Ayer on necessity and the a priori

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1 'All necessity is linguistic necessity'

One traditional way of partly identifying the subject matter of philosophy is to identify it as a discipline that yields truths which are a priori and necessary. So far in this course, we have been discussing some of the notable successes of early analytic philosophers in solving philosophical problems like the problem of negative existentials and the problem of multiple generality. Some these successes led to a view of *philosophy as linguistic analysis*.

If you combine these views — that philosophy consists of linguistic analysis, and that it yields necessary and a priori truths — then it is natural to move to the view that necessity and the a priori are somehow explicable in terms of the structure of language.

Throughout the course, we will be looking at connections between developments in the philosophy of language and views of the nature of necessity and the a priori. The view which Ayer defends in this chapter, which can be expressed in slogan form as the view that *all necessity is linguistic necessity*, is the first of these.

2 Empiricism and the problem of a priori knowledge

Ayer's *Language, Truth, & 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)

There are a number of hidden premises behind the formulation of this dilemma. Recall 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.

As Ayer notes, this dilemma has important consequences:

> "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)

This state of affairs would be unsatisfactory; we would then have a kind of failure of philosophy to explain some of the most interesting facts about our mental lives. But it would also have strategic consequences for Ayer's attack on metaphysics:

> "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.

3 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. Though this was not widely recognized in Ayer's time, it is important to note that these two categories are at least conceptually distinct. To say that a sentence expresses a necessary truth is to say that, no matter how the world had turned out, what that sentence says could not have been false. To say that a sentence expresses an a priori truth is to say that one can know what the sentence says to be true without relying for one's justification on any experience of the world.

Ayer pretty clearly assumes that a claim is necessary if and only if it is a priori. There are a few intuitively appealing arguments that 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 priori. 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?

There are grounds for doubting both of these arguments. But we will for now take the plausibility of these arguments at face value, and follow Ayer in accepting them. The important point at present is that, strictly, Ayer has two distinct facts to explain: (i) our ability to know the propositions of logic and mathematics a priori, and (ii) the necessity of the propositions of logic and mathematics.

4 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 mathematics, the observation in question might be observation 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 simple empirical generalizations. The 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.

5 Ayer's linguistic explanation of the a priori

5.1 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)

Immediately after this, though, Ayer seems to define analyticity in terms of a prioricity; he says "the proposition 'Either some ants are parasitic or none are' is an analytic proposition. For one need not resort to observation to discover that there are or are not ants which are parasitic" (79). But it seems that the most charitable reading is to regard this as a mis-step: it is analyticity that is brought in to explain the a priori, not the other way around. We should regard Ayer's account of analyticity as truth by definition as the fundamental one.

5.2 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.

5.3 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 particular, 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.

We can also understand Ayer's point in terms of the distinction between what sentences mean, and the information that those sentences can be used to convey on certain occasions of use. Ayer's point can be seen as a special case of the general point that the latter often exceeds the former.