

## Kripke on Naming and Necessity

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### I

Some wag (was it Mark Twain?) reported the following story: Scholars have recently established that the Iliad and the Odyssey were not, after all, written by Homer. They were actually written by another author, of the same name.

The majority of current theories of naming and reference, including ones as divergent in other respects as those of Russell and Searle, would rule this story impossible. They would do so on roughly these grounds: the sense and reference (one or the other, or one through the other, depending on the theory) of the name 'Homer' is determined, given the absence of other reliable testimony, by the sole description: 'Author of the Iliad and the Odyssey'. 'Homer is the author of the Iliad and the Odyssey' is therefore known *a priori*, hence necessarily true. There could not be *another* author of that name and claim to fame.

In lectures delivered at Princeton in the Winter of 1970, Saul Kripke offered a lucid alternative to such theories (which I shall lump together under the term 'descriptivism'). From a comprehensive picture of naming, reference, necessity, and identity, he drew consequences for some other important philosophical problems. The lectures are now published in a very expensive book,<sup>1</sup> which is a pity as they deserve to be widely discussed. In these pages I want to give a brief indication of their content, and to discuss some of the points they raise.

Kripke's views represent a crystallization of tendencies that have recently been very much in the air.<sup>2</sup> At their core is the repudiation of what may well form the basis of the empiricist tradition: the doctrine that epistemology is prior to metaphysics. Quine and (in a more home-

<sup>1</sup> Saul A. Kripke, "Naming and Necessity," in Harman and Davidson, eds., *Semantics of Natural Language* (Dordrecht, 1972), 253-355, and 763-769. References in brackets in the text are to page numbers of that book. The transcript of another lecture covering some of the same material is published under the title "Identity and Necessity" in Milton K. Munitz, ed., *Identity and Individuation* (New York, 1971) (Henceforth 'Munitz').

<sup>2</sup> Partly, no doubt, through Kripke's own influence. He mentions the following as having independently expressed similar views on one point or another: Albritton, Chastain, Donnellan, Putnam, Slote, Stroud. Other points of contact are indicated below.

spun style) the practitioners of what was sometime referred to as "Oxford Philosophy" had already challenged the assumption that any intelligible sentence must be in principle translatable into a language that refers only to the immediately known. But in Oxford Philosophy this went with a rejection of the philosophical relevance of science, while Quine kept enough of the spirit of verificationism to require that modal notions be abjured unless they could be defined in non-modal terms.<sup>3</sup> Kripke retains of the empiricist tradition a kind of naturalism: take account of science and logic, and for the basic truths of phenomenalism substitute a sensitive respect for what seems *prima facie* "intuitively" obvious. But science, logic, and intuition all lead Kripke towards modal notions and away from empiricism. Intuition supports the legitimacy of *de re* modalities, which is incompatible with the reduction of necessity to the *a priori*. It also demands a place for causality, an informal notion freely used in Kripke's reconstruction of the theory of reference. Logic has constructed semantics for modal notions which provide a mode of access to meaning untainted with verificationism. And science is viewed as discovering "essential" (and therefore necessary) properties of things "in basic physical terms."

This "picture"—he declines to call it a "theory" (300)—rests on three props: a fairly extensive argument for a causal view of the reference of names; a technical device; and a philosophical observation.

The philosophical observation is that *a priori* knowledge must not be confused with necessary truth (260ff.). Necessary truths may be discovered *a posteriori*, and some contingent truths may be known *a priori*. In the case of the Homer story, this would undercut the claim that the referent of 'Homer' is necessarily the author of the epics, even if it were granted that the description 'Author of the Iliad and the Odyssey' gives the meaning of 'Homer'. But as the next point makes clear, this is not so.

The technical device is the introduction of "rigid designators," with the stipulation that all names are rigid designators (269-270). Rigid designators pick out an object in the actual world and refer to that object even when its properties in other possible worlds are in question. Treating names as rigid designators frees us from the awkward quest for the *sense* of names: names have their reference fixed (and

<sup>3</sup> Quine's opposition to the notions of modal logic is well known. It may seem curious that in "Two Dogmas of Empiricism" his ground for rejecting them is that they are all interdefinable but not definable in observation or non-modal terms. One might think that ineliminability is an argument in favour of a certain mode of discourse, since if the terms of modal logic were definable in other terms, they would be theoretically superfluous, like singular terms (cf. *Word and Object*, § 38). This contrary strategy is basically Chisholm's when he argues for the uniqueness of mentalist discourse (*Perceiving*: Ithaca, 1967; ch. 11). More reasonably, however, Quine's strictures may be viewed as a demand that modal terms be given some explanation that someone of his philosophical temper will find intelligible. And this condition is, perhaps, satisfied by model-theoretic semantics. Nevertheless one may still be troubled about how modal logic interpreted by model theory is itself to be interpreted in the *real world*. Perhaps we carry models in our heads, like Leibniz's God. But if that is the answer, Quine's philosophical attitude has been vindicated in essential respects. This is not a point which I can argue here.

so we may know *a priori* what their reference is, where we have fixed it ourselves) but they do not have a sense which determines their reference.<sup>4</sup> Moreover this treatment allows for the intuitive fact that when we are discussing what *might* be the case with some particular object referred to by name, we are still talking about *it* (cf.267). We do not have to fancy rummaging about in a possible world as if it were a foreign country, (266-7) seeking some object to *identify* with the one in question.<sup>5</sup>

Nor, finding the quest hopeless, do we need to settle for a non-identical object bearing a privileged *counterpart* relation to the first.<sup>6</sup> Counterpart theory is a desperate measure reflecting acceptance of descriptivism coupled with awareness of its inadequacy: for if we must identify the referent of a name by means of a set of qualities, nothing short of indiscernibility will guarantee the transitivity of identity. The implausibility of this view stems from its demand that one change the subject before giving what purports to be the answer to a question about possibility. The answer to a question about what might have been true of Humphrey speaks not of him but of a counterpart. "Probably, however, Humphrey could not care less whether someone *else*, no matter how much resembling him, would have been victorious in another possible world" (344). It seems that strictly speaking nothing could have been other than it is.<sup>7</sup>

This is not a conclusive objection. Lewis could simply point out that on his reconstruction of possibility 'A could be  $\phi$ ' simply *means* 'there is a counterpart of A which is  $\phi$ ', so that Humphrey's interest in whether he might have won is automatically concern for his counterparts. But it would be more elegant to avoid the need for such reconstruction; and that is exactly the advantage of Kripke's scheme:

we do not begin with worlds (which are supposed somehow to be real, and whose qualities, but not whose objects, are perceptible to us) and then ask about criteria of reidentification; on the contrary, we begin with the objects which we *have*, and

<sup>4</sup> Except in a Pickwick-Frege sense. We might say: the sense of a proper name is just that it is assigned to *such* and *such*. But that gives no guidance for interpretation in oblique contexts (277 and 346).

<sup>5</sup> For an evocation of the troubles such a quest incurs, cf. Chisholm, "Identity through Possible Worlds: Some Questions," in *Nous I* (1967).

<sup>6</sup> As counselled by David Lewis, "Counterpart Theory and Quantified Modal Logic," *Journal of Philosophy*, 65 (1968).

<sup>7</sup> Cf. H. Ishiguro, *Leibniz's Philosophy of Logic and Language*, (London, 1972), p. 123: What Leibniz means by saying that the opposite of 'Caesar crossed the Rubicon' is possible, is that there could have been—in a different world—a person like Caesar in all respects except that of crossing the Rubicon . . . . He could not, of course, be Caesar, that particular historical person in this world. So, strictly speaking, it is not the case that 'Caesar did not cross the Rubicon' could be true.

Leibniz's account, though formally identical thus far with that of Lewis, is less bizarre. For possible worlds exist in God's mind, and so there seems to be a place for *real* possibility attaching to an actual individual: namely God's capacity to create other worlds. This means that Leibniz has not analyzed out actual possibilities completely. If he had, as Lewis does, then 'God could have created another world' would mean 'There is a world where a *counterpart* of God creates a different world'. This I find (if there are gradation of oddity among theological statements) the more bizarre, in being the more thorough-going, version of counterpart theory.

can identify, in the actual world. We can then ask whether certain things might have been true of these objects (273).

Applied to our news story about Homer, the device of rigid designators guarantees that *if* we are referring at all by the name 'Homer', we continue to do so even when we envisage the possibility that Homer had none of the most notable properties we believe him to have. Reidentification in other possible worlds presents no special problems for it consists simply in identification in this one.

But how is reference secured in this world? Kripke's answer to this question begins quite innocently: "If you have a description of the form 'the  $x$  such that  $\phi x$ ', and there is exactly one  $x$  such that  $\phi x$ , that is the referent of the description" (255). More generally, "my use of 'refer' is such as to satisfy the schema, "The referent of ' $X$ ' is  $X$ , where ' $X$ ' is replaceable by any name or description" (343). So far this is orthodox enough, and compatible with descriptivism. The divergence between names and descriptions on Kripke's view comes in the way that they acquire their reference. On empiricist assumptions, descriptions provide the paradigm which names must follow. We may think of a definite description as giving us a *route* to the object referred to, a criterion by which to recognize it. Thus it seems that in order to refer we must *know* something about the object which is sufficient to identify it. Even names must in some way contain, allude to, or abbreviate such knowledge. This view has been doctored or refined into what Kripke discusses rather lengthily as the "cluster theory" (278ff.); but the modifications are not important. It is still descriptivism. To be sure, descriptivists do not assume that the mere formulation of a description uniquely true of something is *sufficient* to guarantee reference: for Russell, the knowledge of a referent (like all knowledge) must ultimately be traceable to acts of acquaintance. More recently Hintikka pointed out that we need some sort of condition of acquaintance to mark the distinction between knowing that Portugal is a dictatorship, and knowing who the dictator of Portugal is<sup>8</sup>. What Kripke shows is that it is not *necessary* either, if a name is used to refer, that any description or cluster of descriptions be associated with the name and true of the referent. Perhaps none of our beliefs about Aristotle or Moses is true, though the historical tradition that misleads us in every particular is still genuinely *about them* (277-9). What is required is that there be a continuous chain of tradition, going back to an original "baptism" (298ff.). To return to our opening anecdote: the question of the reference of 'Homer' concerns the nature of the causal chain of which modern talk about Homer constitutes the latest links. The variety of our beliefs about him is quite another question. Hence it is *possible* (though no doubt not now discoverable) that someone else actually authored the epics, who by pure coincidence was named 'Homer'. (If it was not coincidence, he played some part in the tradition and may be the man referred to in the first place.)

<sup>8</sup> J. Hintikka, *Knowledge and Belief*, (Ithaca, 1962), pp. 141-2. See below, pp. 454 ff.

Because names do not have a sense, no statements of the form  $(N=(\exists x)\phi x)$  or ' $\phi N$ ' (where ' $N$ ' is a name) can ever be analytic.<sup>9</sup> If there is any necessity either in identifications or in predications involving names, it must therefore be *de re* and not *de dicto*.<sup>10</sup> And it is precisely Kripke's purpose to vindicate modality *de re* without any thought of reduction.

The simplest cases of necessity *de re* are identity statements with names on both sides. Since names are rigid designators, 'Hesperus' refers to the actual planet Venus even when we consider any other possible world: the same can be said of 'Phosphorus', and so 'Hesperus is Phosphorus' is true in all possible worlds (306). The common view that identity statements of this sort are contingent is easy to explain away as due to the confusion of the *a priori* with the necessary. The identity is not known *a priori*, for "Quine is right when we discovered that we tagged the same planet twice, our discovery was empirical" (305). And this discovery is a precondition of knowing that 'Hesperus is Phosphorus' expresses an identity. That identity itself is necessary: once the distinction between the *a priori* and the necessary is borne firmly in mind, the temptation vanishes to think otherwise.

We have seen that the device of rigid designators allows Kripke to ignore the problem of finding sufficient conditions for individuation in qualitative terms. Is this to say that he can dispense with the notion of essence? In a sense, yes. Ruth Marcus has observed that talk of essence is sometimes intended in the sense of 'Aristotelian essence' (properties necessary for the existence of a thing of a certain kind), and sometimes in the sense of 'individuating essence', which distinguishes one individual of a kind from another. She points out that the examples that come to mind are not *sufficient* for identification: "perhaps complete individuation is always a matter of what are generally taken to be inessential properties."<sup>11</sup> Moreover her examples of individuating essences (being *essentially a philosopher*, or *essentially a cyclist*) rest purely on common usage of these expressions, in which

<sup>9</sup> One might think the case where  $\phi$  is 'is named ' $N$ ' provides a trivial counterexample. But it does not. (283-6).

<sup>10</sup> This does not follow if the difference between *de re* and *de dicto* is defined purely in formal terms, as holding between expressions beginning '(Quantifier)(Modal Operator)' and those beginning '(Modal Operator)(Quantifier)'. This is the procedure adopted by Plantinga in "De Re and De Dicto," *Nous* III (1969), in which he proposes reducing *de re* modalities to *de dicto* ones involving proper names. But the *point* of preferring *de dicto* modalities (for those, like Quine, who do) is that such modalities have an unmysterious source in language: "Necessity has its source in the way we talk about things, not in the things we talk about." (Quine, *Ways of Paradox*, p. 174, quoted by Plantinga p. 247.) Once we give up descriptivism, which assigns sense to names, names have reference without sense. So any necessity that attaches to ' $\phi N$ ', even if it is expressed *formally* as *de dicto*, must be due to the referent not the name. Hence it must be *de re*. Perhaps Plantinga implies this, for he is concerned to show that no gain in clarity results from reducing *de re* to *de dicto*.

<sup>11</sup> Ruth Barcan Marcus, "Essential Attributor," *Journal of Philosophy* 68 (1971), p. 191. Aristotle may have thought that his notion of Form could account for both kinds of essence. Cf. R. Albritton and W. Sellars, "Substance and Form in Aristotle" (symposium) *Journal of Philosophy* 54 (1957).

'X is essentially  $\phi$ ' means roughly 'The most important fact about X for our purposes is that it is  $\phi$ '. But as Kripke points out: "Important properties need not be essential, unless 'importance' is used as a synonym for essence" (289). "Importance" is dependent on time, context, and interest.<sup>12</sup> But as we have seen the properties we are interested in must be necessary *de re*. And no necessity can have more than the formal appearance of being *de re* if it varies with anything but the referent itself.

Thanks to the view that names are rigid designators, we needn't bother about individual essences. We identify objects by whatever contingent properties happen to be convenient. However in considering what *might* have happened to the object we do need to make sure that we are not supposing it right out of existence. We are constrained by its "Aristotelian essence," and in the case of physical objects by some general, non-qualitative conditions on self-identity such as "having its origin in the same hunk of matter" (350). Nixon is contingently President, but could not have been born of different parents, nor consist of anything but flesh and blood, nor fail to be a man (Cf. 270, 313).

Kripke applies the scheme developed in connection with proper names without modification to natural kinds. The descriptivist account (or "cluster theory") of the meaning of general terms for kinds is rejected (322). Instead kind names are seen as bestowed, like proper names, on actual objects (samples of the kind) which may initially be identified by accidental marks. The association of those marks with the kind may at first seem so firm as to be treated as analytic; but if the original sample is a proper sample of a natural kind it may be discovered that these marks are neither necessary nor sufficient to identify the kind. Kant thought that gold was analytically yellow; in fact it is not always even true. Conversely, some form of pyrites are said to have the phenomenal characteristics of gold: but they are only "fool's gold." As with Moses or Homer, so with gold or cats: we could still be referring to them even if all our beliefs about their qualities turned out to be false, provided the use of the referring terms had the right causal history (330). Such general terms are rigid designators, like names: hence true identity statements with such terms on either side will be necessary. This fact is more momentous in the case of kinds than in the case of individuals: for it means that *theoretical* identifications achieved by science, such as 'Water is H<sub>2</sub>O', or 'Heat is mean molecular kinetic energy', are necessary if true (326). If they do not seem to be, it is only because they are not *a priori*, as in the case of individual identity statements. 'Water might have turned out not to be H<sub>2</sub>O' is true only if the possibility is taken epistemically: either it means simply that the knowledge was *a posteriori*, or that we might have been in an epistemically indistinguishable situation with respect to some substance having the ap-

<sup>12</sup> As argued by Amelie Oksenberg Rorty in "Essential Properties in the Actual World," *Review of Metaphysics* XXV (1972).

parent properties of water, but which was *not* water. It would have been only “fool’s water,” not being H<sub>2</sub>O.

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 (333).

From this view of theoretical identification, there is a short and startling argument against the thesis that sensations are identical with brain-states. In one form (Kripke is careful to exclude versions that do not claim identities of *type* (334)) that thesis requires that there be a general and contingent identity between kinds of brain states and kinds of sensations (e.g. pains, and the stimulation of C-fibers). But a direct application of the preceding considerations shows that such an identity, if it held, would be necessary not contingent (336ff.). So the thesis must be false: there is no identity at all.

Kripke’s exposition has a persuasiveness which the bare outline I have just given cannot convey. This should, perhaps, be remembered in reading the comments that follow.

## II

The rejection of descriptivism parallels some recent suggestions about the theory of knowledge. Whereas the classical empiricist view was that knowledge is true justified belief, a number of writers have argued that the inclusion of justification is not in general necessary or sufficient. Similarly, to refer to an object by name, it is neither necessary nor sufficient to know a description that applies to it. In both cases it is sufficient that a causal chain of the right sort should link the event or thing referred to or known to the speaker or knower.<sup>13</sup> Kripke points out that some theories, such as Strawson’s, go some way in his direction; but the crucial difference is that for Strawson the speaker must at least know how he got his reference, or know that the chain of inherited reference of which he is a part is reliable up to him. For Kripke, these epistemic requirements drop out altogether (299). Further, the existence of a causal chain of the right kind is a good intuitive guide to the relevant conditions for both knowledge and reference, but does not amount to a clear set of necessary and sufficient conditions. The exact conditions on the right *kind* of causal chain are hard to specify (301-2).

Another respect in which Kripke’s view is linked to recent modifications of the theory of knowledge concerns the notion of acquaintance. For phenomenalism, acquaintance provided the certain, incorrigible ground for all knowledge. Since corrigibility is perhaps a *necessary* feature of any epistemic state, this demand was excessive. It could only appear to be satisfied by taking as the state of acquaintance one which is at the limit of the epistemic, and can only be taken

<sup>13</sup> For the causal theory of knowledge, *vid.* Alvin Goldman, “A Causal Theory of Knowledge,” *Journal of Philosophy*, 64 (1967).

as epistemic by equivocation. For sensations are “incorrigible” only if not epistemic, and epistemic only if corrigible.<sup>14</sup> Once it is realized that the proper role of acquaintance in knowledge is causal not evidential, acquaintance need no longer be narrowly interpreted in phenomenal terms. Kripke’s causal view of the reference of names, and his account of them as rigid designators, can then be seen as the heirs of Russell’s acquaintance as the source of the reference of “logically proper names.” The contrast between the two schemes results from scrapping the empiricist demand for incorrigible foundations.

Finally, descriptivists are easily led to assume that referring to someone involves knowing who he is. This assumption is embodied in Hintikka’s system of *Knowledge and Belief*, which probably also needs the principle that if you know who *a* is and also who *b* is, then if  $a=b$  you know that too.<sup>15</sup> Kripke needs neither of these assumptions, both of which are false. Suppose  $a=b$ . I can have identified *a* correctly, and identified *b* correctly—but in a very different way: so I may not know that they are one and the same. ‘Knowing who’ implies identification; but the ways of identification are contingent and varied: they can remain opaque to one another. Descriptivism suggests the contrary, because it wrongly implies that identifying characteristics form a coherent cluster. ‘Knowing who’ is a context-dependent notion: it is knowing “how to get to” in a sense that can vary according to opportunity and interests. Referring, on the other hand, is either done or not done. Hintikka’s stipulation that knowing who is a condition of reference admits of the following counter-example:

I talked to *A* about *B*, whose name escaped me at the time. Later I said: “We talked about *B*.” *A* said: “I didn’t, since I don’t know who he is.” But *A* did talk about him, nonetheless. She referred to him if only in the questions: “What’s *his* name?” or “Who is *he*?”.

Each of these principles is tied to a doctrine that Kripke rejects. Since identities are necessary, requiring that perfect logicians know them as soon as they know their terms would make sense if necessity is identified with what can be known *a priori*. And descriptivism excludes the possibility of reference without descriptive knowledge.

Note that on the relation between referring and knowing who, Kripke is closer to Quine than to Hintikka. Quine deals with the sort of case adduced by Hintikka in support of his knowledge condition for reference (see above, p. 6) by regimenting transparent from opaque occurrences of referring expressions. Using the convention that all designators inside corner quotes are taken transparently if and only if they refer back to designators outside the quotes, he distinguishes:

- (a) Of the dictator of Portugal,  $a$  knows that  $\ulcorner$  he is dictator. $\urcorner$  from:
- (b)  $a$  knows that  $\ulcorner$ the dictator of Portugal is dictator. $\urcorner$ <sup>16</sup>

<sup>14</sup> For a defense of this perspective, *vid.* W. Sellars, “Phenomenalism,” in *Science, Perception, and Reality*, (London & New York, 1963), esp. pp. 87-91.

<sup>15</sup> V. Hintikka, *op. cit.*, 141-2, and cf. Robert C. Sleight, Jr., “Restricted Range in Epistemic Logic,” *Journal of Philosophy* 69 (1972), p. 67.

<sup>16</sup> *Word and Object*, § 35. For Russell’s distinction of scope, *vid.* “On Denoting,” in *Logic*



This device corresponds to Russell's scope distinction for definite descriptions, and it presumes only that in (a) the exported expression is referential, not that a knows who it refers to. This leaves it open, as is proper, whether a knows who the dictator is to whom his knowledge refers. We can look at Kripke's method as merely extending Quine's device to alethic modalities (which Quine rejects): just as saying 'Of X, a knows (or believes) . . .' fixes the reference of X independently of anything that a actually knows or believes, so 'X' in 'X is necessarily . . .' fixes the reference of 'X' independently of the properties it might be assigned in any possible world.

Here for the sake of accuracy we must introduce a slight complication. What I have just been saying can leave the impression that definite descriptions (such as 'the dictator of Portugal') can function as rigid designators. For I did not, in the previous paragraph, specify that 'X' must be a name. Sentences like 'a knows that the dictator of Portugal . . .', or 'The dictator of Portugal might be . . .' would then be ambiguous according as to whether the description was used as a rigid designator or not. Kripke explicitly rejects this interpretation, however (346),<sup>17</sup> while acknowledging that such sentences are ambiguous. He prefers to explain in terms of scope alone the fact that descriptions can sometimes figure in *de re* modalities. Scope distinctions, he points out, can be more powerful than the distinction between rigid and non-rigid designators. For example: 'The number of planets might have been necessarily even' comes out *false* both if we take the designator as rigid and if we take it as non-rigid. Yet the sentence is intuitively true on some reading. Let us see why this is. If we use English idiom to indicate scope, taking the designator as rigid corresponds to the reading:

(1) The number of planets is such that possibly it is necessarily even.

As non-rigid:

(2) It is possible that necessarily the number of planets is even.

Both (1) and (2) are false; but the scope device leaves us one more alternative:

(3) It is possible that the number of planets is such that necessarily it is even.

And (3) is true.

This example is instructive if it reminds us that the crucial difference of Kripke's view concerns *names*. He is not arguing that all *de re* modalities must involve rigid designators, but that names are rigid designators and can appear in modalities *only de re*. Names are assigned by a method that precludes assignment to things in other possible worlds. And this is what would be required if we were to try and explain (3) in terms of rigid designators: assign a name (say: '8') to the number that is in some other possible world the num-

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*and Knowledge*, ed. Marsh, (London, 1956), p. 52; and cf. also A. F. Smullyan, "Modality and Description," in L. Linsky, ed., *Reference and Modality*, (Oxford, 1971).

<sup>17</sup> Cf. also Munitz, where his reasons are stated more fully, and from which the argument in the text below is taken.

ber of the planets. And then treat it as a rigid designator to ensure that its reference is fixed in every possible world.

Actually in this case it looks as if we could do this. For since numbers are necessary existents, this is equivalent to picking out 8 in *this* world and then looking for a world in which it is the number of the planets. There remains the difficulty that the original sentence did not say anything about any identifiable number. So we should not be allowed to pick our number until we have picked our world. This the original statement allows us to do in an infinity of different ways. Anyway the problem would recur with things of a certain *kind* even where they are not necessary existents. 'The animal I keep might have been necessarily warm-blooded', is true even though I keep no animal at all. Then when I go to a possible world where I keep a dog, I cannot properly *name* that dog, nor do I need to: for it has necessary properties merely in virtue of being a member of that natural kind.

That natural kind, however, *is* picked out and named in our world. To see the importance of this fact is to see Kripke's point in denying that Unicorns might have existed (253, 743-4). Once the conditions for identification and reference by names are seen to be causal, there can be no genuine reference to something in particular in another world which is not in this one. Consider the claim: 'Unicorns might have existed which were necessarily warm-blooded': here, 'Unicorns' purports to be a kind name, but there are no unicorns. Hence the name rigidity designates *nothing*. (We cannot have a rigid designator "starting from" another possible world.) On the other hand, we might concede that the corresponding statement phrased in terms of a description is true:

'there might have been a one-horned species of animals that were necessarily warm-blooded'.

And if this is acceptable, it is accounted for by the same scope interpretation as the example about numbers, even though no rigid designator is available within the possible world considered:

'It is possible that something one-horned is such as to be necessarily warm-blooded'.

We can easily enough imagine animals fitting the traditional description of unicorns; but *contra* descriptivists there are no sufficient qualitative conditions for belonging to a particular natural kind, any more than for being a particular individual. We would therefore never be able to identify those animals with "our" (nonexistent) unicorns. In this context, we can make good sense of *counterparts* of unicorns in possible worlds, precisely insofar as we have refrained, with Kripke, from usurping counterparts for the explanation of possibility *in general*.<sup>18</sup>

<sup>18</sup> Cf. 333, where a similar point is made in relation to the question whether *this* (wooden) table might have been made of ice:

Something like counterpart theory is thus applicable to the situation, but . . . it is precisely because it is *not* true that this table might have been made of ice from the Thames that we must turn here to qualitative descriptions and counterparts. To apply these notions to genuine *de re* modalities is, from the present standpoint, perverse.

Fictional entities, then, are not possible entities. Sherlock Holmes purports to be a particular, not just anyone of that description: and any person we could find (or persons: for there might be several) of that description in some possible world would not be *that man*. Hence modal logic is not the logic of fictional entities, and it need not, as some have thought, deem itself inadequate if it cannot find a place for the world of Alice among its models.

Here is a corollary. Individuals that exist, exist contingently. But individuals that do not exist are necessarily non-existent. This shows the superiority of the ontological disproof of the existence of a personal God. It accords with the intuitive fact that when we are talking about actual things we are referring in the full sense; whereas when we discuss possible objects we are really talking about things of a certain *description*: we do not think it strange to leave some of their characteristics completely unspecified. (We do not need, in order to satisfy the Law of Excluded Middle, to suppose that Sherlock Holmes either wore blue underwear or did not.)

But we must add a qualification, and face a small difficulty. Some names, such as 'Lycurgus' or 'Homer', have been thought by some scholars to refer to mythical figures, and by others to real men. If the issue can be debated there must be a sense in which such figures, if mythical, are not impossible. The distinction between epistemic and metaphysical possibility may explain this: we may never know whether these men are (necessarily) non-existent or (contingently) real; nevertheless, we may say, they must be one or the other. But this does not quite dispose of the matter. For the origin of a myth may involve one (or several) actual persons, by whom a conscious invention is inspired or on whom it is modeled. We need clear conditions for deciding on which side such causal chains are to fall: do they constitute referential chains, or not? Kripke readily acknowledges that more work is needed here, though his pessimism about philosophical theories suggests that he may not be very sanguine about the outcome (768-9; cf. 280).<sup>19</sup>

### III

I now return to problems about Essence. We saw earlier how the introduction of rigid designators eliminates a whole range of problems arising out of the attempt to lay down sufficient qualitative conditions of identity. It would be misleading to imply that we have thereby disposed of all problems about trans-world identification. For while we may not have any problems about individual essences, there still remain questions about general essences. These are necessary properties which science is supposed to discover. How are they picked out?

<sup>19</sup> The same problem arises in connection with mythical species. The sight of partially submerged rhinoceri may have led people to believe that there were animals like horses but with a horn, which they named 'unicorn'. So we would have a baptism and a causal chain from it to us. But in the mean time various legends sprang up, which are in fact false beliefs about unsubmerged rhinoceri. Nevertheless, unicorns are clearly not rhinoceri. (This point was suggested by a conversation with Peter Geach).

Intuitively the following principle is unexceptionable: if we are ascribing some property to a thing, the truth of our ascription cannot depend on the way that we choose to refer to it. Otherwise the property cannot belong to the thing in itself, but only in relation to some way of referring to it.<sup>20</sup> Hence the requirement that if we ascribe any modal property *de re*, substitution of co-referential terms be allowed without affecting truth values. In the empiricist tradition, however, it has been assumed that the only source of necessity is logical truth or analyticity. In other words, all necessity is *de dicto*.<sup>21</sup> But if this is so then it immediately follows that there is no legitimate notion of modality *de re*. Attempts have been made however to define a sense of *de re* modality in terms of *de dicto*. For epistemic as well as alethic modalities, the basic recipe is always the same: find a set of *privileged terms* which alone count in the determination of necessity *de re*, as follows: a modal property P belongs to an object x *de re* provided that ' $\alpha$  has P' is true *de dicto* where ' $\alpha$ ' is a member of the privileged class of terms designating x. Any other co-referential term may be substituted for ' $\alpha$ ' to yield a true statement, but it will hold *de re* only and not *de dicto* unless the substituted term is also a member of the privileged class. The motivation for this strategy clearly lies in the empiricist program of explaining necessity in terms of the *a priori*, and the *a priori* in terms of "relations of ideas," or of meaning, or of expressions.<sup>22</sup> Since Kripke has renounced the assumptions underlying this programme, we can expect him to abjure such attempts to make modality *de re* respectable by reducing it to *de dicto*.<sup>23</sup> And this is just what we find.

<sup>20</sup> For careful proofs of this, cf. D. Wiggins, *Identity and Spatio-Temporal Continuity* (Blackwell, 1967), p. 5, and R. Cartwright, "Identity and Substitutivity," in Munitz.

<sup>21</sup> Cf. n. 10 to p. 451 above.

<sup>22</sup> Given this motivation, the need for some such strategy is formally proved by Quine's demonstration that unrestricted substitutivity both of co-referential terms and of logical equivalents ensures truth-functionality (Quine, *Ways of Paradox*, pp. 161-2) and so are incompatible with modalities operating on sentences *de dicto*. If necessity *de re* is to be reduced to *de dicto*, therefore, some restriction on substitutivity must be imposed. The strategy has many variants. In Hintikka, the privileged terms are those that satisfy the schema: '(Ex)Ka(=x)', trickily read as 'a knows who =is'. (*Op. cit.*, 144). For Kaplan, the privileged terms are those that "represent" the thing or are "standard names" of it. ("Quantifying in," in Davidson & Hintikka, eds., *Words and Objections*, (Dordrecht, 1969).) Ernie Sosa requires that his terms be "distinguished," which turns out to be a context-relative matter ("Propositional Attitudes *de Dicto* and *de Re*," *Journal of Philosophy* 67 (1970). Plantinga gives a lucid account of this strategy and its motives, and requires merely that his privileged terms be proper names. As I pointed out above, his resulting reduction is a *reductio*, no doubt by design. (*vid. fn.* 10 to p. 451 above). Cf. also the paper by Sleigh cited in *fn.* 15.

<sup>23</sup> Another strategy with which we can assume Kripke would have equally little sympathy consists in confining quantified modal logic to forms that are not committed to essentialism in the full sense. Parsons ("Essentialism and Quantified Modal Logic," *Philosophical Review* 78 (1969)) argues that we can be content to think of the necessity of arithmetical or analytic truths as *de dicto* only, confining *de re* necessities to trivial ones. While Parson's aim in this article and in "Grades of Essentialism in Quantified Modal Logic" (*Nous* I (1967)) appears to be to refute Quine, he endorses Quine's central philosophical assumptions without reservation.

At first sight, it might seem that rigid designators are simply his version of the “privileged terms” of the classic strategy. But this would be wrong. The modal properties ascribed to things designated rigidly are not ascribed *de dicto*, but *de re*: that is to say, *about the thing* in question and nothing else. The fact that something is referred to rigidly merely ensures that it is still being referred to when other worlds are considered. It is precisely things referred to by *non-rigid* designators which must usually be treated as having modal properties only *de dicto* (unless scope indicates otherwise). For *non-rigid* designators can change their reference from one world to another, and consequently are not always “about the thing” (*de re*) which the designator picks out in the actual world. In Kripke’s scheme, defining *de re* in terms of *de dicto* would amount to defining modalities containing rigid designators in terms of the others. And of course that would be absurd: it would be a return to descriptivism.

For Kripke, modality *de re* needs no reduction. He sees quite clearly that this is a corollary of his insistence on the distinction between the *a priori* and the necessary:

the notion of essential properties can be maintained only by distinguishing between the notions of *a priori* and necessary truth, and I do maintain it. In Munitz, p. 153.)

We saw earlier that Kripke insists that definite descriptions are not rigid designators. And here, in connection with the most important application of his doctrine, may lie a problem.

The names of kinds are not always like ordinary proper names in having no meaning. One can agree that the discovery of white gold does not require us to change the meaning of the term ‘gold’ (for ‘gold’ is just the *name of that kind of stuff*) (316, 330). But the expressions typically appearing on the right hand of theoretical identifications *do* have a meaning that is heavily dependent on a vast body of theory. ‘H<sub>2</sub>O’, ‘Mean molecular kinetic energy’, and the like are not assigned to their reference by any simple baptismal rites: nor could Mill have been wrong about those general terms in thinking that they were “connotative” (cf. 322). So theoretical identifications of this kind are in fact assignments of necessary properties or identifications with referents of descriptions rather than straightforward identities. And how are these properties assigned? We have seen that they are not *a priori*. At a given stage in the development of a science, some properties thought to be necessary cease to be thought so, as science probes in some sense deeper into the nature of things.<sup>24</sup> It is a matter of replacing the earlier and more superficial grounds of classification by more *important* ones. Important, that is, to science: to the tasks of explanation, classification, and prediction.

But the weakening of the sense of ‘essential’ to that of ‘important’ is one of the things we were glad to avoid in repudiating individuating

<sup>24</sup> Cf. Quine, “Natural Kinds,” in *Essays in Honor of Hempel*, ed. Rescher et al. (Dordrecht, 1970):

Color is king in our innate quality space, but undistinguished in cosmic circles. Cosmically, colors would not not qualify as kinds. (p. 14).

essences. For it involved the paradoxical consequence that necessity would be context-dependent and admit of degrees. Are we committed to this consequence here, in connection with natural kinds? It seems we are: for the independence of metaphysics from epistemology on which the whole enterprise rested is itself put into question. When we say that the way heat feels is not essential but the fact that it consists in molecular motion is (326), we are resting our belief on the fact that the theory that *best* explains and describes heat phenomena entails facts about molecular motion. But the criteria implied here are not bivalent ones, any more than Quine's *ersatz* for analyticity (depth of embedding in a conceptual scheme) or Goodman's device for sorting true from false counterfactuals (entrenchment)<sup>25</sup>. Properties will be more or less necessary as they are more or less deeply embedded in our floating conceptual currency, or as they are more or less entrenched in our language. (I am not drawing parallels between the views of Quine, Goodman and Kripke on this point. I am making a theoretical identification. Are they possible in philosophy?)

As a corollary, another distinction that Kripke was anxious to maintain has all but collapsed. The *de re* necessity of essential attributes of natural kinds turns out to rest entirely on their deducibility from sufficiently deep and accepted theories. Of course this is more than necessity *de dicto* in the formal sense: for *de re* statements are not reduced one by one to *de dicto* versions. But it is good enough to satisfy an empiricist for whom the only necessity is logical, and who will countenance others provided they can be explained in terms of it.

Kripke can rebut these objections. But only, I think, at Pyrrhic cost.

He might point out that not all physical necessity is necessity *tout court*. Not all causal facts are "necessary in the highest degree" (304), but only those that pertain to the identity of kinds. Thus it may well be causally necessary that (some) gold be yellow: but it is not an essential property of gold. For the very self-identity of the kind does not depend on it. One will know just what it does depend on when the nature of that kind has been understood in the "basic terms of physical theory" (326).<sup>26</sup> And whether something is necessary in this sense will just be a yes-or-no matter. It will be so even if we never find out what the answer is for sure. Kripke need have no qualms in admitting this possibility: just so is the independence of metaphysics upheld.

The suggestion here is that beliefs about necessity *de dicto* in terms of the purposes of science will adequately *express* true necessity *de re* only at the ideal end of science. At that point, *ex hypothesi*, science will have fully uncovered the nature of things. But this answer spells more trouble.

The first problem concerns the *point* of introducing necessity at that level. When science has discovered at the most basic level how

<sup>25</sup> Cf. Quine, "Two Dogmas of Empiricism," in *from a logical point of view*, Harvard, 1953, and N. Goodman, *Fact, Fiction, and Forecast*, Harvard, 1955.

<sup>26</sup> There is no need to quibble about whether any arbitrary limitations are entailed by the term 'physical' here. For as Chomsky once remarked, we call any phenomenon 'physical' just as soon as we understand it.

things are, how will it respond to the classic empiricist challenge that nothing is *added* by the claim: ‘all this is how it is *necessarily*’? At all other levels, necessity is conditional: determined events and conditions owe their necessity to the fact that they can be deduced from the most basic facts. What is the force of treating those basic facts themselves as necessary rather than “brute”?

The retort, perhaps, is that this challenge simply begs the question of the priority of epistemology. That things are necessary might make no difference to what we think or know, except that it just is so and we are right to believe it. How one greets such a response depends, no doubt, on one’s philosophical taste. But it does not embody any simple mistake.

Another difficulty springs from the possibility that for Quinean reasons ‘the ideal end of science’ does not designate uniquely. Then it seems there must be not one set of absolute metaphysical necessities, but several alternative ones, depending on what translation manual you use, as it were, in getting to nature *an sich* from its empirical description. But isn’t it precisely a feature of the realist view of metaphysics that in the objective world untainted by the relativities of knowers and describers there can only be *one* way that things are (and necessarily are)?<sup>27</sup>

Lastly, here is the most intriguing difficulty. It seems at least (epistemically) possible that the “basic terms of physical theory” will include such notions as sub-atomic particules, fields, quanta, and so forth. None of these terms refers to particulars or kinds of particulars such as the picture elaborated in “Naming and Necessity” describes. One cannot baptize a sample of the “things” denoted by these terms; one cannot make sense, in most cases, of reidentifying the same one in this world, let alone in other possible worlds; one cannot sensibly wonder whether it has “its origin in the same hunk of matter”; and one cannot therefore distinguish, among the causal properties of such “things,” those that are essential to the kinds of things they are from those that are not. For at that deepest level, there may simply not be *kinds of things* at all.<sup>28</sup> In short, at the limit where science catches up with objective necessity, conceived as something deeper than mere physical necessity, it may lack any *rebus* for it to be *de*.

If my remarks have been pertinent, Kripke’s total picture does not have the monolithic cohesion that his persuasive defense of it suggests. His views on names, reference, and necessary identity-statements about individuals are, I believe, certainly right. But the close links that can be drawn between these views and recent empiricist modifications to the theory of knowledge do not presage a radical break with the empiricist tradition.

<sup>27</sup> Contrast N. Goodman, “The Way the World Is,” in *The Review of Metaphysics*, XIV (1960):

For me, there is no way which is the way the world is; and so of course no description can capture it. But there are many ways the world is, and every true description captures one of them. (p. 55).

<sup>28</sup> Such a doubt is expressed by Quine in “Natural Kinds” (21-2). We can take his point without sharing his feeling that natural kinds and their fellow-travellers (cause, subjunctive conditionals, dispositions, etc.) are scientifically “disputable.”

His application of these views to general terms for natural kinds, however attractive, suffers from difficulties due to the fact that the terms on the right hand side of theoretical identifications resemble descriptions more than they resemble names. In his considerations in favour of taking kind names as rigid designators, Kripke concentrates on the terms that typically appear on the left-hand side: 'gold', 'heat', 'water'. So for support of their necessity he must fall back on intuitions about essential properties: and here we found that the independence of *de re* necessity and of metaphysics from epistemology, the revolutionary core of Kripke's views, must probably fail at the very limit where its success would have promised to become manifest.

#### IV

Kripke's argument about the identity thesis forms a swift-moving *coda*, dependent on but not seriously affecting the main themes. I shall end with some comments on it in which I shall ignore any difficulties it might inherit from faults in the central doctrines.

Kripke is right in claiming that "someone who wishes to maintain an identity thesis cannot simply accept the Cartesian intuitions" to the effect that brain states and sensations are contingently related. "He must explain them away, showing how they are illusory" (336). For on his premises if they are identical they must be necessarily so. This outlines one strategy open to someone who wishes to escape the consequence of his argument: show that the illusion of contingency is due to the contingency of the ways in which the rigid designators have acquired their reference. That is how it may seem that heat is only contingently identical with molecular motion: actually it is the way that heat was originally *picked out* which was contingent, for we might not have had organs to feel it, or to feel is as a sensation having just that quality. The consideration that is supposed to block this strategy in the case of pain and brain states stems from the fact that if we have a pain, no further organ (which we might not have had) is required to feel it. In the case of pain, not to be *felt* as a pain is for no pain to *exist* (339).<sup>29</sup>

On Kripke's own terms, this argument seems inadequate. It begins by reminding us of the possibility of necessary *a posteriori* judgments (like 'heat is molecular motion'), and proceeds to ignore the converse possibility, that of contingent *a priori* judgments (cf. 279). To see how this might apply here, let us take a brief look at the case which according to Kripke impugns the doctrine that *only* the necessary can be known *a priori*:

If someone fixes a meter as 'the length of stick *S* at  $t_0$ ' then in some sense he knows *a priori* that the length of stick *s* at  $t_0$  is one meter, even though he uses this statement to express a contingent truth (346-7; cf. 279).

<sup>29</sup> Note a misprint at a crucial stage here. The argument just sketched concludes: "the apparent contingency . . . thus can be explained by some sort of qualitative analogue as obtained in the case of heat." (339). Obviously this should read: ' . . . thus cannot be explained'.



It may be this apparent anomaly which Wittgenstein tried to avoid by claiming that the standard Meter is neither one meter long nor not one meter long (274).<sup>30</sup> Perhaps, following the latent streak of verificationism that some have thought to detect in the *Investigations*, Wittgenstein reasoned as follows:

The ostensive definition of the meter purports to determine the length of one meter by reference to a standard stick. We have no access to the length "one meter" independently of that stick. When we say of something else that it is or is not one meter long, we are entitled to say so because we have independent access to what that length is: comparison with the standard stick. But if we say this of the standard itself, we presuppose (or give to understand) that we have such independent access to the length, one meter, for we are purporting to say more than *that the stick is equal to itself in length*. Since this presupposition is not satisfied, it is illegitimate to ascribe any length to the standard. The trace of verificationism in this reasoning is in the unwillingness to distinguish between the objective fact (the stick has a certain length) and our access to that fact (comparison with a standard). This fosters a rejection of *de re* necessity, which is traditionally inaccessible to observation, in favour of *de dicto*, which has an unmysterious source in language. Once we define one meter as "The length of the stick *S*," then "the length if *S* is one meter" has the ring of an analytic truth. But the truth we are looking for, about the actual length of *S*, is surely a contingent one. And there seems no way to express it.

In Kripke's terms, the answer to all this is clear. 'One meter' is a rigid designator, but 'the length of *S*' is not. The latter conventionally (hence *a priori*) fixes the reference of 'one meter': but it does not fix its meaning, for as a name it has no meaning, strictly speaking. Since one of its terms has no meaning, 'The length of *S* = one meter' cannot be analytic. Though it is known *a priori* in virtue of the stipulation of reference, it is contingent.

Now apply this to pains and brain states. A sensation is called a *pain* if it is painful. *A priori*, therefore, pains are painful. On this we can agree. But it no more follows that pains are necessarily painful, than it follows from the fact that the standard Meter is known *a priori* to be one meter long that it is necessarily one meter long. It may well be that we shall never have independent access to those entities we call our pains, other than their painfulness. In that case the identity thesis would never be vindicated. (Yet it might be true for all that.) It might also be that if we have succeeded in designating a natural kind by the word 'pain',<sup>31</sup> then we shall some day have independent access to things of that kind. It *could* be through finding out that they are in fact cases of C-fibre stimulation (just to take something known to be

<sup>30</sup> Quoting Wittgenstein, *Philosophical Investigations*, § 50.

<sup>31</sup> The point at issue between the advocates of type-type identities and the advocates of particular identities (cf. n. 74, 354). The latter deny what the former assert, that pain is a natural kind.

false). This cannot be definitely precluded by Kripke's argument, unless he abjures the notion of contingent *a priori* statements.

I have of course not *shown* that 'pains are painful' is such a statement. But the argument has been brought to a stalemate, as is often the case when one party takes the plausibility of the premises of a valid argument as grounds for accepting the conclusion, while the other takes the implausibility of the conclusion as grounds for rejecting some premise. In this case the convertible argument may be set out thus:

1. (a) 'Brain states are painful' is a *posteriori*.  
(b) Brain states are contingently painful.
2. (a) 'Pains are painful' is a *priori*.  
(b) Pains are necessarily painful.
3. For any  $x$  and  $y$ , if  $x=y$  then  $x$  and  $y$  have all properties *including modal properties* in common.
4. Therefore, pains are not identical with brain states (by 1(b), 2(b), and 3).

Both sides can grant 1, 2(a), and (3).<sup>32</sup> But since 2(b) is the crucial premise for the argument and doesn't follow from 2(a), the identity theorist will consider any theoretical grounds for rejecting 4 as *ipso facto* grounds for rejecting 2(b). Kripke, on the other hand, prefers to believe 2(b) and explain away any apparent grounds for rejecting 4.

In the light of this formal deadlock, Kripke's insistence on the intuitive obviousness of 2(b) reflects curiously on our earlier discussion about essence. "Can any case of essence," he asks rhetorically, "be more obvious than the fact that being a pain is a necessary property of each pain?" (Actually he should have said: "being *painful*.") This almost has the ring of a value judgment: the painfulness of pain must be more intrinsically *important* than any physical properties of the states correlated with pains, however important the scientific purposes served by the discovery of those properties might prove to be. How but by interpreting 'essential' here in a quasi-moral sense of 'most important' could we know any such thing in advance of scientific evidence?

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<sup>32</sup> Though it is clear from this argument that this is not the only strategy open to the advocate of the identity thesis. He could also hope that science might show that it is of the essential nature of certain brain states to be painful, thus allowing him to reject 1(b) while still granting 1(a).

Note moreover that 2(a) may be accepted as describing a *priori* knowledge about the *referent* of 'pain' but not about its *meaning*. This is what is required by taking 'pain' as a name for a natural kind (*vid.* 346, n. 22, and cf. above, p. 449 with n. 4, pp. 450-1 and p. 463).