

Epistemic possibility: Kripke versus Soames

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Soames attributes to Kripke the theory of epistemic possibility that uses metaphysical impossibilities in explaining necessary *a posteriori* truths. I attribute to Kripke a theory from epistemic counterparthood. I develop an epistemic accessibility based on Kripke's appeal to Lewis' counterpart theory that is reflexive, non-transitive, and non-symmetric. I also propose an epistemic counterpart function and a description function.

Keywords: epistemic possibility; epistemic logic; epistemic counterpart; necessary a posteriori; Saul Kripke; David Lewis

0. Introduction

Necessary *a posteriori* truths are informative, and thus rule out some possible worlds. Those worlds constitute the epistemic possibility of the actual world relative to an epistemic agent before he knows those truths. Soames proposes using metaphysical impossibilities as epistemic possibilities, and attributes this theory to Kripke. I will present Kripke's theory from epistemic counterparthood. I will then discuss Soames' metasemantic interpretation and descriptive proposition interpretation of the relevant passages from Kripke. I will end with a discussion on the epistemic accessibility relation, the epistemic counterpart function, and the description function.

1. Soames' metaphysical impossibility proposal

Consider the following necessary *a posteriori* truth.

(1) This table is made of wood.

Before an epistemic agent knows what this table is made of, it is epistemically possible, relative to him, that it is made of ice. Soames argues that, since his knowledge (1) is a

piece of *de re* knowledge of this table that it is made of wood, the corresponding metaphysical possibilities ruled out by (1) should also have been of this table (Soames 2005: 98-9). If such metaphysical possibilities are not of this table, ‘it would be hard to see... how anyone could ever have *de re* attitudes’ (Soames 2006: 303). He attributes this view to Kripke based on the following passage.

Don’t ask: how can I identify this table in another possible world, except by its properties? I have the table in my hands, I can point to it, and when I ask whether *it* might have been in another room, I am talking, by definition, about *it*. I don’t have to identify it after seeing it through a telescope. (Kripke 1972/1980: 52-3, quoted in Soames 2006: 303)

Since being made of wood is an essential property of this table, this table is metaphysically impossible made of ice. If the epistemic possibilities are worlds in which this table is made of ice, they are metaphysical impossibilities. Soames attributes to Kripke the theory that there are metaphysical impossibilities. He claims that, relative to Kripke, possible worlds are abstract objects. Since there are properties an object possibly instantiates and other properties it does not possibly instantiate, there are properties a world possibly instantiates and other properties it does not possibly instantiate. The properties a world does not possibly instantiate constitutes a metaphysically impossible world that there is (Soames 2003: 455).

If the epistemic possibilities are metaphysical impossibilities of this table, what are epistemic possibilities in the first place? For Soames, they are ‘maximally complete ways the universe can coherently be conceived to be – maximally complete properties that the universe can be conceived of as instantiating, and that one cannot know *apriori* that it

doesn't instantiate' (Soames 2006: 290). Before the epistemic agent knows the *a posteriori* truth (1), it is conceivable that this table is made of ice. Therefore, it is epistemically possible that this table is made of ice. Since it is metaphysically impossible that this table is made of ice, there are epistemic possibilities that are not metaphysically possible. This theory, according to Soames, is what 'Kripke himself didn't make explicit, but could have' (Soames 2006: 290).

If conceivability entailed epistemic possibility, and epistemic possibility outran metaphysical possibility, what is the relation between conceivability and metaphysical possibility? Soames' theory develops out of his following *essentialist route interpretation* of Kripke. Consider the following passage from Kripke.

So we have to say that though we cannot know a priori whether this table was made of ice or not, given that it is not made of ice, it is *necessarily* not made of ice. In other words, if *P* is the statement that the [table] is not made of ice, one knows by a priori philosophical analysis, some conditional of the form "if *P*, then necessarily *P*." If the table is not made of ice, it is necessarily not made of ice. On the other hand, then, we know by empirical investigation that *P*, the antecedent of the conditional, is true – that this table is not made of ice. We can conclude by *modus ponens*:

$$P \supset \Box P$$

$$\underline{P}$$

$$\Box P$$

The conclusion – ‘ $\Box P$ ’ – is that it is necessary that the table not be made of ice, and this conclusion is known *a posteriori*, since one of the premises on which it is based is a *a posteriori*. (Kripke 1971: 153)

According to Soames, since the second premise

(2) This table is not made of ice.

is not knowable *a priori*, that this table is made of ice it not knowable *a priori* not to instantiate, and so is epistemically possible. Once the epistemic agent knows (2), with the first premise,

(3) If this table is not made of ice, then, necessarily, this table is not made of ice.

which is an essentialist assumption knowable *a priori*, he can know, through competent deduction, the conclusion

(4) Necessarily, this table is not made of ice.

Since the premise (2) is known *a posteriori*, the conclusion (4) is also known *a posteriori*. (4) states that it is metaphysically impossible that this table is made of ice.¹ Therefore, it is known *a posteriori* that that this table is made of ice is a metaphysical impossibility.²

¹ I ignore here the semantic difference among the necessity and the impossibility claims.

² Kripke can at best conclude from the essentialist route that the necessity of (2) is *known a posteriori*, rather than *knowable only a posteriori*, for there might be other *a priori* route to the necessity of (2). Consider an *a posteriori* truth *p*. The following is true.

i. Knowledge that *p* entails *a posteriori* evidence that *p*.

Furthermore, through competent deduction together with the *a priori* knowledge that the necessity of *p* entails *p*, we have

ii. Knowledge that necessarily, *p* entails knowledge that *p*.

From i. and ii., we have

iii. Knowledge that necessarily, *p* entails *a posteriori* evidence that *p*.

Since, by iii., it is impossible to know necessarily, *p* without *a posteriori* evidence that *p*, one can know necessarily, *p* *only a posteriori*. This is what I take Soames to want to achieve. The *a posteriority* of the

The lesson Soames draws from his interpretation of Kripke is that epistemic agent recognizes metaphysical possibilities and impossibilities from the world he assumes to be actual. From the world in which this table is made of wood, the world in which it is made of ice is metaphysically impossible. From the world in which this table is made of ice, the world in which it is made of ice from the Thames River is metaphysically possible.

Soames proposes systems of metaphysical possibilities. In each system, there is a world marked as actual. From that world, there is a set of worlds recognized as metaphysical possibilities, from which there is a further set of worlds recognized as metaphysical possibilities. The union of these sets of worlds constitute the epistemic possibility from a certain epistemic possibility marked as actual, and it constitutes a system. All such systems constitute the set of ‘epistemically possible systems of metaphysical possibility’ (Soames 2006: 292). The worlds recognized as metaphysical possibilities in a system are in fact metaphysical possibilities only if the world marked as actual in that system is in fact the actual world. Given the relation between conceivability and epistemic possibility, ‘conceivability plus knowledge of actuality’ (Soames 2006: 293) is the guide to metaphysical possibility.

2. Kripke’s epistemic counterparthood theory

Kripke talks about the epistemic sense of ‘might’, which ‘expresses our present state of ignorance, or uncertainty’, without explicit discussion of epistemic possibility (Kripke 1972/1980: 103). A world is epistemically possible relative to an epistemic agent at a

necessity of (2) is relevant to whether (2) is a necessary *a posteriori* truth in that, if its necessity is *a priori*, it is *a priori*. See Kripke (1972/1980: 159) for what might have motivated Soames’ interpretation.

certain time if his evidence at that time does not rule out that world.³ In other words, if a world is compatible with the evidence of an epistemic agent at a certain time, it is an epistemic possibility relative to him at that time.

This theory of epistemic possibility cuts across the distinction between *a priori* and *a posteriori* knowledge, such that there are uncertain *a priori* truths. Kripke writes,

Something can be known, or at least rationally believed, *a priori*, without being quite certain. You've read a proof in the math book; and, though you think it's correct, maybe you've made a mistake. You often do make mistakes of this kind. You've made a computation, perhaps with an error. (Kripke 1972/1980: 39)

Consider the following illustration.

[T]he four color theorem might turn out to be true and might turn out to be false. It might turn out either way... Obviously, the 'might' here is purely 'epistemic' – it merely expresses our present state of ignorance, or uncertainty. (Kripke 1972/1980: 103)

There were epistemic possibilities relative to us otherwise to the truth of the four colour theorem. Before the proof, our state of knowledge does not exclude the possibility that there is a map who has a pair of adjacent regions that cannot be painted with different colours if we only use four colours.⁴ Given the *a prioricity* of the truth of the theorem, this demonstrates that the epistemic sense of 'might' may be applied to *a priori* truths. If,

³ An epistemic agent might have the evidence that rules out worlds in which *p* without having made the epistemic decision, such that it is still epistemically possible that *p* relative to him. I ignore this here.

⁴ This possibility is fictitious because metaphysically impossible. Ignorance or mistakes about the metaphysic of something brings in metaphysical impossibilities of it as epistemically possible, but (1) is not a metaphysical truth.

as Soames did, ‘epistemic possibility’ is defined using *a prioricity*, it is metaphysically impossible to have uncertain *a priori* truths. Uncertain truths entail the epistemic possibility of their falsity. Epistemic possibility of their falsity entails that ‘one cannot know *apriori* that [their falsity] doesn’t instantiate’ (Soames 2006: 290), which, presumably, entails that one cannot know their truth *a priori*. Therefore, Soames’ theory of epistemic possibility is inconsistent with Kripke’s theory.

Given that Kripke uses ‘might have turned out’ in the epistemic sense to express epistemic possibility,⁵ the following passage, which is *prima facie* only about the illusion of contingency of (1), may be interpreted differently.

What, then, does the intuition that the table might have turned out to have been made of ice or of anything else, that it might even have turned out not to be made of molecules, amount to? I think that it means simply that there might have been *a table* looking and feeling just like this one and placed in this very position in the room, which was in fact made of ice. In other words, I (or some conscious being) could have been *qualitatively in the same epistemic situation* that in fact obtains, I could have the same sensory evidence that I in fact have, about *a table* which was made of ice.⁶ (Kripke 1972/1980: 142)

The epistemic possibility of the table being made of ice before an epistemic agent knows (1) is a possible world in which there is another table made of ice that resembles this

⁵ See Kripke (1972/1980: 143fn72) for his correction.

⁶ I interpret Kripke’s use of ‘qualitative’ to refer to the descriptive. Two objects that instantiate the same property of redness satisfy the same description ‘a red object’, although they can be phenomenally distinguishable in a certain world at a certain time because of the lighting. See Kripke (1972/1980: 44) for a ‘purely qualitative’ description that uses descriptions such as ‘a man’ and ‘a dog’, which do not express phenomenal properties.

table and occupies this position in the room, but not, contrary to Soames, one in which there is *this table* made of ice that occupies the same position in the room.

The epistemic possibility thus described includes what Kripke calls an ‘epistemic counterpart’.

Here, then, the notion of ‘counterpart’ comes into its own. For it is not this table, but an epistemic ‘counterpart’, which was hewn from ice... Precisely because of this fact, it is not *this table* which could have been made of ice. Statements about the modal properties of *this table* never refer to counterparts. (Kripke 1971: 157fn15)

For Kripke, the table in another possible world that resembles this table is an epistemic counterpart to this table. His focus here is to explain the illusion of contingency. The putative possibility that this table is made of ice is in fact a possibility in which an epistemic counterpart is made of ice, and thus does not threaten the necessity of (1).⁷

Soames’ essentialist route interpretation confuses Kripke’s passage quoted in section 1. that *explains* the necessity of (1) putatively through (2) as *arguing* for its *a posteriority*. Kripke distinguishes the epistemological from the metaphysical in order to show that what seems to make (1) contingent is something epistemic. The epistemic possibility that this table is made of ice does not make (1) contingent because it is a metaphysical possibility of a non-identical epistemic counterpart – something distinct from the original object – being made of ice. Although, according to Soames, Kripke demonstrates how we arrive at the *a posteriority* of (4) through the essentialist route, the *a posteriority* is

⁷ The necessity of (1) may be expressed as ‘This table is necessarily *if concrete* made of wood’.

already presupposed in the discussion. What Kripke intends to show, instead, is that although (2) is not knowable *a priori*, (2) can still be necessary, and the necessity of (2), in this case, is not known *a priori*.⁸

A more direct discussion of the *a posteriority* of some necessary truths is with identity statements such as

(5) Hesperus is Phosphorus.⁹

Before the astronomical discovery, an epistemic agent can be in a ‘qualitatively identical epistemic situation’ (Kripke 1972/1980: 104) to the actual situation and call two distinct astronomical objects ‘Hesperus’ and ‘Phosphorus’.

[I]n a counterfactual world in which ‘Hesperus’ and ‘Phosphorus’ were not used in the way that we use them, as names of this planet [(Venus)], but as names of some other objects, one could have had qualitatively identical evidence and concluded that ‘Hesperus’ and ‘Phosphorus’ named two different objects. (Kripke 1972/1980: 104)

Kripke agrees that we have the intuition that

(6) Hesperus might have turned out not to be Phosphorus.

and describes the possible world that gives us the intuition that (6) is true.¹⁰ It is the possible world in which the names used in (5) have distinct referents. In a footnote to the above passage, he writes,

⁸ See Kripke (1972/1980: 113-5) for an independent argument for the necessity of (1), and thereby the necessity of (2).

⁹ This is to be interpreted as ‘Hesperus is identical with Phosphorus’.

¹⁰ Kripke talks about intuitions in, for example, Kripke (1972/1980: 142). Although we have that intuition, it does not follow that Hesperus could have been non-identical with Phosphorus.

There is a more elaborate discussion of this point in the third lecture, where its relation to a certain sort of counterpart theory is also mentioned. (Kripke 1972/1980: 104fn48)

The relation between the counterfactual referents of the names and Venus is one of epistemic counterparthood. Suppose that, in that possible world w_1 , the epistemic agent pointed at Mars in determining the reference of 'Hesperus' because it resembles Venus in virtue of being the astronomical object occupying the so-and-so position in the evening sky, while there is no difference with 'Phosphorus'. The evidence we have in w_1 is 'qualitatively indistinguishable' (Kripke 1972/1980: 104) from the evidence we have in the actual world before the astronomical discovery. Since Mars in w_1 is epistemically indistinguishable from Venus in the actual world, Mars in w_1 is an epistemic counterpart to Venus in the actual world.¹¹ Although Kripke describes the alternative epistemic possibilities that explain the intuition about (6) in terms of alternative reference, what explains the epistemic possibility, as indicated in his footnote quoted above, is epistemic counterparthood.

3. Soames' metasemantic interpretation and descriptive proposition interpretation

Soames has a different interpretation of Kripke's original theory. First of all, he disagrees that identity statements such as (5) are necessary *a posteriori* truths. On the one hand, given direct referentiality, (5) and

(7) Hesperus is Hesperus.

¹¹ There is a difference between one's actual evidence about a counterfactual situation, and one's counterfactual evidence about that counterfactual situation. The epistemic indistinguishability of Mars in w_1 from Venus in the actual world is with our actual evidence, instead of our counterfactual evidence, let alone not in comparison with such counterfactual evidence.

express the same proposition. Since (7) is knowable *a priori*, and knowledge relates us to propositions, (5) is also knowable *a priori* (Soames 2002: 3-6). On the other hand, given direct referentiality, since the referents of ‘Hesperus’ and of ‘Phosphorus’ are respectively Venus, (5) predicates of Venus and itself the identity relation. Since, in general, for all x , knowledge of a pair of objects x and x that they are identical is *a priori*, (5) is knowable *a priori* (Soames 2006: 293-4). With these commitments, Soames interprets Kripke’s passages as *arguments* for the *a posteriority* of (5).

He interprets Kripke’s description of w_1 in terms of alternative reference as using the following as premise for an argument for the *a posteriority* of (5) in the following *metasemantic interpretation*.

(8) ‘Hesperus’ and ‘Phosphorus’ are co-referential.

(9) ‘Hesperus is Phosphorus’ expresses a truth.

The metasemantic statements (8) and (9) are false in w_1 ,¹² and are not knowable *a priori*.

For Kripke to argue from their *a posteriority* to the *a posteriority* of (5), he needs a principle that connects them. Soames proposes the following principle of strong disquotation and justification (SDJ):

(SDJ) If an epistemic agent x understands a sentence P , uses P to express a proposition p , and knows that P expresses p , then (a) x believes p if and only if x accepts P , and (b) x would be justified in believing p on the basis of evidence E if and only if x would be justified in accepting P on the basis of E . (Soames 2006: 295)

¹² In a metalinguistic context, a word could have been talked about without calling its semantic into question. I assume here that the use of (8) and of (9) does call their semantic into question, thus constituting a metasemantic context. Metasemantic context differentiates from metalinguistic context thus.

Given that (9) is *a posteriori* and that an epistemic agent is justified to accept a sentence only if it expresses a truth, it requires *a posteriori* evidence for him to be justified in accepting the sentence (5).¹³ Since he would be justified in accepting the sentence (5) on the basis of such *a posteriori* evidence, by (SDJ)(b), he would be justified in believing the proposition (5) on the basis of such *a posteriori* evidence.

As with the passage about this table, he also interprets it as an argument for the *a posteriori* of (1) and (2) with the following *descriptive proposition interpretation*.

Consider

- (10) A unique table occupying a certain position in this room is not made of ice.

This descriptive proposition – as Soames calls it – is not knowable *a priori*. For Kripke to argue from its *a posteriori* to the *a posteriori* of (2), and also (1), he needs a principle that connects them. Soames proposes the following similar principle of strong descriptive origin and justification of *de re* belief (SDOJ):

- (SDOJ) If an epistemic agent x in circumstance C is capable of believing a singular proposition p in virtue of believing a certain related descriptive proposition DP , then (a) x believes p in C if and only if x believes DP in C , and (b) x would be

¹³ In his later work, Soames downplays the requirement of truth with ‘descriptive belief’ in Soames (2006: 295-6). See Soames (2002: 8-10) for his earlier construal that makes use of the requirement, especially in how the possibility of a sentence expressing a falsehood makes it unjustifiable to accept the sentence merely on the basis of our linguistic competence with terms used. Soames (2002), I think, is more faithful to Kripke’s appeal to the contingency of (8), and putatively, also (9). I therefore keep the requirement here. I will attempt to take it away later when discussing the equivalence between (5) and (9) as *a priori* but not necessary.

justified in believing p in C on the basis of evidence E if and only if x would be justified in believing DP on the basis of E . (Soames 2006: 298)

Given that (10) is *a posteriori*, it requires *a posteriori* evidence for an epistemic agent to be justified in believing the descriptive proposition (10) in this circumstance. Since he would be justified in believing the descriptive proposition (10) in this circumstance on the basis of such *a posteriori* evidence, by (SDOJ)(b), he would be justified in believing the singular proposition (2) in this circumstance on the basis of such *a posteriori* evidence.

I will start with the descriptive proposition interpretation. Consider

- (11) The astronomical object occupying the so-and-so position in the evening sky is the astronomical object occupying the such-and-such position in the morning sky.

Kripke points out that the relation between the identity statement (5) and the descriptive proposition (11) and that between (5) and the metasemantic statement (8), and putatively also (9), are one of ‘a priori material equivalence’ (Kripke 1971: 154fn14). For example, given knowledge of the actual reference-fixing of the two names, an epistemic agent knows without further *a posteriori* evidence that (5) is true if and only if (11) is true. However, there are possible worlds in which such material equivalents do not hold, such as w_1 , and therefore they are not necessary. False assumptions about the equivalents being necessary commit one to a theory with which the contingency of (8), (9), or (11) entails the contingency of (5). Notice that (SDOJ)(b) follows from predicating the two sides of the corresponding *a priori* material equivalence with epistemic attitudes, whereas (SDJ)(b) follows from predicating the two sides of the corresponding *a priori* material

equivalence with epistemic attitudes while taking the notion of truth away.¹⁴ If necessary equivalence is not required for such deduction, then Kripke's theory that the equivalents are not necessary does not rule out his commitment to the principles (SDJ) and (SDOJ).¹⁵ Soames' descriptive proposition interpretation is probably based on the following passage from Kripke.

The general answer to the objector can be stated, then, as follows: Any necessary truth, whether *a priori* or *a posteriori*, could not have turned out otherwise. In the case of some necessary *a posteriori* truths, however, we can say that under appropriate qualitatively identical evidential situations, an appropriate corresponding qualitative statement might have been false... The inaccurate statement that Hesperus might have turned out not to be Phosphorus should be replaced by the true contingency...: two distinct bodies might have occupied, in the morning and the evening, respectively, the very positions actually occupied by Hesperus-Phosphorus-Venus. (Kripke 1972/1980: 142-3)

After giving this specific corresponding qualitative, or descriptive, statement, Kripke goes on to present the general paradigm.

¹⁴ Firstly, the predication gives us

- i. x would be justified in believing that Hesperus is Phosphorus on the basis of evidence E if and only if x would be justified in believing that 'Hesperus is Phosphorus' expresses a truth on the basis of evidence E .

Secondly, with

- ii. x would be justified in believing that 'Hesperus is Phosphorus' expresses a truth on the basis of evidence E if and only if x would be justified in accepting 'Hesperus is Phosphorus' on the basis of evidence E .

we can deduce instance of (SDJ)(b) for the case in question.

¹⁵ Kripke (1979) uses a version of the disquotational principle without the part on justification.

Since we are concerned with how things might have turned out otherwise, our general paradigm is to redescribe both the prior evidence and the statement qualitatively and claim that they are only contingently related... Let ' R_1 ' and ' R_2 ' be two rigid designators which flank the identity sign. Then ' $R_1 = R_2$ ' is necessary if true. The references of ' R_1 ' and ' R_2 ', respectively, may well be fixed by nonrigid designators ' D_1 ' and ' D_2 ', in the Hesperus and Phosphorus cases these have the form 'the heavenly body in such-and-such position in the sky in the evening (morning)'. Then although ' $R_1 = R_2$ ' is necessary, ' $D_1 = D_2$ ' may well be contingent, and this is often what leads to the erroneous view that ' $R_1 = R_2$ ' might have turned out otherwise. (Kripke 1972/1980: 143-4).

Although these passages follow his suggestion of using counterparts to explain epistemic possibility, it is only about the illusion of contingency. Consider the corresponding descriptive statement to (5), namely (11). What Kripke means to assert is the source of the intuition about the possibility of (5) being false, or the truth of (6) – it comes from the possibility of (11) being false. The 'loose and inaccurate'¹⁶ statement

(12) This table might have turned out to be made of ice.

which entails the metaphysical possibility of this table being made of ice, should be replaced with the corresponding descriptive statement

(13) A table occupying a certain position in this room might have been made of ice.

which does not entail such possibility.

¹⁶ Kripke (1972/1980: 142). Kripke uses gold in the original example.

Furthermore, if Kripke is committed to (SDOJ), since an epistemic agent would also be justified in believing (11) in a certain circumstance even if it were Mars that occupies both positions in the sky during the respective time, Kripke is committed to the theory that the epistemic agent is justified in believing (5) in that circumstance even if his *a posteriori* evidence is about Mars. Even if the epistemic possibilities have epistemic counterparts playing the role of the original object, the eventual state of knowledge is about the original object Venus, but not Mars. Even if metaphysical possibilities of Mars are used to explain an epistemic agent's knowledge about Venus in that his knowledge requires having ruled out those possibilities, if any of these possibilities were actual, his corresponding piece of knowledge would no longer be about Venus. It would have been a different piece of knowledge. Since, for Kripke, knowledge about an object is about that object but not other objects, Soames' attribution commits Kripke to a theory that he does not endorse – except if Soames, with 'circumstance', referred to something that excluded Mars from justifying the epistemic agent's belief in (11) to begin with.

I will now turn to the metasemantic interpretation. Soames' strongest support for it is the following passage.

So two things are true: first, that we do not know *a priori* that Hesperus is Phosphorus, and are in no position to find out the answer except empirically. Second, this is so because we could have evidence qualitatively indistinguishable from the evidence we have and determine the reference of the two names by the positions of two planets in the sky, without the planets being the same. (Kripke 1972/1980: 104, quoted in Soames 2002: 7-8; 2006: 295)

Since the main focus of Kripke's discussion on the necessary *a posteriori* is on its necessity, I will look at the passage in which it is its *a posteriority* that is under discussion.

[Marcus] advocated the view that if you really have names, a good dictionary should be able to tell you whether they have the same reference. So someone should be able, by looking in the dictionary, to say that Hesperus and Phosphorus are the same. Now this does not seem to be true. It does seem, to many people, to be a consequence of the view that identities between names are necessary. Therefore the view that identity statements between names are necessary has usually been rejected. (Kripke 1972/1980: 101)

He discusses the *a posteriority* of (5) in relation to its threat to the necessity of (5), and how Marcus accepts both its necessity and also its *a prioricity*. Here is his brief discussion on the putative *a prioricity*.

What should we think about this? First, it's true that someone can use the name 'Cicero' to refer to Cicero and the name 'Tully' to refer to Cicero also, and not know that Cicero is Tully. So it seems that we do not necessarily know *a priori* that an identity statement between names is true. It doesn't follow from this that the statement so expressed is a contingent one if true... There is a very strong feeling that leads one to think that, if you can't know something by *a priori* ratiocination, then it's got to be contingent: it might have turned out otherwise; but nevertheless I think this feeling is wrong. (Kripke 1972/1980: 101)

The *a prioricity* can be abandoned without abandoning the necessity, as long as we distinguish between the metaphysical and the epistemological. We need not maintain the

a prioricity for the sake of the necessity. However, the intuition that (5) is contingent is strong. Kripke explains our intuition about (6) in the following way.

Are there really circumstances under which Hesperus wouldn't have been Phosphorus? Supposing that Hesperus is Phosphorus, let's try to describe a possible situation in which it would not have been. Well, it's easy. Someone goes by and he calls two *different* stars 'Hesperus' and 'Phosphorus'. It may even be under the same conditions as prevailed when we introduced the names 'Hesperus' and 'Phosphorus'. But are those circumstances in which Hesperus is not Phosphorus or would not have been Phosphorus? It seems to me that they are not. (Kripke 1972/1980: 102)

The intuition about (6) might be merely from the contingent truth (8), and putatively also (9). The contingency of (8) gives one the illusion that (5) is contingent, when in fact it is necessary.

The discussion so far presupposes that Hesperus is Phosphorus. Kripke then addresses the objection that, even if the contingency is illusory if we presupposed that Hesperus is Phosphorus, there is a possible world in which Hesperus is not Phosphorus 'in advance of our discovering that [Hesperus and Phosphorus] were the same' (Kripke 1972/1980: 103). Kripke explains it with an epistemic sense of 'might'.

The evidence I have before I know that Hesperus is Phosphorus is that I see a certain star or a certain heavenly body in the evening and call it 'Hesperus', and in the morning and call it 'Phosphorus'. I know these things. There certainly is a possible world in which a man should have seen a certain star at a certain position in the evening and called it 'Hesperus' and a certain star in the morning and called

it ‘Phosphorus’; and should have concluded – should have found out by empirical investigation – that he names two different stars, or two different heavenly bodies... And so it’s true that given the evidence that someone has antecedent to his empirical investigation, he can be placed in a sense in exactly the same situation, that is a qualitatively identical epistemic situation, and call two heavenly bodies ‘Hesperus’ and ‘Phosphorus’, without their being identical. So in that sense we can say that it might have turned out either way. (Kripke 1972/1980: 103-4)

It is in the epistemic sense that ‘it might have turned out either way’. (6) is true only in the epistemic sense, and the epistemic possibilities that give us the intuition that it is true are metaphysical possibilities of a distinct astronomical object under the same name.

What is important to notice is that the *a posteriori* is explained in the passage with epistemic indistinguishability, where two possible worlds are epistemically indistinguishable if the evidence descriptively construed does not differentiate them.

There is a possible world in which he calls distinct objects ‘Hesperus’ and ‘Phosphorus’, and there is the actual world. The evidence descriptively construed does not differentiate the two possible worlds, and they are epistemically distinguishable in this epistemic context only with further, *a posteriori*, evidence. It is in this way that the possible world with alternative reference is an epistemic possibility before the astronomical discovery. It thereby explains the *a posteriori* of (5).

Soames interprets the controversial passage – the fifth last passage – as Kripke’s *argument* for the *a posteriori* from the metasemantic difference among the two worlds.

First of all, it is not an argument, but an explanation. Kripke assumes the audience to not

dispute the *a posteriority*, but to have taken it for granted, and even to take it to threaten the necessity of (5). Secondly, even if Soames accepts that it is an explanation, it is not the metasemantic difference but the epistemic indistinguishability that is explanatorily prior. For the metasemantic difference to explain the *a posteriority*, we have to use epistemic indistinguishability under the reference-fixing description of the name. The alternative referent that satisfies the reference-fixing description resembles the actual referent such that the evidence descriptively construed does not differentiate them. It is thus the epistemic indistinguishability that explains the *a posteriority* of the metasemantic difference.

4. Epistemic accessibility and epistemic counterparthood

If my interpretation of Kripke is correct, Kripke has a theory of epistemic possibility in his early work, and it is in terms of epistemic counterparts. With the counterpart theory that he appealed to, we can work out the accessibility relation for an epistemic logic. In this section, I will discuss how some epistemological facts are understood with the epistemic accessibility described in terms of epistemic indistinguishability and correspondingly epistemic counterparthood. Since what are epistemically possible of certain objects relative to a certain epistemic agent depends on what the epistemic counterparts to those objects are, the epistemic counterpart function B encodes what are epistemically possible relative to him. On the other hand, since what are epistemically necessary of objects relative to a certain epistemic agent depends on what epistemic possible ways those objects are, the description function K encodes what are epistemically necessary relative to him. I will also elaborate these two functions in this section.

I will start with the epistemic accessibility relation. For Lewis, the counterpart relation is reflexive, non-transitive, and non-symmetric (Lewis 1968). As with reflexivity, the original table, *r*, in the actual world, among other objects in it, resembles itself in the actual world closest, and so it is a counterpart to itself. As with non-transitivity, another table, *s*, in w_2 , occupying the same position in this room and is the only table made of ice in the building, resembles *r* in the actual world closest among other objects in w_2 , and so is a counterpart to it. A further table, *t*, in w_3 , occupying a certain position in another room and is the only table made of ice in the building, resembles *s* closest in w_2 among other objects in w_3 , and so is a counterpart to it. However, *t* in w_3 does not resemble *r* closest in the actual world among other objects in w_3 , so is not a counterpart to it. As with non-symmetry, *s* in w_2 resembles *r* closest in the actual world among other objects in w_2 in virtue of occupying the same position in this room, but *r* in the actual world does not resemble *s* closest in w_2 among other objects in the actual world because it is not made of ice but something else is.

Kripke, per my exegetical contention, suggests using the relation of closest resemblance in epistemology.¹⁷ An object that resembles another object closest is similar in certain respects, and thus they both satisfy a certain set of descriptions. If the epistemic agent identifies the object only with those descriptions, it would have been sometimes epistemically indistinguishable whether a given object is the one of the two objects. Given that such resemblance can be explained using epistemic indistinguishability, an

¹⁷ Recall the ‘qualitatively indistinguishable’ evidence from previous sections. See again Kripke (1972/1980: 104).

epistemic accessibility described in terms of epistemic indistinguishability has the properties the counterpart relation has: reflexivity, non-transitivity, and non-asymmetry.¹⁸

I will now explain some epistemological facts using this epistemic accessibility relation. Suppose I am in the actual world. I know that this table, *r*, is made of wood, and I identify it with its occupying a certain position in this room. If so, by stipulation, neither w_2 nor w_3 is epistemically accessible for me from the actual world (suppose, in w_3 , there is no table in this room). On the other hand, by the reflexivity of epistemic accessibility, the actual world is epistemically accessible from the actual world. For an epistemic agent to know a fact, the corresponding proposition has to be true in all epistemically possible worlds.¹⁹ Since the actual world is an epistemically possible world, the evidence of the epistemic state in which an epistemic agent knows anything has to include the actual world. This explains the epistemological fact of the factivity of knowledge.

Suppose I do not know that this table, *r*, is made of wood. My ignorance is such that w_2 is epistemically accessible from the actual world because it includes an epistemic counterpart, *s*, that occupies the same position in this room, and it is not made of wood

¹⁸ The following are metaphysical truths.

- i. For any x_1 , any x_2 , any y_1 , any y_2 , any z , any w , and any t , y_1 in y_2 is epistemically accessible from x_1 in x_2 relative to z in w at t if and only if y_1 in y_2 is epistemically indistinguishable from x_1 in x_2 relative to z in w at t .
- ii. For any x_1 , any x_2 , any y_1 , any y_2 , any z , any w , and any t , y_1 in y_2 is epistemically indistinguishable from x_1 in x_2 relative to z in w at t if and only if y_1 instantiates all properties in y_2 x_1 is known by z in w at t to instantiate in x_2 .

Epistemic accessibility among worlds constitutes the epistemic state of z in w at t using ordered tuples of x_1 , x_2 , y_1 , and y_2 . The epistemic counterpart function takes, relative to each z in w at t , ordered pairs of x_1 and x_2 into ordered pairs of y_1 and y_2 . For example, it takes, relative to me in the actual world at the present time, the ordered pair of Hesperus and the actual world into the ordered pair of Mars and w_1 . Update modifies epistemic accessibility among objects in their respective worlds in the posterior epistemic state. Acquisition of the knowledge that Hesperus is the brightest, whereas Mars is not, would have distinguished Mars from Venus thus, making it, from w_1 , epistemically inaccessible from Hesperus in the actual world.

¹⁹ Consider a fact being constituted by an object instantiating a property. Proposition relates to fact in a way that predication of a property using a name outputs a set of possible worlds of which the sentence with a subject-predicate format is true. In distinct epistemic context, the same sentence could have had different epistemic content.

but made of ice. Even if w_3 is epistemically accessible from w_2 , it is not thereby epistemically accessible from the actual world because of the non-transitivity of epistemic accessibility. This explains the epistemological fact that w_3 , a world in which some other table in *another room* is made of ice, is not a possibility I have to rule out to know that this table is made of wood.

Furthermore, although w_2 is epistemically accessible from the actual world, the actual world is not thereby epistemically accessible from w_2 because of the non-symmetry of epistemic accessibility. This explains the epistemological fact that, given my actual evidence about w_2 that s is made of ice, I can epistemically distinguish worlds in which a similar table is made of wood from w_2 . However, given my actual evidence about the actual world, I cannot epistemically distinguish w_2 from the actual world.

This suggests that epistemic attitudes of the agent, which include the epistemic attitudes towards the table, such as those about the properties he identifies it with, are not included in the epistemic possibility. If, to the contrary, in w_2 , s is made of ice and I identify it only with its occupying a certain position in this room, the world in which r occupying the same position in this room being made of wood is a possibility to be ruled out for me to know in w_2 that the table is made of ice – even if r does not instantiate in the actual world all properties s is actually known to instantiate in w_2 . This would have made something epistemically distinguishable from s an epistemic possibility. Notice also that, if epistemic possibility were to include the epistemic attitude of identifying the table with its occupying a certain position in this room, w_3 would not have been epistemically accessible from w_2 because t in w_3 is not identified with its occupying a certain position in this room.

At first, this notion of closest resemblance is not under any linguistic representations. It is a relation among objects. However, as Lewis notes, since the counterpart relation connects through property sharing, ‘it is the resultant of similarities and dissimilarities in a multitude of respects, weighted by the importance of the various respect and by the degrees of the similarities’ (Lewis 1968: 115). If so, we may relativize epistemic counterparthood to epistemic agents in a certain world at a certain time, when, under a certain name, he identifies the referent with certain properties. To explain the *a posteriori* of (5), which uses two names of the same object, we may attribute epistemic counterparts to objects under a certain name thereof. Suppose that the epistemic agent identifies Venus under the name ‘Hesperus’ with its property of being the astronomical object occupying the so-and-so position in the evening sky, and identifies it under the name ‘Phosphorus’ with its property of being the astronomical object occupying the such-and-such position in the morning sky. In w_1 , Mars is the astronomical object that occupies the so-and-so position in the evening sky, while Venus is the astronomical object that occupies the such-and-such position in the morning sky. Mars in w_1 , therefore, is an epistemic counterpart to Hesperus in the actual world, but in w_1 , Venus, instead of Mars, is the epistemic counterpart to Phosphorus in the actual world. (5) thus rules out w_1 , and is thereby informative.

The epistemic counterpart function B takes an object under a certain name, from the actual world, into its epistemic counterparts for all worlds. The rule for determining the mapping of the function may be expressed in the form of descriptions. For example, the rule for determining the epistemic counterparts of Hesperus is via the satisfaction of the description ‘the astronomical object occupying the so-and-so position in the evening sky’.

In fact, I suspect that this is where the intuitions for the description theory come in.²⁰ However, B does not encode the semantic information carried by the analogous definite descriptions, as it is not a semantic relation but a relation among objects. The rule expressed in the form of descriptions are for determining B , while the information encoded in B is the mapping between objects under certain names and objects indexed to worlds. In contrast, the description function K takes an object under a certain name, from the actual world, into a set of worlds in which the object instantiates the properties the epistemic agent knows of it to instantiate in the actual world under that name. K takes Hesperus into what the epistemic knows of Venus under the name ‘Hesperus’. Given that an epistemic agent identifies an object under a certain name with the properties he knows of it under that name, B applies the information about the properties of the object to all objects in all worlds, while K applies the information about the properties of the object to that object in all worlds in the epistemic context.²¹

Epistemic possibility need not include the epistemic attitude of the epistemic agent because B encodes the information about the properties he uses to identify the object under a certain name. A certain set of worlds rather than another is determined as epistemically possible because of the epistemic relation between the object under a certain name and the epistemic agent. If the epistemic relation is different, in that he identifies the object with a different set of properties under that name, a different set of epistemic counterparts is determined and thus a different set of epistemic possibilities is

²⁰ The description theory states that proper names have as their semantic value descriptions. The semantic value of ‘Hesperus’ is the description ‘The astronomical object occupying the so-and-so position in the evening sky’.

²¹ The information is only for the external theorist to determine the corresponding extensions, while the information encoded in the function is purely extensional.

determined. The relativity of epistemic possibilities of a certain object under a certain name to epistemic agents identifying that object under that name with certain but not other properties is described with the epistemic agents adopting different epistemic counterpart functions.²² It corresponds to the description theorist's observation that different speakers might associate a name with different descriptions.

How do the two functions interact? *B* generates epistemic possibilities while *K* eliminates them. With a *sufficient condition* for being an epistemic counterpart, through instantiating the set of identifying properties, we can *generate* epistemic possibilities based on the satisfaction of the corresponding description that expresses it. While *B*, with a certain object under a certain name, takes worlds into objects, the description provides the *rule* for the function. *B* takes Hesperus into Venus for the actual world and Mars for w_1 because Venus in the actual world satisfies the description 'the astronomical object occupying the so-and-so position in the evening sky' and Mars in w_1 satisfies the same description. Given the sufficient condition, we search among all metaphysical possibilities for objects that satisfy the corresponding description, and include those of such objects as epistemic possibilities. On the other hand, with a *necessary condition* for a world to be actual given the epistemic agent's knowledge of an object under a certain name, through the object instantiating certain actual properties, we can *eliminate* epistemic possibilities based on the non-satisfaction of the corresponding description that expresses it. While *K*, with a certain object under a certain name, takes worlds into truth-value, or equivalently, takes that object under that name into a set of worlds, the

²² The epistemic perspectivity is not to be confused with the epistemic situationality. Different epistemic agents could have had different epistemic counterpart functions in having different perspectives, thus, in a similar epistemic situation, a same piece of evidence could have updated them respectively differently through a same utterance of different epistemic content.

description expresses the properties predicated of the referent of the name and is the *rule* for the function. K takes Hesperus into the set of the actual world and takes Phosphorus into the set of the actual world and w_1 because although the actual world instantiates the predications of Venus both properties, w_1 instantiates only the predication of Venus the property of being the astronomical object occupying the such-and-such position in the morning sky. Given the necessary condition, we can eliminate worlds from the set of epistemic possibilities generated from B . We search among all remaining epistemic possibilities for worlds in which the referent lacks the aforementioned actual properties, and eliminate them.

Notice that the application of Lewis' counterpart theory to epistemology with Kripke's metaphysics of transworld identity requires epistemic counterparthood to be indexed to worlds. Mars in the actual world is not an epistemic counterpart to Hesperus in the actual world, but Mars in w_1 is an epistemic counterpart to Hesperus in the actual world. In other words, Mars is an epistemic counterpart to Hesperus in the actual world *from* w_1 , but not *from* the actual world. Epistemic counterparthood differentiates with non-identity. Hesperus, from a possible world in which everything else is the same except that I woke up one second late, is an identical epistemic counterpart to Hesperus in the actual world, while Mars from w_1 is a non-identical epistemic counterpart to Hesperus in the actual world. If the theory of *a posteriority* is uniform across necessary and contingent truths, the epistemological fact that the *a posteriority* of necessary truths involves non-identical

epistemic counterparts indicates that knowledge of contingent truths also involves ruling out metaphysical possibilities with non-identical epistemic counterparts.²³

5. Summary

Soames attributes to Kripke several theories about the necessary *a posteriori*, to which I respond with a single theory from epistemic counterpart. With a Kripkean theory of epistemic counterparthood, I describe an epistemic accessibility using epistemic indistinguishability, and assess the result theory of epistemic possibility through the corresponding epistemic logic. I also propose the epistemic counterpart function and the description function. The epistemic counterpart function, with an object under a certain name, maps worlds to epistemic counterparts. This may be understood as the satisfaction of the identifying description of the referent of that name. Since, for any world, if an object in it satisfies the description, it is the epistemic counterpart from that world, the description can be used to generate epistemic possibilities. The epistemic counterpart function encodes information through the mapping for an object under a certain name, whereas the associated description – as the description theorist calls it – is the rule for the mapping. The description function, with an object under a certain name from the actual world, maps worlds into truth-value. Those worlds assigned the truth-value true are the worlds in which the object instantiates the properties the epistemic agent knows of it under that name. Since, for any world, it is actual only if the object in it instantiated a

²³An expected confusion within the present theory is therefore the necessity of non-identity with epistemic counterpart, given use of Lewisian counterparthood. Epistemic counterpart is identified using epistemic indistinguishability, and, having been indexed to worlds, an object from a world could have been epistemically indistinguishable from itself in the actual world, such that it is an epistemic counterpart to itself from that world – an epistemic counterpart that is identical to the original object.

certain set of properties known under a certain name, the description can be used to eliminate epistemic possibilities.

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