnizian calculus of infinitesimals and used expressions like "infinitely small distance" or "ultimate ratio of the Evanescent Parts" had in reality grasped some non-paradoxical notions independently of the paradoxical calculi, but, since they did not reflect enough on these independent notions and their understanding was still in a way unripe, when they came to perform public reasonings concerning those notions, they were misled into paradoxes.

This response to the objection based on the existence of a paradoxical practice is available only if the supporter of REAL-UNDERSTANDING can emend the paradoxical practice and reconstruct it in a unique non-paradoxical way, so that all its important epistemological features are preserved. There is no guarantee that this can always be done. But only if it can be done the supporter of REAL UNDERSTANDING will have some grounds for saying that there are non-paradoxical notions a grasp of which underlies the paradoxical practice. My main
objection to this response, however, is that it does not satisfy the requirement of manifestability.

Assume that there are two language users who both accept some paradoxical argumentation rules. The first has independently grasped some non-paradoxical notions, but in his attempt at formulating reasonings concerning those notions has erroneously accepted paradoxical principles. The second language user hasn't grasped any non-paradoxical notions, but he has been socially trained to use the relevant words according to the paradoxical principles as the first language user uses them. Thus the second language user believes to understand the relevant words in the same way as the first one. However, the supporter of REAL-UNDERSTANDING must say that only the first language user really understands something, while the other does not understand and thus simply utters empty sounds and scribbles meaningless marks on paper. My point is that there is no intersubjectively testable difference between them, and therefore the notion of REAL-UNDERSTANDING violates the requirement of manifestability and the principle that meaning is public. Indeed the two language users accept the same reasonings and therefore believe that they understand each other and give the same meanings to the relevant words. If they discover the paradoxicality of their argumentation rules, since they both are aware that a language in which every sentence is equally assertable is a defective language, they both will feel the need to emend their argumentation rules without losing all the epistemological advantages that motivated that argumental practice.

Therefore the theory of REAL-UNDERSTANDING either does not provide any explanation of a large part of linguistic practice or violates the requirement of manifestability. I conclude that a theory of understanding which is relevant to an explanation of linguistic practice and satisfies the requirement of manifestability must allow that our understanding of some words can consist in our acceptance of some argumentation rules concerning those words even if these rules are paradoxical.

2. Correctness of a language.

The theory of meaning centred on immediate argumental role allows that we can understand paradoxical languages even if paradoxical languages are incorrect. The understandability of a language does not guarantee its correctness. According to such a view two kinds of questions should be clearly distinguished. The first is: how is it possible to be capable of mastering a language? in what does our understanding of a language consist? what must a speaker (implicitly) know in order to understand a language? The second is: how can a language be
criticized? in what sense can a language be incorrect? what does "correctness" mean when applied to a language?

A notion of correctness which applies to a meaningful language or fragment of language is clearly different from the notion of correctness of an assertion, from the notion of correctness of an argument and from the notion of truth of a sentence. The latter notions have to do with assertions, arguments and sentences within a language but they do not concern the language itself, at least not directly. The idea of a notion of correctness which applies to a meaningful language or fragment of language is not a new idea in the history of philosophy. Plato expounds the notion of truth of a sentence as right connection of name (ονοµα) and verb (ρηµα) in the Sophist, but in Cratylus we can find a different notion of correctness which does not concern particular connections of words in sentences, but the words themselves. In Cratylus Plato's Socrates compares words with the instruments of craftsmen. A carpenter can make a shuttle more or less rightly or wrongly. The shuttle is right if it is adequate to the aim of weaving. Similarly the language-maker can make words more or less adequate to the aim of knowledge. Therefore -against Hermogenes- Socrates maintains that words may be right or wrong. But -against Cratylus- Socrates adds that words may be right or wrong in different degrees and even if they are wrong, they are meaningful, i.e. they can be used (imperfectly) for their aim. Moreover, since words may be wrong, it is necessary to criticize language and to judge words with respect to their correctness. This is the dialectician's task, which is performed through the art of interrogating and answering.

The main characteristic of the view of language which I am here describing is that the mere understanding does not guarantee the correctness of the understood language and that the criteria on the basis of which we can establish that a language is understood are different from the criteria on the basis of which we judge the correctness of the language. What are the latter criteria?

If it is proposed that a new fragment of language be added to a preexisting language or that the preexisting language be modified, how can such a proposal be rationally evaluated? History of science shows that there are different, sometimes conflicting, criteria, most of which are to a certain extent contextual and relative to an overall epistemic situation.

An epistemic situation can be described as a triple $<L,A,≥,AR,P>$ where the first item $<L,A,≥>$ is a language that is used in that epistemic situation, the second item AR is a set of accepted arguments in $<L,A,≥>$, and P, the third item, is a set of open problems (of different importance) which can be formulated as.

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7 Cf. Plato (1953).
questions in \(<L, A, \geq>\). In general, the development of knowledge can be described as a series of "epistemic transitions", i.e. transitions from an epistemic situation \(<<L, A>>, AR, P>\) to another epistemic situation \(<<L', A'\geq'>, AR', P'>\). But in some epistemic transitions, for example when the only novelty is that a new sentence is verified (and thus \(AR\) and \(AR'\) are different), \(<L, A>>\) and \(<L', A'\geq'>\) remain equal. A modification of the language is a special kind of epistemic transition, an epistemic transition in which the language \(<L, A>>\) is changed, and thus \(<L', A'\geq'>\) is different from \(<L, A>>\).

What are the criteria according to which a modification of language is a rational epistemic transition? Though the criteria in question may be sometimes conflicting it seems that they are all governed by the fundamental aim of imposing an intersubjective order upon experience, as far as possible.

A first criterion, as we have already seen, is the non-paradoxicality of the new language. This criterion is a contextual criterion, because sometimes paradoxes arise from the interaction of a new fragment of language with the context of the preexisting language to which the new fragment is added.

A second criterion is the ease with which the new language and its argumentation rules can be learnt and used in the given epistemic situation. This depends in part on the simplicity of the new (fragment of) language considered in isolation, and in part on its relations with the preexisting language, like the similarity between the new language and (some parts of) the old one, the possibility to draw interesting analogies with something already known, and to a certain extent even the agreement with some preconceived ideas.

A third criterion is the epistemic fruitfulness of the new language in the given epistemic situation. The new language is epistemically fruitful if it offers the possibility of discovering new laws and new systematic connections, of solving previously unsolved problems, of unifying disparate fields.

In order to evaluate rationally the proposal of a new language in a given epistemic situation one should consider all these factors. Often the disadvantages on one side (though they are still considered disadvantages) are outweighed by the advantages on the other side. For example in the seventeenth and eighteenth century the paradoxicality of the calculus of infinitesimals was outweighed by the

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8 This description of an epistemic situation was suggested to me by Kitcher's description of "a mathematical practice" in The Nature of Mathematical Knowledge as consisting of five components: a language, a set of accepted statements, a set of accepted reasonings, a set of questions selected as important, and a set of metamathematical views. Kitcher regards the growth of mathematical knowledge as a series of "rational interpractice transitions"; cf Kitcher (1983) ch.7. Cf. also Kitcher's description of a "consensus practice" in The Advancement of Science (Kitcher (1993) p.87), where the approach of The Nature of Mathematical Knowledge is further developed and applied to science in general.
great epistemic fruitfulness of the new language, even if the community of mathematicians still felt the need of getting rid of the paradoxes. So, a language is rationally acceptable in a given epistemic situation if one can reach what in that situation is a good balance between advantages and disadvantages with respect to these different criteria. If the epistemic situation changes, as the linguistic and epistemic context develops, the balance can be altered and a language which was previously acceptable may lose its acceptability. Therefore one should not speak of the correctness of a language absolutely, one should speak of the correctness of a language relatively to a given epistemic situation.

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