

28. KRIPKE'S CONTINGENT *A PRIORI* AND NECESSARY *A POSTERIORI*

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ABSTRACT. We think that Kripke's arguments that there are contingent *a priori* truths and that there are necessary *a posteriori* truths about named and essentially described entities fail. They fail for the reasons that there are ambiguities in each of the three cases. In the first case, what is known *a priori* is not what is contingent. In the latter two cases, what is necessary or essential is not what is known *a posteriori*.

In *Naming and Necessity*¹ Kripke challenges the traditional connection between *a priori* and necessary truths and between *a posteriori* and contingent truths. In particular, he argues that there are contingent truths that we can know *a priori* and necessary truths that we can know *a posteriori*.

We think that these arguments fail and that they fail for parallel reasons.

Contingent *A Priori*

Kripke's Argument

In the case where someone fixes the reference of a name by means of a description, Kripke claims that such a person can know a contingent truth by *a priori* means.

One example he gives is that of fixing the reference of 'meter'.

Consider the sentence (I) "The length of stick S at time T is one meter". Now someone could use (I) to fix the reference of the length of a meter. Kripke claims that, when the speaker did that, (I) expressed a contingent truth about S. The reason for saying this is that it is a contingent fact about S that it had the length it did at time T. Many things might have happened to change the length that it had at that time. In other words, S might not have been a meter long at time T. Thus it is a contingent fact about S that it is a meter at T. Kripke also claims that the speaker can know that (I) is true *a priori*. The reason for this is that the speaker knows without making an empirical investigation that S is one meter. S/he knows automatically that S is one meter. So (I) ex-

presses a contingent truth and can be known by a *priori* means. Thus a contingent truth can be known *a priori*.

Our Reply

We grant, for the sake of argument, that the speaker knows some fact *a priori*. And we further admit that it is a contingent fact about S that it had the length that it did at T. What we deny is that they are the same fact. Instead, we claim that what the person knows *a priori* is, given his/her situation, necessarily true. And, if s/he knows the contingent fact about S's length, s/he knows it by ordinary empirical means.

To put the matter simply, we argue that sentences such as (I) are ambiguous. We claim that there are two readings for (I). (A) "The length of stick S at time T is a certain length, some 39 inches". (B) "The length of stick S at time T is named 'meter'".

The ambiguity arises because (I) can be used either to describe S or to name it. When it is used to describe, it asserts that S has a certain length, namely, some 39 inches. But when it is used to name S, it doesn't describe S—it doesn't say it has a certain length—it says that, whatever length it is, it is given the name 'meter'.

Here is our argument for these claims. Consider this example of fixing the reference. In one room we have a machine that generates sticks of random lengths. In another room we have someone who is going to fix the reference. This person does not see the sticks as they emerge from the machine. So this person says, (II) "The length of the next stick, S₂, is one mard". Let us suppose that S₂ when it arrives is 22 inches long.

Now what does this case prove? First, it shows that Kripke was wrong when he said that such cases of fixing the reference give us *a priori* contingent knowledge. In our case the person who fixes the reference of 'mard' has the same *a priori* knowledge as the person who fixed the reference of 'meter'. S/he knows just as automatically and without further empirical investigation that the next stick will be a mard. But, though he has the same *a priori* knowledge, s/he lacks the contingent knowledge. S/he doesn't know how long a mard is. S/he doesn't know if it is longer or shorter than a meter. S/he can't pick one out. S/he, like the rest of us, would have to be told which length s/he had named 'mard'. For there is no implication in either direction. The *a priori* method that Kripke suggests for knowing that stick S is a meter, viz., naming S's length 'meter', does not show that the length of S could be otherwise. That is, the *a priori* method does not show that the length of S is contingent. Nor does it go the other direction. Knowing that S's length is contingent, that is, that the length could be otherwise, is an *posteriori* affair. One observes S, or the kind of stuff S is made of, changing length under various circumstances. There is no implication from this that the length of S could be known by a *priori* means. So Kripke was wrong to think that this sort of a *priori* knowledge could be knowledge about contingent matters or *vice versa*.

But our case also shows that sentences such as (I) and (II) are ambiguous. The reference fixer knows automatically that the next stick will be a 'mard'; thus s/he knows that (II) is true. But s/he doesn't

know that S2 is 22 inches long, so s/he doesn't know that (II) is true. We think the answer to this paradox is to recognize that these sentences are ambiguous. There are two propositions here. One is contingent and the other is known *a priori*.

So far we have shown that these sentences are ambiguous, but we want to show that the second, metalinguistic, reading is what the person knows *a priori*. We don't have a formal proof of this. But we think that, if you examine what a person knows *a priori* in these cases, you will see that it is this metalinguistic reading.

As we said, this ambiguity arises because sentences such as (I) and (II) can be used both to describe objects and to name them. Since the meter has already been named, when we use (I) now, we are describing the length of the stick. In this case (I) asserts that it has a certain length. What makes (I) true in these cases is whether the stick has this length. But, when (I) was used to fix the reference for a meter, it wasn't describing the stick. It didn't assert that the stick had a certain length. Instead, the fixer was giving the name 'meter' to the length of that stick, whatever it was. This is most clearly seen in our case of naming the meter. Suppose that, instead of being 22 inches long, the next stick had been 33 inches. In that case 'meter' would have named that length. Whatever the length of the next stick, that length would be given the name 'meter'. This is what the person who gives the name is doing and this is what that person knows *a priori*.² And this is necessarily true, given the fact that he is naming the length of the stick.³

Let us give one further argument that there are two readings for (I) and (II). We appeal to the thesis that every proposition is equivalent to its corresponding sentence(s). Of course, the thesis is not true in general. For example, if the words of the sentence were to have different meanings from those they actually have, the equivalence would fail. In present-day English, however, (1) the word 'meter' is a name, (2) it names meter, and, further, (3) in the present case the length of S at T (TLS) is a meter (M).

Hence

(TLS = M) iff ('M' names TLS).

That is, since there is an appropriate word, 'M' ((1) above), and the relations are right ((2), (3) above), the equivalence holds. And—here is the crucial point—its right side is the suspect metalinguistic reading.

The same account works for the other cases of fixing the reference that Kripke mentions, for example, that water boils at sea level at 100 degrees Centigrade. The contingent fact here is that boiling water would cause the mercury in a thermometer to rise as high as it does. Various things could have been different, so that the mercury might have risen to a different height. But the person who fixed the reference needn't have known this. S/he might well have learned it afterwards by experimenting. What s/he knew *a priori* was that whatever height the mercury rose to when placed in boiling water was going to be given the name '100 degrees'. The other example Kripke gives is that of fixing the reference of 'Neptune' by means of a definite description. The contingent fact here was that this particular planet was the cause of the per-

turbations in the orbit of Uranus. But when Leverrier named Neptune, he didn't know that the planet was doing it. He knew only that, whichever planet it was, it had been given the name 'Neptune'.

We put the matter in terms of ambiguity. That may be incorrect. Instead of saying that there is one sentence with two meanings, perhaps we should say that there are two separate but similar sentences which are confused. So, in the case of the meter, one sentence would be 'S is one meter', which is used to describe S, and the other, 'the length of S is named 'one meter'', which is used to name S. Still, however the point is made, the objection to Kripke remains the same: There are two facts here: one that is contingent and is known by a *posteriori* means and the other that is necessarily true and is known by a *priori* means.

Necessary A Posteriori

There are two cases. One involves the identity of an object named by two proper names, e.g., that Hesperus is Phosphorus. The other involves the identity of kinds, such scientific identities as that water is H₂O or that gold is 79 protons. Let us consider them separately.

Kripke's Argument Regarding Identities with Proper Names

Kripke argues that, if Hesperus is the same object as Phosphorus, then necessarily Hesperus is Phosphorus. This is so because names are rigid designators. Thus we use 'Hesperus' as the name of the same object in all possible worlds. We also use 'Phosphorus' as the name for the same object in all possible worlds. Therefore, if 'Hesperus' and 'Phosphorus' refer to the same object, then they will refer to that object in every possible world in which it exists, which is another way of saying that necessarily Hesperus is Phosphorus. But the fact that Hesperus is Phosphorus is something that has been discovered empirically. Thus a necessary truth is known a *posteriori*.

Our Reply

Again we don't deny that there is a necessary truth. Nor do we deny that an empirical discovery has been made. What we do deny is that the empirical discovery is a necessary truth. And again we think that the problem is one of ambiguity.

'Hesperus is Phosphorus' can express the necessary truth that the object, in this case Venus, is self-identical. Or it can express the contingent fact that the same object has been named 'Hesperus' and 'Phosphorus'.

Consider this situation. Imagine our world prior to the discovery that Hesperus is Phosphorus. Venus would be self-identical. This fact could have been known by people, even though they had yet to make the discovery that Hesperus is Phosphorus. In fact this could be known by people even if there were no names for Venus. They could point to it and say that it is self-identical. Since people already knew, prior to the discovery that Hesperus is Phosphorus, that Venus is self-identical, that can't be what they discovered when they discovered that Hesperus is

Phosphorus. If it were, then they would be discovering what they already knew to be true.

This shows that Kripke is mistaken in thinking that this sort of empirical discovery is the discovery of a necessary truth. It also shows that 'Hesperus is Phosphorus' is ambiguous. Prior to the discovery we want to say that they know that Hesperus is Phosphorus, because they know the necessary truth that Venus is self-identical. But, since they haven't yet made the discovery, we also want to say that they don't know that Hesperus is Phosphorus. So there must be two facts: one that is known prior to the discovery and the other that is known when the discovery is made.

Our reason for saying that the second fact is the metalinguistic one comes from looking at what is learned when the empirical discovery is made. People learned that Hesperus and Phosphorus are the same object. As we have seen, this doesn't mean that they learned that the object was self-identical, because they already knew that. We think that what they have learned is that the object named 'Hesperus' is the same as the object named 'Phosphorus'. Or, to put it another way, it was learned that Hesperus had the property of being named 'Phosphorus', or vice versa. And this is a contingent fact, since the planet needn't have been given the names it was given--nor even named at all.

Another way to see this is to consider Frege's problem of how 'a = a' and 'a = b' can have different cognitive content when they refer to the same fact. Kripke seems to have no answer to this problem. On the one hand, he wants to say that 'a = b' expresses a necessary truth. But, when you try to explain what we learn when we learn that a = b, you end up talking about the contingent fact concerning the names of the object.

Kripke's account of this appeals to what has been called the causal theory of names. For 'Hesperus' and 'Phosphorus' the story goes like this. Some ancient pointed at a heavenly body one evening and said, "Let's call that heavenly body 'Hesperus'". And that person (or some other) pointed at a heavenly body one morning and said, "Let's call that heavenly body 'Phosphorus'". Both names stuck and were passed on to other people successively down to our times. So, when we say, 'Hesperus', we intend, in effect, by the chain of successive passings-along, whatever heavenly body that ancient named 'Hesperus' way back then. And, when we say, 'Phosphorus', we intend whatever heavenly body the (other) ancient named 'Phosphorus' way back then.

But now notice that, if the causal theory is to be used to explain the different cognitive content of 'Hesperus is Hesperus' and 'Hesperus is Phosphorus', reference to the names, 'Hesperus' and 'Phosphorus', is, or at least would seem to be, essential. The account presumably would be that the heavenly body named 'Hesperus' is the same as the heavenly body named 'Phosphorus'. But then the names 'Hesperus' and 'Phosphorus' play a crucial role in the cognitive content of 'Hesperus is Phosphorus'. For, if we ignore that aspect of the matter and consider 'Hesperus' and 'Phosphorus' as *unquoted* words in the sentence, they both simply represent the one thing, Venus. Then there is no way to explain the different cognitive content of 'Hesperus is Hesperus' and 'Hesperus is Phosphorus'.

Let us now consider how our view differs from other similar views that Kripke rejects.⁴ Kripke rejects the view that Hesperus might not have been Phosphorus. If Hesperus and Phosphorus are identical, then they are necessarily identical. But we don't deny this. What we deny is that this is what is learned when it is learned that Hesperus is Phosphorus. What we claimed is learned is that the object named 'Phosphorus' is the same object as the one named 'Hesperus', and, though this is contingent, it is not incompatible with the objects necessarily being the same. Our argument for this is as stated above.

Another way to see this is to consider a world where Venus existed, but where there were no names for it. Though we would describe such a world as one in which it were true that Hesperus is Phosphorus, it would be impossible to make the empirical discovery that was made when it was discovered that Hesperus is Phosphorus. We take this to be strong evidence that such a discovery was not about the necessary fact that the planet is self-identical but the fact that the same planet had these two names.

An objection to our view is that it would seem possible to have the same situation without any names; thus we must be wrong to say that there is this contingent fact involving names. Suppose we have someone who doesn't use names, but sees and identifies Venus both in the morning and the evening. Now, on our view, there should be some contingent metalinguistic fact about names that such a person is ignorant of. But that can't be the case because the person doesn't use names. Our reply is going to be that such a person would lack a knowledge similar to that we lacked prior to the discovery that Hesperus is Phosphorus.

Such a wordless one must identify the planet in some way. S/he must designate the planet either rigidly or non-rigidly. However s/he does it, the contingent fact that s/he will be ignorant of is that the planet that s/he designated in one way is the same planet that s/he designated in some other way. This is a contingent fact and is the same one that we learned when we made the empirical discovery that Hesperus is Phosphorus. To be exact, we should say that our view is that the contingent fact that we learn in such cases is that the object that was (rigidly or not) designated in one way is the same object that was (rigidly or not) designated in another way. Most often this designation is done by means of names, as in the case of 'Hesperus is Phosphorus'. And thus we said that what is learned in that case is that the same object is designated by two names. But we suppose it is possible for the designation to be done with something other than names, in which case the contingent fact learned will be that the same object is designated in these two different ways.

Kripke's Argument about the Identity of Kinds

Kripke argues that, since 'gold' and 'element with atomic number 79' both are rigid designators, and since they both designate the same referent, the sentence (G), 'Gold is the element with atomic number 79', is a necessary truth. (That is another way of saying that gold is necessarily the element with atomic number 79. Or that atomic number 79 is the essence of gold.) Then he says that it was an empirical discovery

that gold had such an atomic number. Hence, a necessary truth about gold was learned a *posteriori*.

Our Reply

We admit that gold has an essence and that, if atomic theory is correct, atomic number 79 is the essence of gold. We further admit that it was an empirical discovery that gold has atomic number 79. What we want to argue is that these two are different facts and that the empirical discovery was not of the necessary truth that atomic number 79 is the essence of gold.

Our argument rests on distinguishing between (1) G and (2) necessarily G. It is (2) which is the significant discovery. This is what has been traditionally thought to be impossible a *posteriori*. We argue that the empirical discovery is not of this sort, but instead of (1).

Let us illustrate the difference between the two types of discovery. It is necessarily true that a square has four sides. Now one could discover that this was necessarily true. Presumably, that would not be an empirical discovery. It isn't merely an empirical generalization. If one claimed that such a discovery was empirical, some argument would be needed. But there is a way in which someone could be said to have empirically discovered a necessary truth about a square. Suppose we have a child who has not yet learned that squares necessarily have four sides. Now, we show him/her a square and s/he counts the sides and discovers that it has four sides. Since it is necessarily true that squares have four sides, we could say that in a way the child has discovered a necessary truth by empirical means. Putting it that way may make the discovery seem more impressive than it is. The child's discovery is not the significant one that four-sidedness is necessary to squares. We think that the same point can be made about cases of scientific identity.

Let us show how this works in such cases.

First, we need some idea of how scientific identifications are made. Kripke doesn't say much about this. He says only that the discovery of the essence is made empirically; he doesn't say how it is done. We think that it could go like this. Someone names this stuff 'gold'. In doing so s/he assumes that the stuff forms a kind, which is to say that there is a single essence which makes it of that kind. Next, we have some criterion of what the essence of the stuff is supposed to be. In the case of gold we now think that the atomic theory gives the essence of these elements. So we examine gold to determine what its atomic structure is, and it turns out to be having 79 protons. (This is meant to be only a rough characterization. It needn't be done in that order. We might first investigate the structure and then determine that the atomic theory gave the essence.)

What has been discovered empirically about gold? That it has 79 protons. And since, if the atomic theory gives the right story about the essence of elements, then having 79 protons is the essence of gold, it could be said that a necessary truth has been discovered a *posteriori*. But this is like the child's discovery that the square has four sides. We haven't discovered in this way that having 79 protons is the essence of

gold. That requires that we have some criterion by which we determine what properties give the essence. We did not discover empirically that the atomic theory gives the essence of elements. By empirical means we have learned only a truth that happens to be necessary. One way to see that the empirical discovery that gold has 79 protons is not the discovery that having 79 protons is the essence of gold is to imagine the case where we determine that the atomic theory does not give the essence. Then we would have to say that we were wrong in thinking that the atomic theory gives the correct criterion for essence. But we wouldn't have to give up the claim that gold has 79 protons. In the situation where the atomic theory does not give the essence, we could still make the empirical discovery that gold has 79 protons. Thus the empirical discovery is not the discovery that having 79 protons is the essence of gold. It is only the discovery that gold has this property. And, if it turns out that this property is the essence of gold, then we can say, if we wish, that we have empirically discovered a necessary truth. But, in doing so, we should recognize that this discovery is not the discovery that 79 protons is the essence of gold.

We should admit that we haven't shown that necessarily G couldn't be discovered in some other empirical manner. We have shown only that Kripke's argument doesn't prove this. In fact, however, it is hard to see how such a proof could be given. We have described how G can be known *a posteriori*, but cannot imagine how necessarily G could be known *a posteriori*. One cannot prove G by logical means alone, which is one way to establish a necessary truth. Anyhow, that would be *a priori*. Rather, in the case of propositions such as G, what seems to emerge is that atomic theory posits G as giving the essence of gold. Granted, atomic theory has been confirmed *a posteriori*. But with respect to G, what the evidence confirms is G itself, gold having 79 protons, rather than necessarily G.

While the preceding story is no guarantee that necessarily G is not a *posteriori*, we think it is the most plausible account of the necessity of such propositions as G that is available. It doesn't construe the necessity of G as a *posteriori*, and no other account, except Kripke's, about which we have been expressing our suspicions, does so either.

ENDNOTES

¹ Saul A. Kripke, *Naming and Necessity* (Cambridge: Harvard University Press, 1980).

² A similar point is made in Alvin Plantinga's *The Nature of Necessity* (Oxford: Oxford University Press, 1974), fn.1, pp. 8-9; and in Keith S. Donnellan's "The Contingent A Priori and Rigid Designators", in Peter A. French et al eds., *Contemporary Perspectives in the Philosophy of Language* (Minneapolis: University of Minnesota Press, 1979), 45-69.

³ John L. Austin, *How to Do Things with Words* (Oxford: Oxford University Press, 1962), provided the inspiration for this section.

⁴ Saul A. Kripke, "Identity and Necessity", in Stephen P. Schwartz, ed., *Naming, Necessity and Natural Kinds* (Ithaca: Cornell University Press, 1977), 90-91.

⁵ Doris Lenck's question, "How would Kripke solve Frege's Puzzle?", led us to the trouble with necessary *a posteriori*.