Against the Necessity of Identity Statements

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In *Naming and Necessity*, Saul Kripke argues that names are rigid designators. For Kripke, a term "rigidly designates" an object if it picks out that object wherever it exists, *in all possible worlds*. Additionally, to employ David Bostock's analysis, Kripke argues "that identity-statements in which both terms are rigid designators are necessarily true if they are true at all" (313). Here Kripke has in mind statements of the sort "*a is b*," in which the verb, *is*, has the character of *identity* (as opposed to predication, etc.), e.g. "a square *is* a parallelogram having four equal sides and four right angles." Kripke writes that philosophers have been interested in identity statements of three sorts: those employing descriptions, identity statements between names, and theoretical statements in science. He contends that identity statements involving descriptions, e.g., "the first Postmaster General of the United States *is* the inventor of bifocals," are contingent. Of names and theoretical statements in science, however, true identity statements of this sort are true necessarily so.

Initially in this essay, I will provide an account of Kripke's claim regarding the necessity of identity statements. I will give a systematic analysis of the structure of Kripke's argument, facilitating an examination of the mechanics of the argument and my critique thereof. My criticism lies in the challenge to Kripke's intuitive claim that proper names are rigid designators, and that therefore the relation expressed in an identity statement between a name and the object it picks out is a necessary one. I will argue that identity statements (employing descriptions, in names, and in statements in science) are contingent, not necessary, undermining Kripke's notion of the *a posteriori* identity. Ultimately, this critique challenges Kripke's fundamental notion of rigid designa-

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tion, the implications of which will be indicated in the conclusion.

Kripke on the Necessity of Identity Statements

I begin my analysis with the distinction Kripke notes between a statement which is necessarily true and a statement which is contingently so. This distinction will prove useful in the analysis throughout the paper. He writes:

> We ask whether something might have been true, or might have been false. Well, if something is false, it's obviously not necessarily true. If it is true, might it have been otherwise? Is it possible that, in this respect, the world should have been different from the way it is? If the answer is "no," then this fact about the world is a necessary one. If the answer is "yes," then this fact about the world is a contingent one. (258)

The key to Kripke's account seems to be the question of whether or not something might have turned out otherwise. For something to be necessarily true, it could not have been different from the way it is. A necessary truth implies that the world could not *possibly* be different in this respect. In contrast, contingent facts are such that they are not necessarily so. We could imagine the world in a way such that a contingent fact may have turned out otherwise.

At this point, Kripke wants to note the distinction between *necessary* and *a priori*. Truths about the world which are necessary could not have been otherwise; this is not to say that they are discovered *a priori* on Kripke's account. He writes, "It's certainly a philosophical thesis, and not a matter of obvious definitional equivalence, either that everything *a priori* is necessary or that everything necessary is *a priori*" (258). Here he cites a fundamental difference between the metaphysical nature of *necessary* truths and the epistemological character of *a priori* knowledge. Kripke's assertion regarding true identity statements with terms that are rigid designators, then, is that the world could not have possibly turned out otherwise. This is especially important

for theoretical statements in science, for instance, which on Kripke's analysis consist of two rigid designators and reveal a *necessary* truth about the world, even though scientific facts are obviously discovered empirically.

This leads to an investigation of the notion of rigid designation, and the terms to which it applies. Kripke defines the rigid designator as that which picks out the same object in every possible world; "...a designator rigidly designates a certain object if it designates that object wherever that object exists" (259). Intuitively, he claims that proper names are rigid designators. This means that 'Sinatra,' for instance, picks out the same person "wherever that object exists." In any *possible* way we can think of the world, then, 'Sinatra' must designate *that same person,* viz., Sinatra. On Kripke's analysis, though Sinatra may not have been the leader of the Rat Pack, it is not the case that he might not have been Sinatra (even had he not been *called* 'Sinatra'). Identity statements between names, then, become an important focus for Kripke's analysis. Statements like "Cicero is Tully," or "Hesperus is Phosphorus," express a necessary identity on Kripke's account as these proper names necessarily pick out the same object in every possible world. If, for Kripke, these identity statements are true at all, they are true *necessarily* so.

The same analysis applies, for Kripke, to identity statements regarding scientific theory. That light *is* a stream of photons; that heat *is* a form of energy proportional to the molecular motions of a substance; that water *is* H_2O, all express necessary identity relations. On Kripke's account, then, (and certainly Putnam's as well), water *is* H_2O in all possible worlds. It is important to keep in mind that both terms in the identity statement are rigid designators. Thus, in an interesting sense, 'water' designates H_2O in all possible worlds as 'H_2O' designates H_2O in all possible worlds. Similarly, regarding names, the rigid designator 'Hesperus' picks out Venus in all possible worlds as does 'Phosphorus.' (As does 'Venus,' for that matter.) Writes Kripke in the construction of a counterfactual example:

> 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. Now, of course I'm committed to saying that they're not, by saying that such terms as "Hesperus" and "Phosphorus," when used as names, are rigid designators. They refer in every possible world to the planet Venus. (267)

Kripke therefore argues that in every possible world, even one in which the *terms* "Hesperus" and "Phosphorus" identify *different* objects, 'Hesperus' and 'Phosphorus,' as *we* use the terms, still *both* refer to Venus. As such, the identity statement, "Hesperus is Phosphorus" is necessarily true: 'Hesperus' and 'Phosphorus' designate the object Venus wherever that object exists.

The notion that Kripke defends here is that true identity statements discovered *a posteriori* are necessarily true. E.g., statements like "light is a stream of photons," or "Hesperus is Phosphorus," which are discovered empirically, are necessarily true on Kripke's account. This analysis overturns the traditional philosophical claim that facts discovered *a posteriori* are *contingent*, not necessary. The question I will examine, then, is: does this account make sense? Can we accept Kripke's intuitive claim that true *a posteriori* identity statements express *necessarily true* relations, and what are the implications of our conclusion?

Structural Analysis of Kripke's Argument
        To further the analysis, I will examine the mechanics of Kripke's theory following the systematic account given by Michael Wreen in the article "Proper Names and the Necessity of Identity Statements." Wreen analyzes the argument of Kripke into four distinct propositions, illustrated by Kripke's discussion of the necessary relationship of identity between Hesperus and Phosphorus. The first point of the argument is that,
        a. 'Hesperus' designates Hesperus (Venus).
This, according to Kripke is, of course, true. Additionally,
        b. 'Phosphorus' designates Phosphorus (Venus).
These are uncontroversial claims regarding the way in which we

use the terms 'Hesperus' and 'Phosphorus,' and these being true,

> c. *'Hesperus' and 'Phosphorus' designate the same object (viz., Venus).*

On Kripke's analysis, then, this being the case,

> d. *Hesperus is Phosphorus.*

It is essential to note, however, that the naming of a term, e.g., "'Hesperus' designates Hesperus (Venus)" is contingent. (As well as that "'Phosphorus' designates Phosphorus (Venus).") Kripke writes, "...in a counterfactual world in which 'Hesperus' and 'Phosphorus' were not used in the way that we use them, as names of this planet, but as names of some other objects, one could have had qualitatively identical evidence and concluded that 'Hesperus' and 'Phosphorus' named two different objects" (268). This is important to note, as the way the terms 'Hesperus' and 'Phosphorus' are used may certainly have been otherwise. We need not go so far at this point even to assume a counterfactual situation in which 'Hesperus' and 'Phosphorus' designate two distinct objects. All I need to indicate here is that it is a *contingent* fact that *we* use the term 'Hesperus' to designate Venus and the term 'Phosphorus' to designate Venus.

An additional point which is essential to note here is that according to Kripke's causal theory of reference, causal connections themselves are contingent. On this account, the reference of a term is determined by a causal chain of users of that term, who intend to refer to the same object as did the persons from whom they learned the term, ultimately grounded in the object itself. Kripke writes, "An initial 'baptism' takes place. Here the object may be named by ostension, or the reference of the name may be fixed by a description. When the name is 'passed from link to link,' the receiver of the name must, I think, intend when he learns it to use it with the same reference as the man from whom he heard it" (266). Here Kripke implies the contingency of causal connections, first, as the "initial baptism" of a term certainly could have been different. Additionally, the referent of a term is entirely dependent upon the contingent meaning derived from a causal link in a community of speakers. Wreen comments:

> If [that causal connections are contingent] is true,
> and if token-names designate what they do in

virtue of being causally tied to the objects they designate, then the facts that 'Hesperus' designates Hesperus, and 'Phosphorus' designates Phosphorus would have to be contingent themselves. (322)

It is certainly contingent that reference should be derived through a causal link among speakers of a term. One cannot demonstrate a *necessary* relation between the "initial baptism" of a term and the term's *referring* to that same object in a community of speakers — using the term as understood through causal connections. The fact that 'Hesperus' designates Hesperus and 'Phosphorus' designates Phosphorus is demonstrated, then, to be a contingent one.

The Contingency of Identity Statements

We have shown that the first two propositions of Kripke's argument are contingent, that 'Hesperus' designates Hesperus (Venus) and 'Phosphorus' designates Phosphorus (Venus). It follows, then, that the third point, "'Hesperus' and 'Phosphorus' both pick out the same object (Venus)" is contingent as well. Wreen writes, "if it's contingent that a certain causal chain is grounded in an object, and contingent that a second causal chain is grounded in an object, it would certainly seem to be contingent that both causal chains are grounded in the same object" (322). The argument itself is simple: a is contingent, b is contingent, therefore, a *and* b are contingent. If "'Hesperus' designates Hesperus (Venus) and 'Phosphorus' designates Phosphorus (Venus)" is contingent, then, that "'Hesperus' and 'Phosphorus' pick out Venus" is also contingent.

David Bostock takes up this point with a counterfactual example in which 'Hesperus' and 'Phosphorus' refer to two different objects. He hypothesizes that two planets/stars may have had orbits such that the morning and evening appearances of "Hesperus" and "Phosphorus" are indistinguishable from what they are now. Bostock writes, "a situation in which Hesperus has one orbit and Phosphorus another is evidently a situation in which they are different planets" (319). Kripke's analysis would seem to concede this point. However, Kripke goes on to

write, "...still that's not a case in which Hesperus wasn't Phosphorus. For there couldn't have been such a case, given that Hesperus is Phosphorus" (267). On Kripke's account, what is key is the way in which *we* use the terms 'Hesperus' and 'Phosphorus.' To illustrate this, Kripke contends:

> But we, using the names as we do right now, can say in advance, that if Hesperus and Phosphorus are one and the same, then in no other possible world can they be different. We use "Hesperus" as the name of a certain body and "Phosphorus" as the name of a certain body. We use them as names of those bodies in all possible worlds. If, in fact, they are the *same* body, then in any other possible world we have to use them as a name of that object. And so in any other possible world it will be true that Hesperus is Phosphorus. (268)

I should mention two significant points here relating to Kripke's analysis. The first is that Bostock's analysis, not Kripke's, accurately reflects the way *we* use the terms 'Hesperus' and 'Phosphorus.' The hypothetical scenario posits a situation in which 'Hesperus' and 'Phosphorus' actually do refer to two distinct objects. The construct of the other possible world itself thus ensures that the way these terms are used refers to different objects.

The second point is that Kripke's analysis presupposes the very conclusion he is trying to prove. Kripke wants to get at the notion that in all possible worlds, 'Hesperus' and 'Phosphorus' refer to the same object. He does this by asserting that 'Hesperus' and 'Phosphorus' must, in every possible world, refer to the same object. Bostock's counterfactual example, however, provides a seemingly uncontroversial account on which the terms do not both refer to Venus. In this situation, Hesperus is certainly not Phosphorus. Kripke's assertion seems to be, ironically, counterintuitive. It is important to keep in mind Kripke's analysis regarding the nature of necessary truths versus contingent facts. Contingent facts are such that they could have been otherwise. The analysis here implies that the relationship of

identity between Hesperus and Phosphorus could have been otherwise, thus the identity relation itself is contingent.

Rigid Designation and Other Possible Worlds

The essential tenet to Kripke's notion of rigid designation is that the rigid designator picks out the same object wherever that object exists, in all possible worlds. It is interesting to note, however, that in certain circumstances (detailed by Kripke), a rigid designator may not actually pick out an object at all. Consider Kripke's analysis of the proper name, Nixon. 'Nixon,' Kripke argues, would not only refer to the man Nixon had he not been *called* Nixon, but further, would refer to the man Nixon even if Nixon did not exist. The rigid designator, then, does not actually pick out one distinct object in every possible world. Additionally, consider the counterfactual situation detailed above. In it, 'Hesperus' and 'Phosphorus' refer to two different objects, though in the "actual" world, they refer to only one. Bostock summarizes the situation as such, "the number of entities referred to when *specifying* a counterfactual situation need not be the same as the number of entities *in* the situation so specified" (319). The Nixon example is such that one refers to an object not in the situation at all. 'Hesperus' and 'Phosphorus' refer twice to one planet, though in the scenario specified, there are two. Thus Bostock concludes, "there is no inference from rigidity of designation...to what can coherently be supposed to happen in counterfactual situations" (319). Kripke's argument for necessary identity is such that '$a=b$' is a necessary truth if $a=b$ is true and a and b are rigid designators. It does not necessarily follow, however, that a or b must exist; in another possible world, a may designate an object while b does not.

Here it is helpful to consider a thought experiment as introduced by Helen Steward in the article "Identity Statements and the Necessary *A Posteriori*." Her thought experiment is such that a rare particle, similar to a proton (named proton-B), is found in the nucleus of an atom and has a slightly stronger attraction to surrounding electrons than does a normal proton. This leads to variations in melting points and boiling points of various substances and ultimately may lead to entirely different experientially physical manifestations of the same atomic structure. She

writes:

> What is important is that all plausibility has gone out of the claim that H_2O and water are the very same substance, once the properties to which that particular chemical constitution gives rise are allowed to vary in the way described. In the possible world envisaged, then, water is not identical with H_2O. And so the claim that this identity is a necessary truth must be false. (391)

On Steward's analysis, H_2O may pick out an infinite number of different substances in other possible worlds. With a "normal" proton it may designate a clear liquid, while with "proton-B" it may be a purple solid. This indicates a fundamental problem with Kripke's notion of rigid designation and its relation to the necessity of identity statements. Steward argues, in fact, that H_2O cannot be a rigid designator as it fails to pick out the same object in every possible world. On Kripke's own account, then, the identity statement, "water=H_2O" could not be a necessary identity as both of the terms are not rigid designators.

This analysis applies to other theoretical statements in science and proper names as well. 'Hesperus,' even as we use the term, does not need to designate the same object in all possible worlds, viz., Phosphorus. 'Hesperus,' as we use the term, picks out the object we see in the morning sky that is Venus, that in the "actual" world is Phosphorus. Given Bostock's scenario, however, 'Hesperus,' which still picks out the object we see in the morning sky, fails to designate the experientially indistinguishable Phosphorus. The underlying notion, then, is that the concept of rigid designation is problematic. Writes Steward:

> An important feature of the term 'H_2O' is that it picks out, in every possible world, the substance that has the chemical constitution H_2O in that world, so that, unless we have a watertight guarantee that the H_2O in every possible world is bound to be the same stuff, there will be possible worlds in which H_2O is not the familiar, clear, colorless substance we call water. (394)

Terms like 'H₂O' or 'Phosphorus' may, in other logically possible worlds, pick out objects other than they do in the actual world. This analysis certainly challenges Kripke's claim regarding necessary identities and means that rigid designation becomes trivial: H_2O refers to H_2O.

This is a fundamental critique of Kripke's notion of the necessity of identity statements as it indicts his intuitive assumption regarding the nature of proper names and natural kind terms. Kripke's principal argument for the necessity of identity statements is that rigid designation necessitates what can coherently be supposed in counterfactual situations. Kripke contends that 'water' necessarily picks out H_2O in all possible worlds, thus the identity statement, "water is H_2O" is necessarily true. The analysis that rigid designation, however, fails to necessarily determine identity in other possible worlds undermines this assertion.

Contingency in This World

The analysis in the essay indicates the contingency of the statement, "'Hesperus' and 'Phosphorus' pick out the same object (Venus)." The argument is initiated in the demonstrated contingency of the fundamental identity statements themselves, that 'Hesperus' picks out Hesperus (Venus) and that 'Phosphorus' picks out Phosphorus (Venus). The conclusion, then, is supported by the analysis of rigid· designation and other possible worlds. The notion of rigid designation fails when we construct other logically possible worlds in which "rigid designators" fail to pick out the same object. Given this account, Kripke's argument for the necessity of identity statements collapses.

Here I want to push the argument that the statement "'Hesperus' and 'Phosphorus' both pick out Venus" is contingent. Kripke concludes that Hesperus is Phosphorus because the terms 'Hesperus' and 'Phosphorus' necessarily pick out the same object. He writes, "...using the names as we do right now, [we] can say in advance, that if Hesperus and Phosphorus are one and the same, then in no other possible world can they be different"

(268). Having shown, however, that circumstances could have been otherwise, that 'Hesperus' and 'Phosphorus' *contingently* pick out the same object, it follows that the identity statement, "Hesperus is Phosphorus" is ultimately contingent. This argument fundamentally undermines Kripke's project of demonstrating the necessity of identity statements. Kripke's view has important implications for the philosophy of language, beyond rigid designation to theories of reference and broader concerns regarding essentialism and epistemology. What the analysis in the essay demonstrates is that rigid designators fail to necessarily identify the same object in all possible worlds and that Kripke's conclusion regarding the necessity of identity statements from this analysis is flawed. If we conclude, then, that *a posteriori* identity statements are contingent, we move the discourse in the relevant fields forward, having gained an important insight.

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