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On the social relativity of truth and the analytic/synthetic distinction

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1. Introduction

The issue which I shall be addressing in this paper is a philosophical puzzle which confronts and is extensively discussed by specialists in such disciplines as the History of Ideas, the History of Science, the Sociology of Knowledge and the Sociology of Science, but which with one or two honourable exceptions has tended to be neglected by professional philosophers. The puzzle is generated by a peculiarity of the verb "to know" which has been familiar to philosophers, ever since it was first pointed out by Plato in the *Theaitetus*. If I say of some other person – let us call him *Baralipton* – that *Baralipton knows that p*, I thereby commit myself to asserting the truth of the proposition to the truth of which I am claiming that Baralipton is committed. If I want to avoid that commitment to the truth of the proposition I am attributing to a third party I have to say, in the case where I am uncertain as to whether *p* is true or false, that Baralipton thinks or believes that *p* or, where in my view *p* is false, that Baralipton thinks or believes that he knows that *p*, but he doesn't.

This peculiarity of what Wittgenstein would have called the grammar of the verb "to know," when used to characterize a propositional attitude, is very understandable if we consider a case where Baralipton and I share a common social environment. For in that case it is unlikely that I should find myself wanting to mention an opinion of Baralipton's without at the same time wanting to make clear my own view on the question at issue. But the situation is very different in the case where Baralipton belongs to a social environment far removed in space or time from our own. Suppose, for example, that Baralipton lived at a time when everyone accepted and would have said that they knew that the world is flat, that the whale is a very large fish and that there is at least one known case of a whale swallowing a man. In this case not only is it very inconvenient to have to talk about these beliefs of Baralipton's as things he *thinks* he knows, but doesn't really,

because, as we now know, they are actually false, it involves us in doing something which contravenes the canons of historical and sociological scholarship in that it commits us to judging a past or otherwise alien culture from the chauvinistic standpoint of our own particular time and cultural setting.

The standard response of sociologists and historians of ideas when confronted by this difficulty is to adopt some version of the doctrine of the social relativity of truth and knowledge according to which what is true and what is known to be true depends on the social context of the proposition whose truth is at issue. It is my belief that the charge of cultural chauvinism has to be taken seriously. I also believe that the charge of cultural chauvinism cannot be avoided without adopting *some* version of the social relativity thesis. But I am equally convinced that the two most widely accepted versions of the doctrine that truth is socially relative, which I shall call the naive and the sophisticated version of the doctrine respectively, must be rejected. I shall, therefore, proceed to an exposition of the two versions of the doctrine which I reject, together with my reasons for rejecting them, before going on to state the version which I endorse.

2. The naive version of the social relativity thesis

The naive version of the doctrine of the social relativity of truth holds that what is true or false is what is believed to be true or false within a particular social group. This version of the doctrine is so obviously self-defeating that no self-respecting philosopher since Protagoras has taken it seriously. In recent years, however, it has become rather less easy to ignore by virtue of its adoption as an axiomatic principle, by the Edinburgh-based so-called "Strong Programme" in the Sociology of Science led by David Bloor. Bloor's Strong Programme seeks to explain the historical development of science in sociological terms while remaining completely impartial with respect to the truth or falsity, rationality or irrationality of the beliefs and theories it discusses. It follows that, within the framework of such an enterprise, the only sense that can be given to the claim that a particular belief is true or false is that it is or was believed to be true or false, as the case may be, by a particular social group, in this case, a particular community of scientists. Since one of the principles included in the Strong Programme according to Bloor (1976: 4–5) is the principle of Reflexivity which requires the principles constituting the programme to have application to the programme itself, it cannot be argued that this suspension of judgment is only a provisional attitude adopted for heuristic reasons, rather than a principle to which the Programme is seriously committed. The

Programme, consequently, lays itself open to the following objection.

The minimal definition of a social group is the group which is constituted by any two human beings. You can, if you like, take higher number than two as the minimum required to constitute a social group, but any proposed number will be arbitrary; and it doesn't, in any case, affect the logic of the argument what the precise number required to constitute a social group is taken to be. Nor is the logic of the argument affected by any further constraints that may be added as to the nature and possibility of social interaction between the members of the group thereby constituted.

Given this definition of a social group and given also the principle that a proposition is true, if and only if it is held to be true by all the members of a particular social group, it follows that any proposition which is held to be true by more than one person is true and any proposition that is held to be false by more than one person is false. Consequently, if I want to show that this version of the thesis that truth is socially relative is false, all I need to do, according to this version of the thesis, is to find one other person who joins me in holding this version of the thesis to be false. Provided I can find such a person, and I anticipate no difficulty on that score, it follows that, for the social group so constituted, this version of the social relativity thesis is false. The fact that the same criterion also makes this version of the thesis true, by virtue of the fact that a social group consisting of at least two people holds it to be true, need be of no concern to me or any one who thinks like me. For my concern is with what is true for me rather than what is true for other people, assuming that we allow, as this theory must allow, but as I, along with most people, would not allow, that a proposition can be simultaneously true for one social group and false for another.

It follows that, although this version of the social relativity thesis is not self-defeating, in the sense that it entails its own falsity in the strong sense which excludes the possibility of its also being true, it *is* self-defeating in so far as it excludes the possibility of *any* proposition's being true or false in this strong sense; and, since that must include the social relativity thesis itself, *that* thesis cannot be recommended as true to someone else without simultaneously conceding, not just the listener's right to reject it as false, but that, in so far as there is disagreement about its truth value, it is just as much false as it is true.

3. Winch's version of the social relativity thesis

A more sophisticated version of the doctrine of the social relativity of truth, but one which I also reject, is the view which Peter Winch (1964) comes close to adopting, but does not quite adopt, in his paper "Understanding a

primitive society." This version of the doctrine differs from the naive version in that it does not claim *tout court* that if a proposition is accepted as true within a particular social group, then it is true. On this more sophisticated version of the theory, a proposition is true if and only if it satisfies certain fairly rigorous criteria which have to be satisfied before it can be accepted as true by the social group in question. While it is accepted that in many, if not most, cases the criteria for accepting the truth of a proposition in one social group do not differ substantially from those accepted in another, there are other cases where the criteria differ considerably from one society to another. In such cases, so it is alleged, we simply have to accept that what is true by the criteria that are accepted within one social group may be false by the standards accepted within another group.

I say that Winch "comes close to adopting" this version of the doctrine of the social relativity of truth and not that he actually does so, partly because he assures me (*personal communication*) that he does not and never has subscribed to this view, and partly because a careful reading of the text confirms that what he is claiming is socially relative is not so much the method of truth determination as what it is and is not rational or sensible to believe, given the background assumptions shared by a particular social group. Nevertheless, because he focuses on an example in which what is at issue is a particular method of determining the truth and falsity of certain propositions, it is not altogether surprising that he has been widely misinterpreted as holding the view which I have suggested he comes close to adopting. Moreover, since this is the conclusion someone might well be tempted to draw on the evidence he presents, and since there is no one else who one can readily cite as subscribing to what I am calling "the sophisticated version of the doctrine of the social relativity of truth," it is in this sense, with suitable apologies for thereby distorting the author's intention, that I propose to interpret Winch's argument.

Winch develops his argument in relation to the example of the beliefs and truth determination practices of a Central African tribe, the Azande, as recorded in the late Professor E.E. Evans-Pritchard's book *Witchcraft and Oracles and Magic among the Azande* (1937). In Zande society, as Evans-Pritchard describes it, questions of the form "Is *A* being bewitched by *B*?" are asked and answered either affirmatively or negatively by consulting what is known as "a poison oracle." A poison oracle is consulted by asking leading questions, addressed to the "oracle," of a kind to which a straight *Yes* or *No* answer can be given, while at the same time administering a special poison to a young chicken. Each question requires a new chicken which has not received the poison before. As each question is asked, the "oracle" is instructed to let the chick live if the answer is *Yes* and let the chick die if the answer is *No* or *vice versa* as the case may be.

The poison, which is a form of strychnine, is administered in a diluted form so that only about half the birds to whom it is administered actually die. But when it does act, it acts fast. Within a couple of minutes of the poison being administered, it will be clear either that the death agony has begun or that the bird has not been affected. Since the chances of the chicken dying or surviving are roughly 50/50, the poison oracle, considered as a decision-making procedure, operates rather like tossing a coin; though it can, no doubt, be rather more easily fiddled, given that the questioner, who is always a different person from the operator who administers the poison, is a good judge of the chicken's chances of survival and adjusts his questions accordingly.

Now it is quite clear that in our culture a procedure such as this would not be acceptable as a way of determining the truth value of any proposition, although we frequently use analogous procedures like tossing a coin or running a horse race in order to decide issues such as which side shall bat first in a cricket match or who shall receive the lion's share of the bets laid with the bookmakers and the totalisator. But it is important to recognize that it is not just the procedure for answering the question that we would reject, we would also reject the question the procedure is designed to answer. For us, the question "Is *A* bewitching *B*?" has no need of an answer. We just don't believe, as the Azande do, that people can influence each other's lives in this supernatural manner. Consequently for us, questions of the form "Who is bewitching *B*?" simply do not arise. No procedure is required for giving an answer to such questions. For us the issue is decided, *a priori* in favour of the answer "No-one", regardless of who the *B* in question is. Similarly we have a ready-made *a priori* answer to the question "Is *A* bewitching *B*?" which is invariably "No," regardless of what proper names are substituted for *A* and *B* in this sentence frame. But this is precisely the judgment which, as I interpret him, Winch thinks we are not entitled to make. On this view, we have no right to conclude that the Azande are mistaken in believing of some *A* and some *B* that *A* is bewitching *B*, precisely because we do not accept their criteria for deciding the truth or falsity of such statements, just as they presumably would not accept the criteria which lead *us* to conclude that witchcraft does not exist.

Now that argument might perhaps carry some weight, if it were the case that the Azande use different criteria from those that we use for deciding the truth or falsity of *all* the propositions whose truth or falsity they acknowledge. But in fact, as Evans-Pritchard repeatedly emphasizes in his book, in relation to the kind of common sense questions which arise for the Azande in the same way as they do for us, the criteria that a proposition must satisfy in order to be judged true by an Azande are no different from those required to satisfy us of the proposition's truth. To use one of Evans-Pritchard's

examples (1937: 69–70) when the Azande assert that the injuries suffered by a group of people on a particular occasion were due to witchcraft, they are not denying what is obvious to us, namely, that they were injured when the granary they were sitting under collapsed on top of them. Nor are they denying that the reason why the granary collapsed was that the termites had eaten the wooden poles that held it up; nor that the reason why the people were sitting under the granary was to shelter from the midday sun. All the Azande are doing is being good Leibnizians and demanding an answer to the question "Why did the granary fall down at the precise moment when those people were sheltering under it and not half an hour earlier or half an hour later, when they weren't or wouldn't have been?" This is a question which we would dismiss as a matter of pure coincidence, but which for the Azande requires an answer in terms of the influence of witchcraft.

On our understanding of the matter, to say that some aspect of the event is a matter of chance or coincidence is to say that there is nothing in the causal factors which brought about the event in question which requires that the event should take that particular form rather than some other form, in this case, nothing which required that the event should occur at that precise moment. It follows that since the Azande are claiming that there is a causal factor, namely witchcraft, which *does* require that event to occur at that time, rather than at some other time, it is clear that in terms of the logical principles we accept, the law of the excluded middle requires that either they are right and we are wrong or that they are wrong and we are right. In other words, our criteria for deciding the truth of propositions, which include the law of the excluded middle, require us to come down on one side of the fence or the other on an issue such as this. Moreover, there is no reason to think that, in this respect, the criteria for the truth of a proposition which the Azande accept are any different from ours. It is just that they come down on a different side of this particular fence from the side we come down on.

But even if it could be shown that the Azande operate with a different set of criteria when they apply the terms which the Zande-English Lexicon translates as *true* and *false* from those we use in applying in the English words *true* and *false*, we would not, I think, be entitled to claim that the Azande decide truth and falsity by a different set of criteria from those that we apply. The conclusion we would have to come to, I suggest, is that the Zande-English Lexicon has got it wrong, that these Zande words are not in fact their words for "true" and "false" at all, but, at best, the nearest equivalent that their language possesses. I would go further than this and claim that no word in any other natural language can be regarded as the equivalent in that language of the English word *true* unless one of the principles governing its application is the principle of non-contradiction.

The principle of non-contradiction rules out the possibility that, for the same *p*, both *p* and not-*p* be true. Consequently, by that criterion, no word in any other natural language could be accepted as equivalent to the English word *true*, if, by applying the criteria for deciding whether or not the term in question applies to a particular proposition, we find ourselves compelled to conclude, not just that what is believed in one language and culture is different from what is believed in another language and culture, but that the very same proposition is true by the standards of one language and culture and false by the standards of another. If *that* principle is accepted, as I am sure it must be, there is no room for what I am calling Winch's version of the doctrine that truth is socially relative. For if, by applying what are alleged to be procedures for establishing the truth of propositions in a given language and culture, the same proposition comes out true by those procedures and false by the procedures we accept as governing the application of the words *true* and *false* in English or any other natural language that uses the same conventions for its equivalent of *true*, we should be forced to conclude either that the procedures have been misdescribed or that they are not, in fact, procedures for determining what in English is called "the truth of a proposition."

But if I am right in thinking that the principle of non-contradiction is an essential ingredient in *any* set of criteria for deciding between what is true and what is false, there is no avoiding the conclusion that it must either be the case that the Azande are correct in believing that witchcraft in their sense exists or that we are correct in believing that it doesn't.

Nor do we have to rely simply on an argument, based on the vast numerical superiority of those who reject Zande beliefs in this respect over those who accept them, in order to justify our belief in the non-existence of Zande witchcraft influences. For we have the advantage that they do not have, of being literate and of thus being able, with Evans-Pritchard's help, to commit their beliefs to paper. This enables us to detect internal inconsistencies within those beliefs which are not apparent when they are communicated solely by word of mouth and operated within a complex system of social practices. For those inconsistencies I refer you to Evans-Pritchard's (1937) book, particularly pages 24–29 where he discusses inconsistencies in Zande beliefs about the inheritance of witchcraft in relation to vengeance magic, and Chapter VIII where he discusses the question "Are witches conscious agents?" (Evans-Pritchard, 1937: 118–133).

When confronted with such inconsistencies or other embarrassing consequences of the theory, an intelligent Zande theologian can easily devise some suitable piece of casuistry in order to wriggle out of the difficulty, just as our theologians do in similar circumstances. Indeed, Evans-Pritchard gives an example of just such a move on pages 24–25

where the relatives of a man who has been proved by the poison oracle to be a witch wriggle out of the uncomfortable implication of that conclusion, when it is combined with the doctrine that witchcraft is inherited in the male line, namely, that they too are witches, by accusing the mother of the witch of having committed adultery. This accusation, if true, would make the witch a bastard and hence not a blood relative in the male line. Such *ad hoc* special pleading may satisfy those who already accept the basic assumptions of the belief system, but it is hardly likely to persuade the unbeliever. It is true that, as Kuhn (1962) has pointed out, scientists often put forward essentially similar *ad hoc* saving hypotheses, when confronted by evidence inconsistent with existing theory; but at least, in this case, the scientific community is made uncomfortable by too frequent resort to devices of this kind, and is ultimately stimulated to undertake a radical rethinking of the problem, which, in turn, leads to what Kuhn calls "a paradigm shift" and "a scientific revolution." The fact that scientists are eventually compelled to rethink their position in the light of repeated disconfirmation, whereas magico-religious believers always find some way of reconciling the evidence with and thus retaining their original opinion, may provide some justification for preferring a scientific view to a magico-religious one in cases where the two conflict; but the problem of chauvinism with respect to truth remains, especially in the context of the history of science itself.

4. Truth as relative to linguistic convention

In attempting to devise a more plausible version of the doctrine that truth is socially relative, I shall take as my starting point the principle that the entities to which the adjectives *true* and *false* apply are what philosophers call "propositions." More controversial is the view I take of what a proposition is. I hold that a proposition or "thought," to use Frege's (1918) term, is a purely linguistic entity closely related to, but not identical with the sentence which, for the time being, is used, as we say, to "express it." It is not, as it has been represented by many writers in the so-called "cognitive" tradition (e.g. Fodor, 1987), an entity inside the heads of those who subscribe to or otherwise "entertain" it.

That propositions or thoughts are not identical with any one of the sentences used to "express" them is not disputed. No one would deny that the English sentence *All men are mortal* expresses the same proposition or thought as its equivalent in other natural languages, and as other equivalent English sentences, such as *Everybody dies sooner or later* or *In the long run we're all dead.* Moreover, there is no reason to prefer any one of these

sentences as a more apt or accurate way of expressing the proposition than any of the others.

What *is* controversial is the claim that, although thoughts and propositions are not identical with any particular sentence, there is nothing to a proposition or thought over and above the actual and possible sentences which are or could be used to say the same thing in different ways on different occasions. The notion of a proposition or thought as something over and above the particular sentences which express it I take to be a reflection of the phenomenon to which Noam Chomsky (1958, 1959 etc.) has repeatedly drawn attention, whereby sentences in natural language are seldom repeated word for word, but are constructed anew on each occasion of utterance. It follows from this principle that when we say "the same thing" on different occasions, we seldom repeat ourselves word for word. The reasons for this are not difficult to understand. If we are called upon to repeat what we have just said when talking to the same listener, it is because our previous attempt to communicate what we wanted to say has failed. It makes sense, therefore, to put it rather differently on the second attempt. Likewise, when saying "the same thing" to another listener in another context, changes need to be made in the way the sentence is formulated in order to allow for the differences both in context and in the information available to the particular listener which are liable to affect the listener's ability to understand what is said. Consequently, when saying "the same thing," both on the same and on different occasions, we almost invariably construct a slightly different sentence, and in some cases a very different sentence. Nevertheless, we are still saying the same thing in the sense that all these different sentences, when uttered in the appropriate context, "have the same meaning" and, if they are indicative sentences, the same truth conditions. In other words, if any one of these sentences expresses something true, then they all do.

In line with this notion I would propose to define a proposition or thought as what I propose to call an "intensional" or "modal class," that is to say, a class which includes possible instances as well as actual ones. This intensional or modal class comprises all possible sentence utterances in any natural language that now exists, may have existed in the past or may exist in the future whose common feature is that they are all indicative sentences, all have the same truth conditions and all identify the objects, states of affairs or events to which they refer in the same or corresponding ways.

Now I don't want to spend too much time discussing the qualification at the end of this definition concerning the way in which objects, events and states of affairs are referred to. The purpose of this qualification is to allow for the fact that sentences like *Ragusa is a port on the Adriatic* and *Dubrovnik is a port on the Adriatic* have the same truth conditions, but

occur as distinct propositions in an argument involving an identity statement which asserts that the two proper names involved have the same referent, viz. *Ragusa is a port on the Adriatic, Ragusa is the old name for Dubrovnik*, ERGO *Dubrovnik is a port on the Adriatic*. It is also designed to allow the identification of a sentence like *My toe hurts*, uttered by Arthur Jones on a particular occasion, the sentence *Your toe hurts* addressed to Arthur by someone else of that occasion, the sentence *Arthur's toe hurts* or *His* (i.e. Arthur Jones') *toe hurts* addressed by someone else to another person on the same occasion, *Your toe will hurt* addressed to Arthur an hour or so earlier by the doctor and *Your toe was hurting* addressed to Arthur by someone referring to the same occasion later, as all expressing one and the same thought or proposition.

The aspect of the definition I want to emphasize for our present purposes is the implication that what determines whether or not a given sentence is a member of the intensional or modal class all of whose members have the same truth condition is the operation of linguistic conventions, both semantic and syntactic, which govern both the kinds of sentence in which the words composing the sentence can occur in the natural language in question and the contexts in which the utterance of that particular sentence will have the relevant truth conditions.

They are conventions that, as far as our native language is concerned, we pick up unconsciously as we learn the language on our mother's knee[1]. They are never learned in the form of a verbally stated principle or rule. How could they be? We would have to have already learned the conventions before we could understand their verbal formulation. Many syntactic conventions still defy precise verbal formulation after much labour on the part of linguists and logicians; while in the case of semantic conventions, the nearest we can get to a verbal formulation is Tarski's (1930–1/1936/1956) convention according to which "'*it is snowing' is a true sentence if and only if it is snowing*" which only escapes being an empty tautology by using the device of quotation marks to draw a distinction between mentioning a sentence and using it.

This then is the version of the doctrine of the social relativity of truth which I want to defend. I maintain that whether or not a particular sentence in any natural language expresses something true, when uttered in a particular context, and what proposition or thought it expresses, when uttered in that context, is determined by the social conventions governing the putting together of words to form sentences of that language and the use of the sentences so formed to perform particular communicatory functions in particular contexts.

5. Some implications of this version of the social relativity thesis

Stated in this way the version of the social relativity thesis I am proposing appears reasonably innocuous and uncontroversial; but, as I interpret it, it has at least two highly controversial implications. One of these implications comes to light, when the notion of what a proposition is, on which it is based, is incorporated into the notion of "a propositional attitude,' as when we say of someone that they believe the proposition in question to be true or false, as the case may be.

For on the view I am proposing, it only makes sense to say of a living organism that it knows or believes that a particular proposition is true or false, if it has the ability under appropriate circumstances to understand and construct one or more sentences expressing the proposition in question in some natural language and is disposed either to assent to and assert or dissent from and deny the truth of the proposition so stated and to act accordingly.

I have been pursuing an implication of this view of the nature of propositional attitudes in a recent attempt (Place, 1981a, 1981b, 1982, 1983) to rehabilitate and reconstruct the behaviourist account of language proposed by B.F. Skinner in his book *Verbal Behavior* (1957). This is the implication that it is illegitimate to attempt a serious scientific explanation of the behaviour of animals, pre-linguistic human infants, and of human adults, in so far as the behaviour in question is not in fact verbally controlled, in terms which involve attributing one or more propositional attitudes to the behaving organism. For, to attribute a propositional attitude to an organism in such cases, given this definition of what a proposition is, implies either that the organism in question possesses linguistic skills which it manifestly does not possess, or, if it does possess those skills, that they are being deployed in controlling behaviour which does not in fact depend either directly or indirectly on the exercise of those skills[2].

The second controversial implication of the doctrine that truth is relative to linguistic convention appears when it is viewed as a response to the problem of cultural chauvinism in the sociology of knowledge. For, unlike what I am calling the naive and sophisticated versions of the doctrine that truth is socially relative, the doctrine that truth is relative to linguistic convention does not accept as true *any* proposition whose truth is accepted as a matter of common knowledge within a given culture, even if, as required by the sophisticated version of the doctrine, the proper truth determination procedures accepted by the culture have been followed. The only propositions whose truth is accepted as socially relative on this version of the doctrine are those which are *analytic* in the sense that their truth value (i.e., whether they are true or false) is determined completely and

exclusively by the syntactic conventions governing the structure of the sentence used to express them and the semantic conventions governing its constituent terms. For, although on this view the truth of *any* statement is, at least in part, determined by the linguistic conventions governing the use of the words making up the sentences used in its formulation, in the case of a factual or, as Kant (1781/1929) would say, "synthetic" statement, the truth value is also partly determined by the accuracy with which, given those conventions, the sentence depicts the way things are, were or will be in the universe of space and time which we all inhabit.

If a synthetic statement is false by the standards we currently accept, and that falsity is not a matter of using words in senses which are no longer current in contemporary culture, but is due to the fact that no such event or state of affairs as that which it describes has existed in the past, exists now or will exist in the future at the time and place indicated by the sentence, no change in the linguistic conventions governing the words composing the sentence is going to make it true, unless the effect of those changes is to alter entirely the event or state of affairs depicted by the sentence.

An example of a statement which was once accepted as a matter of common knowledge, but which is now known to be factually false, is the statement that the prophet Jonah was swallowed by a whale and lived to tell the tale. We know that this statement must be false, not only because no creature of the size and complexity of a human being could survive such an experience, but also because it is inconsistent with what we know of the whale's diet and digestive system. In this case there are no conceivable changes in the conventions governing the words used to formulate the sentence which would render it true. It always did, does and always will express a false proposition. Though to say *that* is not to deny the obvious fact that the criteria we rely on to determine the truth value of statements such as this are different from those which applied in the past and which still apply in other cultural settings. Nor does it require us to reject the claim that might be made that the Jonah story, though factually false, expresses some deep spiritual truth in mythological form.

The situation with respect to a proposition or statement which is analytic is very different. An analytic statement may be defined as an indicative sentence whose truth value, when uttered in the appropriate context, is determined exclusively and *a priori* by the syntactic conventions governing the construction of the sentence and the semantic conventions governing the application of its terms. Such a sentence will express a true proposition at one time and place and a false proposition at another time and place, or *vice versa*, only by virtue of changes in the linguistic conventions on which its truth value depends. When such a change occurs, we cannot say, as we can in the case of a synthetic statement, that what was formerly thought to be

true has now been shown to be false or *vice versa*. It is simply that the words that formerly expressed a true or false proposition, as the case may be, have ceased to do so.

However, this principle can be invoked as a way of avoiding cultural chauvinism in the history and sociology of science, only if we are allowed to recognize that the fundamental principles of a science at any stage of scientific development are analytic, in the sense already described, in which they are made true solely by virtue of the semantic conventions which currently govern the use of the words and symbols used to express them. On this view, when a scientific principle is abandoned as a result of what Kuhn (1962) calls "a paradigm shift," it is not that theoretical principles which were formerly thought to be true are now discovered to be false, it is simply that the conventions have changed so that sentences which previously expressed analytic truths no longer do so, while sentences which previously would have expressed analytic falsehoods, had they been formulated at all, or which were previously synthetic and subject to empirical determination, now express analytic truths.

Take for example the principle that whales are fishes. If we adopt the mediaeval definition of a fish as a creature which lives in the sea and propels itself through the water by means of fins and a characteristically paddle-shaped tail, the statement *whales are fishes* is an analytic truth, since, on that usage, the criteria for assigning an object to the class *whales* include those for assigning an object to the class *fishes*. But once we adopt the modern convention according to which a fish has to be cold-blooded and reproduce itself by means of eggs fertilized outside the body and which precludes anything that is a mammal from also being a fish, the sentence *whales are fishes* becomes an analytic falsehood. However, because of the changed conventions, the proposition which *whales are fishes* used to express, given the previous conventions, is not the same proposition as that which the same sentence now expresses.

This view runs counter to a great deal of fashionable doctrine in logic and the philosophy of language. In particular it runs counter to Kripke's (1972/1980) according to which natural kind terms like *whale* and *fish* "rigidly designate" the natural kinds they are the names of. It also runs counter to a great deal of Quine's philosophy, in particular to his well-known critique of the analytic/synthetic distinction in his "Two dogmas of empiricism" paper (Quine, 1953/1980). It is, consequently, to the examination of the argument of that paper that the remainder of this paper is devoted.

6. The analytic/synthetic distinction

The distinction between analytic and synthetic truth comes, needless to say, from Kant's (1781/1929) *Critique of Pure Reason.* As it is stated by Kant, a sentence is analytic if the description occupying the predicate position in the sentence expresses what has already been expressed by a description which occupies the subject position in the same sentence. A sentence is synthetic if the description occupying the predicate position expresses something that has not already been expressed by the description which occupies the subject position. Not surprisingly, Quine begins his critique of the distinction in his 'Two dogmas of empiricism' paper by pointing out that since Kant's formulation of the distinction presupposes the traditional view that all sentences are of subject and predicate form, this way of formulating the distinction is rendered obsolete by Frege's (1879/1960) subsequent discovery that the very large category of relational sentences are not in fact of this form.

But as Quine's argument unfolds, it becomes apparent that his criticism is directed, not just at Kant's formulation of the distinction, nor just at Frege's revised formulation of it in terms of what is and is not true by definition. Quine's target, it turns out, is a whole family of closely related, if not actually co-extensive, distinctions including the grandfather of them all, Aristotle's distinction between "necessarily true propositions" whose truth cannot be denied without self-contradiction and "contingent propositions" whose denial involves no contradiction, the distinction drawn by Leibniz, and following him by Hume, between "truths of reason" and "matters of fact" and finally the other distinction drawn by Kant between propositions whose truth is established *a priori* and those whose truth is established *a posteriori* in the light of observation.

Since these other distinctions do not rely, as Kant's formulation of the analytic/synthetic does, on the subject and predicate analysis of sentences, it is apparent that, in directing his attack on the analytic/synthetic distinction in the first instance, Quine is simply homing in on the weakest member of the family of alternative ways of formulating a single more fundamental distinction.

Quine himself puts the point as follows:

> One is tempted to suppose ... that the truth of a statement is somehow analyzable into a linguistic component and a factual component. Given this supposition, it next seems reasonable that in some statements the factual component should be null; and these are the analytic statements.

Stated, in my view more perspicuously, in terms of the notion of linguistic conventions governing the construction and use of sentences, the thesis is

that a statement is analytic, necessary and true *a priori*, if and only if, without being a statement *about* the meaning of words and expressions contained in it, its truth is determined completely and exhaustively by the linguistic conventions governing the construction and use of the sentence which is used to make it. By the same token, a statement is synthetic, contingent and true *a posteriori*, if and only if its truth is determined partly by the linguistic conventions governing the construction and use of the sentence used to make it and partly by virtue of a correspondence between the meaning of the sentence when uttered in a relevant context, as determined by those conventions, on the one hand and the way things actually are, were, might have been or possibly will be in the aspect of the world to which the sentence relates on the other.

7. Quine's critique of the analytic/synthetic distinction

Quine's argument against the analytic/synthetic distinction, conceived in the broad sense which I have described, begins by drawing the traditional distinction between the meaning or "intension" of a general term and its "extension." This distinction was first drawn in 17th century by the Port Royal logicians (Arnauld and Nicole, 1662) who contrasted the extension of a general term with what they called its "comprehension." Quine, quite correctly, links this distinction both to Frege's (1892/1960) distinction between the *Sinn* (usually translated as "sense") and *Bedeutung* (usually translated as "reference") of a singular term, and to Mill's (1843) distinction between "connotation" and "denotation."[3] The common feature of all these pairs of distinctions is that the extension, *Bedeutung*, reference or denotation of a term consists, in the case of a singular term, in a single actually existing object which is picked out by the term in question, and, in the case of a general term in the class of such objects which fall under it. The meaning, comprehension, intension, *Sinn*, sense or connotation of a term is that property of it which is grasped by someone who thereby understands it and is thus able to identify its *Bedeutung*, reference or denotation or an instance belonging to its extension. Quine uses the terms "meaning" and "extension" for the two sides of this family of distinctions. I prefer to use the term "intension" in place of "meaning," mainly because "meaning" is the natural translation of Frege's word *Bedeutung* which, as we have seen, is his word for the actually existing object picked out by a singular term (whence the more usual translation of the term in its technical uses is "reference").

According to Quine, and in this respect I cannot imagine that anyone would disagree with him, there is an intimate connection between the

analyticity of a proposition and the intensions of its terms. He illustrates this connection by contrasting two universal statements:

(1) *All creatures with hearts have kidneys;*
(2) *All bachelors are unmarried men.*

In both these examples the truth of the statement is bound up with the fact that the extensions of the pair of terms involved in the sentence coincide. Every creature with a heart is a creature with kidneys and *vice versa*. Every bachelor is an unmarried man and *vice versa*. But in (1) the two general terms *creature with a heart* and *creature with kidneys* differ in meaning or "intension." It is a simple matter of fact, established by observation, that the two predicates have the same extension, that every known species of organism that possesses a heart, also possesses kidneys. This, therefore, is an example of a synthetic truth. (2), on the other hand, is analytic. In this case the coincidence of the extensions of the predicates *bachelor* and *unmarried man* is determined without need of observation on the strength of a synonymy or equivalence of meaning or intension between the two predicates involved.

Quine's contention with respect to these examples is that whereas the notion of two expressions having the same or overlapping extensions is clear and precise, the notion that, in cases like that of *bachelor* and *unmarried man*, this is due to coincidence or overlap between the intensions of the two expressions is totally obscure. In support of this conclusion he cites four different criteria that have been proposed for deciding whether co-extension and class-inclusion arise analytically and necessarily or synthetically and contingently and concludes that none of them satisfy the requirement of helping us to decide a doubtful case, such as whether or not the statement *Whatever is green is extended* is analytic or synthetic. There is no need, I think, to discuss these criteria in detail here; since I would not want to dispute Quine's judgment that they all rely on an unanalyzed notion of the synonymy of two linguistic expressions, a notion which is inseparable from the concept of "analyticity" which the criteria are intended to elucidate. From this he concludes that "for all its *a priori* reasonableness, a boundary between analytic and synthetic statements simply has not been drawn. That there is such a distinction to be drawn at all is an unempirical dogma of empiricists, a metaphysical article of faith." (Quine, 1953/1980: 37).

8. A rebuttal of Quine's critique of the analytic/synthetic distinction

In order to rebut Quine's critique of the analytic/synthetic distinction, we need to recognize that Quine approaches the problem from the standpoint of what we may call an "extensionalist." For our present purpose, an *extensionalist* is someone who believes that classes/extensions exist independently of and prior to the classificatory activity of the human and, for that matter, the animal mind. Extensionalism in this sense contrasts with *intensionalism* or *conceptualism*. Intensionalism/conceptualism, as here conceived, is the doctrine that while particulars exist independently of human and animal conception and resemble one another in ways that invite human beings and animals who interact with them to classify them in some ways rather than others, they are formed into classes only by virtue of the intensions or concepts imposed on them by the mind. It goes without saying that if you believe, as I have argued in this paper that we can and should believe, that the concepts of human language are social constructions maintained by social convention, you are *ipso facto* committed to the intensionalist/conceptualist position.

Since, as an extensionalist, Quine believes that classes exist independently of human and animal conception, it is not surprising that he should be unimpressed by the intensionalist/conceptualist claim that the very existence of the classes which constitute the extension of a general term and the very possibility of making an identifying reference to the object picked out by a singular term depend on the intension of the general term and the sense of the singular term. We know, of course, from what Quine says elsewhere in his writings (e.g., 1953/1980: 14) that he is not favourably disposed towards this intensionalist/conceptualist position. But where, as in this passage, he explicitly discusses that view, he doesn't dismiss it as incoherent, as he seems to be doing in 'Two dogmas'. In that paper the intensionalist/conceptualist claim that there can be no extension without an intension or concept by which to sort members of the class from non-members is not even considered.

Of course to claim, as the conceptualist does, that there can be no extension without intension, no reference (*Bedeutung*) without sense (*Sinn*) is not by itself sufficient to explain how extension and reference are supposed to be generated by intension or sense. It may well be, therefore, that what Quine is claiming with respect to the intensionalist/conceptualist position, though he does not say so, is that no clear account has been given of how this result is supposed to be achieved. But if *that* is what he is claiming, he is surely mistaken. For suppose, as the intensionalist would encourage us to do, that we take the intension of a general term to consist in the criteria employed by a competent user of the term in deciding whether

or not a given instance does or does not belong to its extension; and suppose also that the sense of a singular term consists in the criteria employed by a competent user of the term in identifying its reference; it is abundantly clear that in the case of the examples Quine discusses, the criteria by which we decide whether or not a creature has a heart are quite different from the criteria by which we decide whether or not it has kidneys; whereas it is equally clear that the criteria for deciding whether or not someone is a bachelor are indistinguishable from those we use in deciding whether or not someone is a man who has not been married before.[4]

We are now in a position to test the principle that a statement is analytic if the criteria for assigning an object to the extension of one predicate include or coincide with those for assigning an object to the extension of the other by applying it to the sentence *Whatever is green is extended* where, according to Quine, it is not clear whether the statement is true analytically or synthetically. If we do this, it at once becomes apparent why this is a difficult and puzzling case. For, although it seems somehow self-contradictory to postulate an unextended green object, it doesn't seem right to say that whether or not an object is extended is among the criteria we use in deciding whether or not it is green in the way that whether or not a liquid satisfies the formula H_2O is, for the chemist at least, not just one of the criteria, but the sole criterion for deciding whether or not it is water. Nevertheless, it seems right to say that there is a linguistic convention whereby the predicate *green*, when used as a colour word, is restricted in its application to extended substances and their surfaces; and, if we apply the principle that a statement which is true solely by virtue of linguistic convention is analytic, that makes the statement *Whatever is green is extended* an analytic proposition. Quine, of course, would retort that the notion of a linguistic convention is just as obscure as the notion of analyticity which it is supposed to illuminate. But if, as seems reasonable, it is accepted that conforming to a social norm or convention is a matter of avoiding behaviour which the social group (the linguistic community in this case) rejects as unacceptably deviant, we can perhaps use, as positive evidence of the existence of such a norm or convention, the results of what I have called elsewhere (Place: forthcoming) an "ethnomethodological thought experiment" in which the reader or listener is invited to imagine the consternation that would be provoked within the linguistic community by the suggestion

(a) that a certain mathematical point is green, or
(b) that a straight line, in the sense of the shortest distance between two such points on a plane, could likewise be green.

However, to claim that there is evidence for the existence of a linguistic convention which forbids the ascription of colour predicates to non-extended objects is not to deny that underlying that linguistic convention there is a contingent fact about the physics of light, namely, that, as far as we know, photons can only reach the eye of an observer, if they are emitted from and/or reflected by some kind of extended object, and that, consequently, it is only such objects that can be distinguished by their colour.

9. Conclusion: The mutability of analytic truth

By way of conclusion I want to emphasize that, in arguing for a rehabilitation of the analytic/synthetic distinction, I am not arguing for the immutability of analytic truths. Indeed the whole object of the exercise is to be able to allow that, as semantic conventions change, so some of the sentences which previously expressed an analytic truth cease to do so and sentences which were previously synthetic become analytic. Moreover, I do not wish to deny that, in the case of the concepts and theories of science, these changes come about as a result of cumulative empirical discoveries which render the old ways of talking no longer convenient and appropriate. But I still want to insist that, given the previous semantic conventions, the old sentences are still true, analytically, necessarily and *a priori*. It is just that the conventions that make them true have been rendered obsolete by subsequent empirical discovery, just as the conventions which make many of our present scientific principles analytically true will no doubt be rendered obsolete by empirical discoveries in the future. But this process whereby analytic principles which comprise the conceptual framework or paradigm within which scientific research is conducted are rendered obsolete by subsequent scientific discovery should not be confused with the process whereby low level hypotheses are falsified without disturbing the conceptual framework within which those hypotheses are formulated and without disturbing the analytic principles in terms of which the conceptual framework is itself formulated. There is nothing in this view that requires us to say either that the analytic principles of the past are now known to be false or to concede that our present analytic principles may be falsified in the future.

Notes

1. The traditional empiricist view that, as children, we learn to speak and to understand what is said to us has been out of favour in recent years, due mainly to the impact of the serial digital computer as a model for the functioning of

the human brain. With the advent of the alternative parallel distributed processor (PDP) model, (Rumelhart, McClelland and the PDP Group, 1986), the empiricist theory of language acquisition is beginning to make a come back, to relief of those of us who have remained faithful to it.

2. It should be noted that, for the purpose of this argument, a propositional attitude is what is naturally expressed in ordinary language by an embedded indicative sentence in *oratio obliqua*, typically introduced by means of the pronoun *that* and its equivalents in other languages. By this criterion 'wanting something' and 'intending to do something' do not describe propositional attitudes.
3. Mill's distinction applies to both general and singular terms. The only exception is in the case of a proper name which denotes its bearer, but lacks connotation.
4. It should be emphasized that in speaking of "criteria" in this connection there is no implication that such criteria are always or even commonly specifiable in some kind of verbal formula or definition. On that point Quine is entirely right. But the notion that we can and frequently do use criteria we cannot specify in words is not an incoherent notion. It is precisely the kind of thing which a parallel distributed processor (PDP) learns to do (see note 1 above).

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