Ayer on the a priori and linguistic conventions

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1. The problem of a priori knowledge

Language, Truth, and Logic is a defense of a thoroughgoing empiricism, not only about what is required for a belief to be justified or count as knowledge, but also about what is required for a sentence to have a meaning at all. But a priori knowledge seems to pose a problem for the view that all knowledge, and thought, is based in experience:

> "Having admitted that we are empiricists, we must now deal with the objection that is commonly brought against all forms of empiricism; the objection, namely, that it is impossible on empiricist principles to account for our knowledge of necessary truths. . . .
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> . . . whereas a scientific generalization is readily admitted to be fallible, the truths of mathematics and logic appear to everyone to be necessary and certain. But if empiricism is correct no proposition which has a factual content can be necessary or certain. Accordingly the empiricist must deal with the truths of logic and mathematics in one of the following two ways: he must say either that they are not necessary truths, in which case he must account for the universal conviction that they are; or he must say that they have no factual content, and then he must explain how a proposition which is empty of all factual content can be true and useful and surprising." (72-3)

One way of seeing the force of this dilemma begins by noting that, for the empiricist of Ayer's kind, a proposition has meaning (factual content) only by being associated with certain sense experiences/observation sentences. But such a proposition can only be known by knowing the truth of these observation sentences; and such knowledge is always a posteriori. So it looks like any proposition with factual content will be a posteriori and contingent; thus the dilemma.

But the dilemma can also be raised independently of Ayer's verificationism:

> "If neither of these courses proves satisfactory, we shall be obliged to give way to rationalism. We shall be obliged to admit that there are some truths about the world which we can know independently of experience . . . [a]nd we shall have to accept it as a mysterious inexplicable fact that our thought has this power to to reveal to us authoritatively the nature of objects which we have never observed." (73)

That is, the existence of substantive a priori knowledge would seem to lead to a kind of rationalism which Ayer (and others) thought was incompatible with an empiricist, scientific views of human thought and language.

This sort of rationalism would also undermine the basis for verificationism:

> "It is clear that any such concession to rationalism would upset the main argument of this book. For the admission that there are some facts about the world which could be know independently of experience would be incompatible with our fundamental contention that a sentence says nothing unless it is empirically verifiable." (73)

The idea here is that if we admit the possibility of non-empirical knowledge, we thereby admit that we can have some non-experiential access to facts about the world. But, once this is admitted, there seems no reason to believe that a sentence can have meaning only by bearing a certain relation to observation sentences.

2. Necessity and the a priori

Ayer in this chapter constantly switches back and forth between talking about which propositions are *knowable a priori* and which propositions are *necessary.*

Ayer pretty clearly assumes that a claim is necessary if and only if it is a priori. This assumption that the categories of the a priori and the necessary are co-extensive has a long tradition; plausibly, one can find it in Hume (where both the necessary and the a priori are matters of the relations of ideas) and in Kant.

And there are a few intuitively appealing arguments that, together, make this position plausible:

- *If a proposition is a priori, it must be necessary.* If a proposition is a priori, then one can know it to be true without any experience of the world. But if one can know a proposition to be true without any experience of the world, then the truth of that proposition must not depend on any contingent features of the world – for, if it did, one would have to check whether those contingent features of the world in fact obtained. But in that case it would be a posteriori.

- *If a proposition is necessary, it must be a posteriori.* If a proposition is necessary, then it is true independently of the way the world happens to be. But then how can it be necessary for experience – which only delivers information about how the world happens to be – to play any role in explaining how we can know that proposition?

We will for now take the plausibility of these arguments at face value, and follow Ayer in accepting the equivalence of necessity and the a priori. This still leaves Ayer the problem of explaining how any sentences can belong to this category.

3. Mill's radical empiricism

An example of a philosopher who took the first horn of Ayer's dilemma for the empiricist was John Stuart Mill, who (at least on Ayer's interpretation) regarded the truths of logic and mathematics to be both a posteriori and contingent. On this interpretation, Mill thought of these propositions as being empirical generalizations of which we could be fairly certain because of the large number of observed instances which confirm them. But they are not necessary, since they could in principle be false; and they are not a priori, since we know them to be true on the basis of observation. (In the case of arithmetic, the observations in question might be observations of quantities of things.)

Ayer argues that Mill mistakes the nature of propositions of mathematics. These are, according to Ayer, special propositions; we do not confirm them to be true by observation, but rather stipulate that they are true. He says,

> "The best way to substantiate our assertion that the truths of formal logic and pure mathematics are necessarily true is to examine cases in which they might seem to be confuted. . . . [In such cases] one would adopt as an explanation whatever empirical hypothesis fitted in best with the accredited facts. The one explanation which would in no circumstances be adopted is that ten is not always the product of two and five. . . . And this is our procedure in every case in which a mathematical truth might appear to be confuted. We always preserve its validity by adopting some other explanation of its occurrence.
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> ...The principles of mathematics and logic are true universally simply because we never allow them to be anything else."

This indicates that such principles are different in kind than empirical generalizations, because our way of knowing these principles is different from our knowledge of such generalizations.

4. Ayer's linguistic explanation of the a priori

A further, positive thought suggested by this passage is that we simply *stipulate* that these claims are true: we say that they are to mean whatever is required for them to be true.

Ayer tried to capture this by saying that the truths of logic and mathematics were *analytic*, in a sense which could explain their status as a priori. Our next task is to understand this explanation of the a priori.

4.1. Analyticity as truth by definition

Ayer defines analyticity as follows:

> ". . . a proposition is analytic when its validity depends solely on the definitions of the symbols it contains, and synthetic when its validity is determined by the facts of experience." (79)

Ayer's strategy is twofold: (i) show that a prioricity and necessity are nothing beyond analyticity, and (ii) show that the notion of analyticity should be acceptable to the empiricist.

4.2. How the analyticity of a propositon can explain its a prioricity

Suppose that Ayer is right, and that all truths of mathematics are true by definition. How could this explain their a prioricity?

The idea is that to understand a proposition which is true by definition, one must know the definitions of the relevant terms. And, in the case of analytic sentences which are true by definition, this knowledge of the definitions of terms is enough to show that they are true. Ayer seems to give this kind of explanation when he says:

> "If one knows what is the function of the words 'either,' 'or,' and 'not,' then one can see that any proposition of the form 'Either p is true or p is not true' is valid." (79)

The basic idea here seems to be that knowing the function of words – in particular, knowing their definitions – can, in the case of analytic propositions, be enough to know the truth of a sentence.

One might reasonably ask, though, for a little more detail here. Suppose, with Ayer, that all necessary and a priori truths are knowable in virtue of the meanings of the words the relevant sentences contain. Still, doesn't this leave a sort of knowledge — knowledge of the meanings of words — unexplained?

One answer to this question which is suggested by Ayer's text is the following: our knowledge of the meanings of words like "or" is a matter of deciding on a certain rule for their use. Understanding "or" just is a matter of *deciding* or *stipulating* that a certain class of sentences will all be true. (Equivalently, one could think of it as a metter of simply deciding or stipulating that a certain class of inferences will be valid.)

There seems to be no problem, from an empiricist point of view, with knowing what stipulations one has made. But then, the thought goes, there can be no problem, from an empiricist point of view, with knowing the truth of sentences which are guaranteed by those stipulations to be true. And if all necessary and a priori truths are in this class, this means that there can be no problem with our knowledge of necessary and a priori truths.

4.3. How can analytic truths be surprising?

One of the intuitive facts which stands in the way of a treatment of all mathematical and logical propositions as having no factual content is the fact that these propositions can often be surprising. How can we account for this, if to learn the truth of a mathematical proposition is not to learn about some new and surprising fact?

Ayer says:

> "When we say that analytic propositions are devoid of factual content, and consequently that they say nothing, we are not suggesting that they are senseless in the way that metaphysical utterances are senseless. For, although they give us no information about any empirical situation, they do enlighten us by illustrating the way in which we use certain symbols. . . . there is a sense in which analytic propositions do give us new knowledge. They call attention to linguistic usages, of which we might not otherwise be conscious, and they reveal unsuspected implications in our assertions and beliefs." (79-80)

Ayer is suggesting that, since analytic truths are true in virtue of certain linguistic facts – the definitions of expressions in analytic sentences – coming to know an analytic truth can bring us to awareness of these linguistic facts.

But, one might ask, even if this is so, how can definitions surprise us? Aren't the linguistic facts in question trivial ones that everyone knows? In the end of this passage, Ayer offers an answer to this question: even if we know the definitions in question, the definitions might have consequences which we do not immediately recognize. Ayer expands on this point later:

> "The power of logic and mathematics to surprise us depends, like their usefulness, on the limitations of our reason. A being whose intellect was

> infinitely powerful would take no interest in logic and mathematics. For he would be able to see at a glance everything that his definitions implied, and, accordingly, could never learn anything from logical inference which he was no fully conscious of already. But our intellects are not of this order." (85-6)

This doctrine gives rise to a puzzle, though. Analytic sentences are supposed to be necessary ('universally valid'); but facts about linguistic rules are contingent. After all, we could have decided to use expressions in our language differently and, in par- ticular, could have defined various expressions differently. So if analytic sentences are about linguistic rules, how can they be necessary (as they must be, if mathematical and logical truths are to be analytic)?

Ayer gives his answer to this puzzle in the Introduction to the 2d edition of *Language, Truth, & Logic*:

> "It has, indeed, been suggested that my treatment of a priori propositions makes them into a subclass of empirical propositions. For I sometimes seem to imply that they describe the way in which certain symbols are used, and it is undoubtedly an empirical fact that people use symbols in the way that they do. This is not, however, the position that I wish to hold ...For although I say that the validity of a priori proposition depends upon certain facts about verbal usage, I do not think that this is equivalent to saying that they describe these facts . . .
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> . . . [An analytic] proposition gives no information in the sense in which an empirical proposition may be said to give information, nor does it itself prescribe how [the terms in question are] to be used. What it does is to elucidate the proper use of [these terms]; and it is in this way that it is informative." (16-17)

One might say that, in Wittgenstein's terminology, analytic propositions show the way that certain symbols are used, but do not say that they are used that way. They are informative in virtue of showing this.