

**Names and Rigid Designation**  
A Companion to the Philosophy of Language  
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The fact that natural language proper names are rigid designators is an empirical discovery about natural language. However, unlike other empirical discoveries about language made in the past few decades, it is one which has been taken to have great philosophical significance. One reason for this is that it helped simplify the formal semantical representation of ordinary modal discourse. But the central reason is that the discovery threatens a certain picture of the content of names, the descriptive picture, upon which a great deal of philosophy was premised.

This paper is mainly intended to be a survey of both the background and contemporary discussion of this discovery. However, the survey takes place in the context of an evaluation of the extent to which the discovery that English proper names are rigid, by itself, threatens the descriptive picture of the content of names. The goal is to show that the exact philosophical significance of the discovery that natural language proper names are rigid designators is still, and should still be, a matter of controversy.

Section I discusses different explications of rigidity. Section II is devoted to a sketch of the development of the notion of rigidity. Section III is a discussion of the descriptive picture of the content of names. In Section IV, Kripke's argument for the thesis that natural language proper names are rigid is outlined, as well as an argument based upon this thesis against the descriptive picture. Finally, the remaining three sections cover various possible defenses of the descriptive picture.

### **Section I. Rigidity**

Rigidity is a semantic property of an expression. More specifically, it has to do with the evaluation of that expression with respect to other possible situations (or 'worlds'). There are many subtle issues involved in the notion of evaluating an expression with respect to a possible situation, some of which we will discuss in this paper. But there are also some simple confusions

about this notion. Before we begin our discussion of rigidity, it is important to dispel one such confusion.

On one way of understanding evaluation of a sentence with respect to another possible world, a sentence is true with respect to another possible world just in case, if the sentence were uttered in that other possible world, it would be true. However, this is decidedly *not* how to understand the notion of evaluation with respect to another possible world which underlies our modal discourse.

The correct notion of evaluation of a sentence with respect to another possible world involves considering the sentence as uttered in the *actual world*, rather than as uttered in other possible worlds. When the sentence is uttered in the actual world, it expresses some semantic value which is determined by how the words are used by speakers in the actual world. This semantic value is then evaluated with respect to other possible worlds. What the nature of the entity is which is evaluated with respect to other possible worlds --whether it is a "proposition" (what is said by an utterance of the sentence) or some other entity-- is a difficult question, and one which we will address at the end of this paper. But for now, it is only important to note, as a preliminary to our discussion of rigidity, that what is at issue in evaluating a sentence with respect to another possible world, does not involve considering that sentence as uttered in that other possible world, but rather considering the sentence as uttered in the actual world.

How an expression *e* is used by speakers in other possible situations is thus irrelevant to the question of the extension of *e* is when evaluated with respect to those other possible situations. For instance, what the denotation of "Cayuga Lake" is with respect to another possible world has nothing to do with how the speakers of that world --if there are any-- use the expression "Cayuga Lake". It just has to do with which object Cayuga Lake is in that world. Now that this possible confusion has been eliminated, we may turn to the notion of rigidity.

According to Kripke's characterization of rigidity, "a designator *d* of an object *x* is rigid, if it designates *x* with respect to all possible worlds where *x* exists, and never designates an object other than *x* with respect to any possible world".<sup>1</sup> This characterization, as Kripke intends, is neutral on the issue of the extension of the designator *d* in possible worlds in which *x* does not exist. That is, if *d* is a designator which satisfies the above criteria, there are three possibilities left open for *d*'s extension in worlds in which *x* does not exist. First, *d* could designate nothing

with respect to such possible worlds. Second, *d* could designate *x* in all such possible worlds (despite *x*'s non-existence in those possible worlds). Third, *d* could designate *x* with respect to some such worlds, and designate nothing with respect to other such worlds.

These three possibilities determine three different species of rigidity. However, only the first two species deserve discussion; a designator in the third class is a hybrid, and there is no reason to countenance such expressions. In the rest of our discussion, I will not consider designators in this third class left open by Kripke's characterization of rigidity.

The first species of rigidity, corresponding to the first of the above possibilities, includes all and only those designators *d* of an object *x*, which designate *x* in all worlds in which *x* exists, and designate nothing in worlds in which *x* does not exist. Following Nathan Salmon (1982, p.4), let us call these *persistently rigid designators*.

The second species of rigidity, corresponding to the second of the above possibilities, includes all and only those designators *d* of an object *x*, which designate *x* in all worlds in which *x* exists, and designate *x* in all worlds in which *x* does not exist; or, more simply, designate *x* with respect to every possible world. Again following Salmon, let us call these *obstinately rigid designators*.<sup>2</sup>

There are expressions which are rigid in both of the above senses. For instance, consider Kripke's class of *strongly rigid designators* (Kripke, 1980, p. 48).<sup>3</sup> This class contains the rigid designators of necessary existents. That is, this class contains all and only those designators *d* of an object *x* which exists in all possible worlds, which designate the same thing in all possible worlds (viz. *x*). For example, the descriptive phrase "the result of adding two and three" is a strongly rigid designator, since its actual denotation, namely the number five, exists in all possible worlds, and the phrase denotes that number with respect to all possible worlds. Strongly rigid designators clearly belong to both of the above classes.<sup>4</sup>

At several points in this paper, considerations in support of the notion of obstinate rigid designation over that of persistent rigid designation will be advanced. However, it is unclear to what degree issues about persistent rigidity vs. obstinate rigidity are substantive, rather than merely disguised terminological discussions about how best to use the expression "evaluation with respect to a world". There is a sense of this expression in which it seems to presuppose the existence of the denotation in the world, and if someone is using the expression in this sense,

then persistent rigidity might be the more appropriate notion. If, on the other hand, one has a purely semantical understanding of "denotation with respect to a world", then the fact that the semantic rules directly assign a denotation to an expression might lead us to think that even in worlds in which that object does not exist, it is still the denotation of the relevant expression. But these are certainly just terminological issues.<sup>5</sup>

A further distinction is often made in discussions of rigidity. This is Kripke's distinction between *de jure* rigidity and *de facto* rigidity.<sup>6</sup> An expression is a *de jure* rigid designator of an object just in case the semantical rules of the language unmediately link it to that object. All other rigid designators of objects are *de facto* rigid designators of them. To give an example from Kripke, the description "the smallest prime" is supposed to be *de facto* rigid, because it is not metaphysically possible for there to be a smallest prime distinct from the actual smallest prime, viz., two. The fact that "the smallest prime" denotes the same object in every world flows, not from semantics, but from the metaphysical fact that mathematical facts are true in all metaphysically possible worlds. If, on the other hand, the semantical rule for a term *t* takes the form of a stipulation that it denotes a certain object *x*, then *t* is *de jure* rigid, since it is part of the semantical rules that it denotes that object.

The intuitive content of *de jure* designation lies in the metaphor of "unmediated" reference. A rigid *de jure* designator is supposed to denote what it denotes without mediation by some concept or description. A *de facto* rigid designator, on the other hand, is supposed to denote what it denotes in virtue of its denotation meeting some condition. That is, a *de facto* rigid designator denotes via mediation of some concept or description.<sup>7</sup>

The core notion of rigidity has been taken by philosophers to be *de jure*, obstinate rigidity. This is the notion which lies at the center not only of Kripke's work, but also of David Kaplan's work on direct reference.<sup>8</sup> We will give some (albeit not so weighty) reasons in future sections for preferring obstinate rigidity over persistent rigidity. But we shall see already in the next section why the *de jure* character of rigidity is thought to be important. For rigidity arose in the development of the semantics of Quantified Modal Logic (henceforth QML), and in particular, as a part of the explanation of the variables in QML. In that context, there is no question that *de jure* rigidity is the relevant concept.

## Section II. Rigid Designation and Quantified Modal Logic

The pre-theoretic notion of rigidity began its life as a concept in the semantics for QML. In particular, rigidity arose in connection with the 'objectual' interpretation of QML, where the quantifiers were taken to range over objects, rather than non-constant functions. Even more specifically, rigidity was relevant to issues concerning Quine's "modal paradoxes", raised as objections to the coherence of QML. In this section, I will attempt to show where the notion of rigidity enters into the attempt to give a coherent and natural semantic interpretation to QML.

One of the first issues which arose in QML was what the proper intended interpretation of quantification should be. The two camps in the 1940's were the conceptual interpretation, championed by Alonzo Church and Rudolf Carnap, and the objectual interpretation, championed by Ruth Barcan Marcus.<sup>9</sup> But while Church, Carnap, and Barcan Marcus and others were developing axiom systems for QML, Willard Van Orman Quine was busy attempting to demonstrate their incoherence.

Quine raised two influential objections to QML.<sup>10</sup> According to the first of these objections, quantification into modal contexts violated fundamental logical laws. According to the second (and obviously related) objection, if QML and its intended interpretation could be so formulated as to evade the first objection, then it would inexorably carry with it unpalatable metaphysical commitments.<sup>11</sup> Since the defenders of QML partially defined their own positions against the first of these objections, something must be briefly said about it here. Then, we will outline the conceptual interpretation of QML, then the objectual interpretation, explaining how their original espousers evaded Quine's worry.<sup>12</sup>

According to the principle of substitution, for any terms  $a$  and  $b$ , if " $a = b$ " is true, then, for any formula  $\phi$  containing " $a$ ", the result of replacing one or more occurrences of " $a$ " by " $b$ " does not change the truth-value of  $\phi$ .<sup>13</sup> However, according to Quine, QML essentially involved a violation of this principle. For "nine = the number of planets" is true. Furthermore, "Necessarily, nine = nine" is true. But the result of substituting "the number of planets" for the first occurrence of "nine" in "Necessarily, nine = nine" yields a falsity, viz., "Necessarily, the number of planets = nine".

Quine took the failure of substitution in modal contexts also to demonstrate the failure of existential generalization in QML. That is, Quine took the failure of substitution to show that the inference from " $\Box Fa$ " to " $\exists x \Box Fx$ " is illegitimate. The reason Quine thought that a failure of substitution demonstrated the failure of existential generalization is that he thought that substitutability by co-referential terms was a *criterion* for the legitimacy of quantifying in.<sup>14</sup>

Here is one reason why Quine thought that the substitutability of co-referential terms in a linguistic context C was a criterion for the legitimacy of quantification into C. Consider a quotational context, such as:

(1) The first sentence of the (English translation of the) Duino Elegies is "Who, if I cried out, would hear me among the angels' heirarchies?"

Inside such a quotational context, substitution of co-referential terms fails to preserve truth-value. For example, (1) is true, but (2), which results from (1) by the substitution of co-referential terms, is false:

(2) The first sentence of the (English translation of the) Duino Elegies is "Who, if Rilke cried out, would hear Rilke among the angels' heirarchies?"

Thus, substitution of co-referential terms fails in quotational contexts.

But it is also illegitimate, according to Quine, to quantify into such contexts. To see this, consider the sentence:

(3) There is something x such that "Who, if x cried out, would hear x among the angels' heirarchies?" is the first sentence of the D.E.

(3) is false. The reason (3) is false is, as Quine is fond of pointing out, that the quoted sentence in (3) names, not some sentence which results from replacing 'x' by a term, but rather a sentence containing the symbol 'x'. That is, a quotation such as "'x flies'" denotes the result of concatenating the symbol 'x' with the word 'flies', not the concatenation of some replacement term for 'x' with "flies". Thus, for Quine, it is illegitimate to quantify into quotational contexts.<sup>15</sup>

But Quine does not simply conclude from the failure of both substitution and quantifying into quotational contexts that substitution is a criterion for quantifying in. For Quine, the failure of substitution in a linguistic context demonstrates a deep incoherence in quantifying into such contexts. For in giving the semantics of a quantified sentence, one must avail oneself of the

notion of satisfaction; the sentence is true just in case some object satisfies the relevant open sentence. Yet for Quine, the failure of substitution shows that there is no available notion of satisfaction in terms of which one can define the truth of such sentences. There is no notion of objectual satisfaction for quantifying into quotational contexts, for instance, because such contexts are sensitive, not just to objects, but also to how they are named.

Thus, for Quine, the failure of substitution in modal contexts demonstrated that there was no appropriate notion of objectual satisfaction for open formulas such as " $\Box Fx$ ". For the failure of substitution seemed to show that whether or not an object satisfied an open modalized formula depended upon how the object was named. Quine hence thought there was a similarity between modal and quotational contexts: in both cases, what matters is how the object is named, rather than just the object itself. Quine concluded that there was no way of giving a coherent semantics for sentences such as " $\exists x \Box Fx$ ", since there was no available notion of satisfaction in terms of which one could define the truth of the sentence. He hence declared that quantification into modal contexts was illegitimate (since incoherent), and existential generalization fails.

There is also a historical reason for Quine's analogy between modal and quotational contexts. For Quine's target, Carnap, wished to explicate necessity in terms of the analyticity of certain sentences. That is, Carnap believed that to say that a certain proposition was necessary was "really" to say, of a certain sentence, that it was analytic (Carnap, 1988, p. 174).<sup>16</sup> Thus, according to Carnap, a construction such as (a) "really" expressed (b):

- (a) Necessarily, bachelors are unmarried men.
- (b) "Bachelors are unmarried men" is analytic.

So, according to Carnap, modal contexts were really disguised quotational contexts. If so, then quantifying into modal contexts seems tantamount to quantifying into quotational contexts.

There are several responses which have been given to Quine's challenge. One response stems from the interpretation of QML which emerged from the work of Church and Carnap. According to this approach, variables in modal languages ranged over individual concepts; describable (in contemporary terms) as functions (possibly non-constant) from possible worlds to extensions. The principle of substitution, on this approach, was interpreted as licensing, not substitution of terms for two extensionally equivalent individual concepts (that is, functions which yield the

same denotation in the actual world), but rather substitution of terms which denote the same individual concept.

Now, "nine" and "the number of planets" do not express the same individual concept, for though they are extensionally equivalent, there are possible situations in which the extension of "the number of planets" is different from the extension of "nine". Thus, the principle of substitution does not license the substitution of "the number of planets" for "nine", on this account of QML. Furthermore, any two expressions which do express the same individual concept (are "L-equivalent", in Carnap's terms) will be substitutable, even in modal contexts.

This 'conceptual' interpretation of QML thus has a systematic, logically consistent account of the notion of the satisfaction of an open modal formula (cf. Church, 1943, and MN, Sections 43 and 44). On the conceptual interpretation of QML, one can take the quantifier in " $\exists x \Box Fx$ " to range over individual concepts. In this case, the relevant notion of satisfaction is satisfaction by individual concepts, rather than objects.<sup>17</sup>

However, the conceptual interpretation of QML does not seem to accord with our natural interpretation of QML. The sentence:

(4)  $\exists n(\Box n \text{ numbers the planets})$

is intuitively false on a natural reading of the quantifier (c.f. Garson, 1984, pp. 265-267). The reason it seems false to us is that, according to a very natural reading of (4), what it asserts is that there is some object which necessarily numbers the planets. However, on the conceptual interpretation, (4) is true, because the individual concept expressed by "the number of planets" will satisfy the open formula:

(5)  $\Box n \text{ numbers the planets}$

Since, in every possible world, the number of planets numbers the planets.

What such examples demonstrate is that the natural reading of quantification into modal contexts is as quantification over objects, rather than over individual concepts. If we wish to capture this intuition, then we should think of say, an existential quantification into an open modal formula (henceforth OMF) as true just in case some object satisfies the relevant modal condition.<sup>18</sup> On this account, which we shall call the objectual interpretation of QML, the first-order quantifiers range only over objects, rather than concepts.

According to the objectual interpretation, a sentence such as " $\exists x \Box Fx$ " is true just in case some object is necessarily F. But what about Quine's worry? Can the objectual interpretation supply a natural account of the satisfaction of OMFs?

An OMF, such as " $\Box Fx$ ", is, on the objectual conception, satisfied by an assignment just in case the object which that assignment assigns to 'x' is necessarily F, i.e. is F with respect to every possible situation, *irrespective of any names of that object*. We are not to understand the satisfaction of such an OMF "substitutionally", as satisfied by an assignment just in case, for some name a of the object which that assignment assigns to 'x', the sentence, " $\Box Fa$ " is true. Rather, we are to read " $\Box Fx$ " as satisfied by an assignment s just in case the object which that assignment assigns to 'x' satisfies F with respect to every possible situation.

This understanding of the satisfaction clause for OMFs undercuts Quine's objection to the coherence of quantifying into modal contexts. For Quine's worry only can arise if objectual satisfaction is characterized in terms of the truth of closed sentences containing names of the alleged satisfiers. Only if objectual satisfaction is given such a substitutional construal is it relevant to the coherence of quantifying into modal contexts that two closed modalized sentences, differing only in containing different names for the same object, may differ in truth-value.<sup>19</sup>

If such a notion of an object satisfying a predicate necessarily indeed makes sense, then it is possible to quantify into modal contexts despite the failure of substitution. Of course, Quine's *other* objection to QML is that, where the necessity in question is metaphysical, this notion involves a dubious metaphysic of essentialism. But discussion of this question will take us too far afield of the topic of rigidity.

This construal of the satisfaction of OMFs, combined with possible world semantics, naturally brings with it an interpretation of variables according to which they are de jure rigid designators. To see why this is so, consider a sentence of QML such as " $\exists x \Box (\text{Exists}(x) \Rightarrow \text{Rational}(x))$ ".<sup>20</sup> According to the objectual interpretation of QML, this sentence is true just in case there is some assignment function which assigns to the variable 'x' an object o which, in every possible situation, satisfies the open formula " $\text{Exists}(x) \Rightarrow \text{Rational}(x)$ ". The evaluation of the truth of the sentence hence involves, relative to an assignment function, evaluating the open formula

"Exists(x)  $\Rightarrow$  Rational(x)" with respect to every possible situation. Since, in each possible situation, we are considering whether or not the object *o* satisfies the formula, we need to ensure that the variable 'x' denotes *o* in all of the possible situations. That is, on the objectual interpretation of QML, when taken with respect to an assignment *s*, variables are rigid designators of the objects which *s* assigns to them. The reason that variables are *de jure* rigid designators is because there is nothing else to the semantics of variables besides the stipulation that, when taken with respect to an assignment *s* which assigns the object *o* to a variable, it designates *o* in every possible situation.<sup>21</sup>

If we understand variables as rigid designators (with respect to an assignment), then the following version of substitution is validated:

$$(6) \forall x \forall y [x = y \rightarrow [\varphi \leftrightarrow \psi]]$$

(where  $\varphi$  differs from  $\psi$  only in containing free occurrences of "x" where the latter contains free occurrences of "y"). For even if  $\varphi$  and  $\psi$  contain modal operators, the rigidity of the variables will guarantee the intersubstitutability of "x" and "y".

The situation is slightly more complicated in the case of terms. Quine's challenge is to validate, not just (6), but also the fully schematic version of substitution:

$$(7) t = s \rightarrow (\varphi \leftrightarrow \psi)$$

(where  $\varphi$  differs from  $\psi$  at most in containing occurrences of *t* where the latter contains occurrences of *s*, and no free variables in *t* and *s* become bound when *t* and *s* occur inside  $\varphi$  and  $\psi$ ). But where *t* and *s* are replaceable by non-rigid designators, then (7) will, in the modal case, fail to be valid. Thus, the defender of the objectual interpretation who wishes to preserve full classical substitution must disallow non-rigid terms from her language.

There are also other motivations for restricting the class of terms to rigid ones on the objectual interpretation. For example, so doing would allow a uniform treatment of the class of terms. If all terms are rigid, then non-variables can be treated in the semantics as free variables whose interpretation does not depend on assignments.<sup>22</sup> Another reason is that, if one allowed non-rigid designators, one would have to restrict universal instantiation to rigid designators to retain (6), and some might hold that such a restricted UI rule is unappealing. Finally, non-rigid terms raise

further technical problems which, though certainly solvable, nevertheless complicate the semantics.<sup>23</sup>

At this point, the reason for the introduction of terms which directly represent objects is purely technical -- it is a technical response to a logico-semantical dilemma. If one wishes to preserve classical substitution, as well as the objectual conception of satisfaction, then one must ensure that one's variables and terms are rigid. In availing ourselves of such terms, there is no commitment to thinking that any terms in ordinary language are rigid. Rigid terms only play the role, at this stage, of desirable formal semantical tools, which allow us a better grasp of the objectual notion of satisfaction, as well as an explanation of the validity of classical substitution.

However, if we wish QML to serve as a representation of ordinary modal discourse, then the rigidity constraint on terms may seem problematic. Without a philosophical justification of this restriction, or a semantical argument to the effect that natural language terms are rigid, this restriction is ad hoc. If natural language singular terms are non-rigid, then the extra logico-semantical complexities which attend the addition of non-rigid terms into QML will either have to be accepted as realities, or used as a basis for rejecting its coherence.<sup>24</sup>

Even in the late 1940's, it was recognized that a philosophical/semantical argument demonstrating the rigidity of natural language terms would be desirable.<sup>25</sup> However, it was not until the seminal work of Saul Kripke in 1970 that a fully explicit argument for this conclusion was forthcoming. But Kripke's ambitions went far beyond demonstrating that natural language terms are rigid. For Kripke used the notion of rigidity as a basis for quite substantive claims about the nature of intentionality. It was thus with Kripke that the *philosophical* construal of rigidity began.

### Section III. The descriptive picture

According to the picture of intentionality attacked by Kripke, the way our words hooked onto an extra-linguistic reality was via description. That is, a name such as "Aristotle" denoted the person, Aristotle, because the name was associated with a series of descriptions (such as "the last great philosopher of antiquity") which were uniquely satisfied by the person, Aristotle. More relevant for our purposes, however, is Kripke's attack on the descriptive picture of the *content* of proper names. According to this, the content of a name was given by the description which fixed its referent. That is, what someone said when they uttered a sentence such as "Aristotle is F", was a descriptive proposition to the effect that, say, the last great philosopher of antiquity, whoever he was, is F.

In NN, Kripke first demonstrated that ordinary language proper names were rigid. He then used this feature of names as part of a larger attack on a certain version of the above picture of content.

In the next section, we will discuss how Kripke used rigidity to attack the descriptive picture. But before we do so, it is important to gain an understanding of what the descriptive pictures of intentionality and content are. In particular, we will distinguish two different versions of the descriptive picture which are often not distinguished in the literature.

The problem of linguistic intentionality, in one of its forms, is the question of what it is in virtue of which an expression has the reference it does. According to the first descriptive picture of linguistic intentionality, what it is in virtue of which a primitive expression has the referent it does is that it is associated with a set of descriptions, in purely general, non-indexical or particular involving terms. These descriptions are uniquely satisfied by an entity, which then counts as the reference of that term.

A less problematic and more commonly held version of the description theory dispenses with the requirement that the descriptions which fix referents must be given in purely general terms. According to this version, which is most explicit in the works of Strawson and Dummett, but at least implicit in Frege, the descriptions which fix referents can, and indeed often must, contain non-descriptive elements.<sup>26</sup>

It is worthwhile to mention briefly a motivation for the latter picture of intentionality. One might think that, in the case of demonstrative reference, one has reference without any

description. But this is merely a myth. Suppose I point to a brown table, and say "This is brown". It is not my pointing alone which fixes the reference of the occurrence of "this", for my finger will also be pointing at the edge of the table, or a small brown patch on the table. Rather, a factor in fixing the reference of my demonstrative is that I intend to be demonstrating some object whose identity criteria are those of tables, rather than those of small brown patches or edges. Such identity criteria play a crucial role in overcoming the massive indeterminacy of ostensive definition. It is for their specification that descriptive material is required.<sup>27</sup> But this insight in no way requires that we ignore the non-descriptive element inherent in true demonstrative reference.<sup>28</sup>

A final relevant factor which distinguishes descriptive accounts of intentionality from each other has to do with the role of the social. According to Russell, as well as the account of descriptive intentionality attacked by Kripke in NN, a term refers, in the mouth of a speaker, to that object which satisfies the descriptions the *speaker* associates with the term. However, according to other traditional descriptive accounts, such as that of Strawson, what is relevant is not which descriptions the speaker associates with the term, but rather which descriptions are associated with the term in the language community. On this latter, more plausible account, a use of a term in the mouth of a speaker refers to the object it does in virtue of her participation in a language community which associates certain descriptions with that term that are uniquely satisfied by the object in question.<sup>29</sup>

There thus are two different versions of the descriptive picture, one according to which the descriptions must be in general terms alone, and another in which the descriptions may contain irreducible occurrences of demonstrative and indexical expressions. Each of these two versions has two sub-versions; one according to which it is the descriptions the speaker associates with a term which are relevant for determining the reference of terms she uses, and the other according to which it is the descriptions the language community of the speaker associates with the term which determine the reference of the term when she uses it.

Each of these versions corresponds to a theory of the content of sentences containing proper names. On the first picture, utterances of sentences containing proper names expressed descriptive propositions, where the relevant descriptions only contained expressions for general

concepts. According to the second version of the description theory, utterances of sentences containing proper names also expressed descriptive propositions. However, these descriptive propositions typically were also irreducibly indexical propositions. So, on this latter account, a sentence such as "Bill Clinton is F" would state some proposition equivalent to what is expressed by "The *present* president around here of the United States is F".<sup>30</sup>

If the descriptive picture is true, then, for each expression in our language, we possess a priori uniquely identifying knowledge about its referent. Such a premise is more than just a useful tool in epistemological and metaphysical theorizing. For if the descriptive picture is true, then we have a rich store of a priori knowledge. This makes more plausible a classic picture of philosophy, according to which it proceeds by a priori methods. The Kripkean challenge to the descriptive picture is thus not merely a challenge to an empirical thesis, but also threatens to undermine deeply rooted conceptions of the nature of philosophy.

#### **Section IV. Kripke's argument and the Rigidity Thesis**

I will not go into great detail in this paper about Kripke's larger critique of the descriptive picture of intentionality and content, as the issue is covered in another chapter in this volume (see Chapter 19, REFERENCE AND NECESSITY). In this section, I will first describe an argument, due essentially to Kripke, for the thesis that names are rigid designators. I will then conclude with an argument from rigidity against the descriptive picture of content.

One of the central contributions of NN lay in the argument that natural language proper names are rigid designators (where "rigid designator" is taken in the first, neutral sense of Section I). In what follows, we will go through this argument. More exactly, what we will motivate is the following thesis, which I will call RN, the Rigid Name thesis:

(RN) If N designates x, then N designates x rigidly.

Where "N" is replaceable by names of English language proper names. Throughout the argument for RN, it will be assumed that variables under assignments are rigid designators, and it will be argued from this assumption that natural language proper names are also rigid designators.<sup>31</sup>

According to the neutral characterization of rigidity, a designator  $d$  of an object  $x$  is rigid just in case, for all possible worlds  $w$ , if  $x$  exists in  $w$ , then  $D$  designates  $x$  in  $w$ , and if  $x$  does not exist in  $w$ , then  $D$  does not designate something different from  $x$  in  $w$ . There are thus three ways in which a designator  $D$  of an object  $x$  could fail to be rigid:

- (a) There could be a world in which  $x$  exists, but is not designated by  $D$ .
- (b) There could be a world in which  $x$  exists, but  $D$  designates something else.
- (c) There could be a world in which  $x$  does not exist, and  $D$  designates something other than  $x$ .

It will be argued that each of these possibilities is ruled out in the case in which  $D$  is a proper name.

Before we proceed with the argument, it is worth noting that no separate proof is required for (b). Given that proper names designate at most one thing in each world, any situation in which  $x$  exists, but  $D$  designates something else, will be a situation in which  $D$  does not designate  $x$ . That is, every (b) situation is an (a) situation. Thus, the demonstration that (a) is incompatible with  $D$  being a proper name will suffice to show that (b) is incompatible with  $D$  being a proper name.

So let us first argue that if " $a$ " is a proper name designating  $x$ , then, in any world in which  $x$  exists,  $x$  is designated by " $a$ ". Suppose not, that is, suppose " $a$ " designates  $x$ , and (a) is true. Then the following is the case:

$$(8) \exists x [x = a \ \& \ \diamond(x \text{ exists} \ \& \ x \neq a)]$$

But (8) seems false when " $a$ " is a proper name. Plugging an actual proper name in for " $a$ " in (8) should make this clear:

$$(9) \text{ There is someone who is Aristotle but he could exist without being identical with Aristotle.}$$

(9) is intuitively false. Thus, it seems that if  $N$  is a proper name designating  $x$ , then, if  $x$  exists in a world, then  $N$  designates it. So, we are done with case (a) (as well as (b)).

Now, let us turn to the argument that if " $a$ " is a proper name designating  $x$ , then, in any world in which  $x$  does not exist, " $a$ " does not designate something other than  $x$ . Suppose not, that is, suppose " $a$ " designates  $x$ , and (c) is true. Then the following is the case:

$$(10) \exists x [x = a \ \& \ \diamond(a \text{ exists and } a \neq x)]$$

But (10), like (8), seems false when "a" is a proper name. Substituting an actual proper name in for "a" in (10) should make this clear:

(11) There is someone who is Aristotle but Aristotle could exist without being him.

Like (9), (11) also seems intuitively false. Thus, it seems that if N is a proper name designating x, then, if x does not exist in a world, then N does not designate anything else. So we are done with case (c), and the argument for (RN).

The argument for (RN) exploits speaker's intuitions about the truth-value of instances of (8) and (10). In the case of normal proper names, it seems true that, when substituted for "a" in (8) and (10), a false sentence results. (RN) is thus an empirical claim about natural language. As such, it has been challenged. That is, some have maintained that there are true instances of (8) and (10). However, the proper names that are typically considered are somewhat elaborate, involving issues in metaphysics that are beyond the scope of this paper. The literature on "contingent identity statements" will thus not be discussed in what follows.<sup>32</sup>

In the above description of Kripke's argument, I have been using the expression "rigid designator" in the sense of a term which denotes its actual denotation in all possible worlds in which that denotation exists, and nothing else in other worlds. But there are also some considerations which some have felt mitigate in favor of the thesis that names are obstinately rigid designators. For instance, Kripke (p. 78, NN) gives as an as an example the sentence:

(12) Hitler might never have been born.

(12) is true. But (12) is true just in case the sentence, "Hitler was never born" is true when evaluated with respect to some possible world. If "Hitler" does not denote anything with respect to that world, then, unless one gives sentences containing non-denoting terms truth-values, it will be impossible to make the sentence "Hitler was never born" true in that world. But, if "Hitler" denotes Hitler in that world, then, despite the non-existence of Hitler in that world (or perhaps because of it), the sentence "Hitler was never born" can be true in that world.

This argument is, however, unimpressive. For it relies on the thesis that sentences containing non-denoting terms receive no truth-value. If one said that sentences containing non-denoting terms were false, then, analyzing "Hitler was never born" as the negation of "Hitler was born" in a world in which "Hitler" is non-denoting would yield the correct prediction.<sup>33</sup>

A more indirect argument exploiting the analogy between tense and modality might help. A tense-logical obstinately rigid designator is one which denotes the same thing at all times, regardless of whether or not that thing exists at the time of evaluation. That proper names should be treated as tense logical rigid designators is evidenced by the Montagovian example:

(14) John remembers Nixon.<sup>34</sup>

(14) can be true, as uttered in 1995, despite Nixon's non-existence at the time of utterance. If there is indeed a sharp analogy between tense and modality, then the fact that proper names seem to be tense logical obstinate rigid designators should provide some indirect evidence that they should be treated as modal logical obstinate rigid designators.<sup>35</sup>

In sum, it seems plausible that proper names are rigid designators. This would suggest that what fixes the referent of a proper name is not a non-rigid description, but rather something else. If so, then the descriptive account of intentionality would seem to be false.

This argument, as Kripke recognized, is however too swift. For it collapses once one makes Kripke's useful distinction between a description giving the content of a name, and the description merely fixing its referent. If the description fixes the referent of a name, then there is no commitment to saying that the name denotes an object in other possible worlds in virtue of that object satisfying the description. On this picture, the description fixes the referent, which is then the denotation of the proper name, even in worlds in which the referent does not satisfy the description. Thus, there is no direct argument from rigidity against the descriptive picture of intentionality.

The case differs, however, with the descriptive picture of content. For there does seem to be an argument from rigidity against the thesis that the content of a proper name is descriptive. For suppose that the content of the proper name "a" is descriptive. In particular, suppose that its content is given by the non-rigid description "DD". Then, the content of a sentence which results from replacing "N" by "DD" should stay unchanged, since "N" and "DD" have the same content. But, given that "N" is rigid and "DD" is not rigid, (15) and (16) do not have the same content, as (15) is true and (16) is false:

(15) N might not have been DD.

(16) N might not have been N.

Therefore, substitution of "DD" for "N" does not preserve truth-value, and hence also does not preserve content. Hence, "DD" and "N" do not, after all, have the same content.

Let us take a concrete example. Suppose that the name "Aristotle" has the same content as the description, "the last great philosopher of antiquity". Then, replacement of "Aristotle" by "the last great philosopher of antiquity" should preserve content. But:

(17) Aristotle might not have been the last great philosopher of antiquity.

(18) Aristotle might not have been Aristotle.

differ in content, since (17) has a true reading (for instance, there is a reading of (17) where it is true because Aristotle might have died as a child, in which case he never would have become a philosopher at all), and (18) has no true reading.<sup>36</sup> Thus, "Aristotle" and "the last great philosopher of antiquity" are not intersubstitutable, and hence do not have the same content.

It thus seems that Kripke's demonstration that proper names are rigid also shows that they do not have descriptive content. An obvious next step is the thesis, which Kripke attributes to John Stuart Mill, that the content of a proper name is simply its denotation. However, Kripke does not, from rigidity alone, conclude that Millianism is correct.<sup>37</sup> Rather, Kripke only commits himself to the following minimal thesis, which I shall henceforth call the *Rigidity Thesis*, or RT:

The rigidity of proper names demonstrates that utterances of sentences containing proper names, and utterances of sentences differing from those sentences only in containing non-rigid descriptions in place of the proper names, differ in content.<sup>38</sup>

If RT is correct, then the descriptive account of content would seem to be false. In the rest of this paper, I shall focus on various ways to defend the descriptive account of content. In the next section, I will discuss a version of the descriptive account of content which is compatible with RT. After that, I will discuss critiques of RT.

## **Section V. The 'actualized' description theory**

RT raises a *prima facie* difficulty for descriptive theories of content. Since the most plausible meaning-yielding descriptions seem to be non-rigid, RT seems to demonstrate that descriptive accounts of content are false. However, this appearance is misleading. RT does not demonstrate that all descriptive accounts of content are false. In particular, RT is only incompatible with one

of the two descriptive accounts of content distinguished in Section III. As we shall see in this section, though RT is indeed incompatible with the thesis that the content of proper names can be given by description in purely qualitative, general terms, it is not incompatible with the more traditional descriptive account of content, according to which the descriptions which give the content of proper names may contain indexical expressions.

RT is incompatible with the purely qualitative description theory of the content of proper names. For consider plausible meaning-yielding descriptions for an ordinary English proper name, such as "Aristotle". Since the meaning of an expression is what one knows in virtue of which one is competent with that expression, such descriptions must be the things that are known by those competent with the expression. Examples of such descriptions are, "the last great philosopher of antiquity", or "the teacher of Alexander". But these are non-rigid descriptions. RT is incompatible with such descriptions matching proper names in content.

On the other descriptive account of content considered in Section III, the descriptions which give the content of proper names may contain indexical expressions. Indexical expressions are expressions occurrences of which denote fixed parameters of a context. For instance, "I" denotes the speaker of a context, "now" the time of the context, and "here" the place of the context. But once one broadens one's perspective to include modal evaluation, it seems natural to add the word "actual" to the list. That is, once one is in the context of possible worlds semantics, "actual" indicates the world of the context.<sup>39</sup>

If so, that is, if "actual" is an indexical, it would be bizarre, on an account of content according to which the descriptions which give the content of proper names may contain indexical expressions, to disallow its appearance in the content-yielding descriptive expressions. But descriptions which contain the word "actual" are rigid. That is, a description such as "The actual F" rigidly denotes the object which is in fact F, even in worlds in which that object fails to be the unique F. Indeed, someone sympathetic with this account of the descriptive picture of content, as well as RT, would simply conclude that the descriptions which give the content of proper names must contain the indexical "actual". Furthermore, on this account of content, it would not even be a surprising fact that the relevant descriptions must be "actualized", since, on this account of content, the arguments for the thesis that meaning-yielding descriptions must contain indexical

expressions (for instance, Strawson's consideration of symmetrical universes) straightforwardly generalize to the modal case.

Now, if proper names are *de jure* rigid designators, then even this descriptive account of content would be false, for actualized descriptions do not "unmediatedly" designate. That is, a description such as "The actual teacher of Alexander" designates Aristotle via mediation of some concepts.<sup>40</sup> There are several responses to this point.

The first response to this point is that the argument for RN given in Section IV does *not* (and was not, by Kripke, intended to) demonstrate that proper names are *de jure* rigid, but merely that they are rigid. Secondly, given the metaphorical nature of the notion of mediation, it is difficult to see how one *could* argue for such a conclusion. Finally, there are examples of proper names which do seem (relatively uncontroversially) rigidly to designate "via mediation" what they designate.

The first of these points is obvious. The statement of RN does not mention the notion of *de jure* designation. Furthermore, nothing in the argument for it would fail if proper names were only *de facto* rigid.

To grasp the second point, consider the case of indexicals, which are rigid designators. Does the word "I" designate what it designates via mediation, or not? Kaplan (1989a) seems to think it does not.<sup>41</sup> But "I", whenever it is used, designates the agent of the context. Though there are difficulties in making precise the notion of "agethood" here, it is difficult to see how it could be that "I" designates "unmediately", given the linguistic rule that it is to designate the agent of the context. Perhaps there is a notion of mediation according to which "I" unmediatedly designates. But if so, it needs to be made more precise before an argument for such a conclusion can be evaluated.

Finally, there are examples of proper names which, if the notion of mediation is coherent, do seem to designate mediately what they designate. Consider, for example, the following example, due to Gareth Evans (1985b). Suppose we wish to discuss what the world would have been like if the zip had not been invented. In particular, we wish to discuss what would have happened if the inventor of the zip had died at birth. Not knowing who the inventor of the zip is, we introduce a name "Julius", by the following reference-fixing stipulation:

(S) Reference("Julius") = The inventor of the zip

and then go on to theorize about what would have happened had Julius died at birth, and had failed to invent the zip.

Evans' intuition is that "Julius" is a rigid designator. That is, according to Evans, (19) has no true reading, but (20) does:

(19) Julius might not have been Julius.

(20) Julius might not have been the inventor of the zip.

If so, then "Julius" is an example of a proper name which designates what it does via mediation, and is hence not de jure rigid.<sup>42</sup>

Given Evans' example, it seems implausible to maintain that it is a feature of the semantic category of proper names that they are de jure rigid. Of course, on the descriptivist account, *no* proper name is de jure rigid, which, given the slight oddity of "Julius" type names, may seem worrisome. Nonetheless, what is important to note for our purposes is that there is no argument from rigidity alone against a traditional descriptive account of the content of proper names. Issues of rigidity are simply independent of the question of whether names have descriptive content.<sup>43</sup>

None of this would be news to Kripke. Kripke never argued that his modal considerations refuted every version of the descriptive account of content. Michael Dummett has, however, leveled more direct challenges to Kripke's conclusions.<sup>44</sup> Though Dummett agrees that Kripke has shown an important difference between English proper names and descriptions, he has challenged Kripke's contention that the difference in question always makes a difference to what is said. In particular, according to Dummett, the rigidity of proper names does not affect the content of modally "simple" sentences -- that is, sentences not containing modal terms. In other words, Dummett challenges the truth of RT.

Dummett's early views on rigidity can be separated into two doctrines. The first, which is a negative doctrine, is that rigidity does not make a difference to the content of simple sentences. The second, which is a positive doctrine, is that the phenomena which the notion of rigidity is intended to capture can be accounted for by a stipulation that terms which Kripke would classify as rigid take obligatory wide scope with respect to modal operators.

In the next section, I will discuss Dummett's positive doctrine, as well as Kripke's decisive objection to it. In the final section, I will turn to a more promising line of argument against RT along essentially Dummettian lines.

## Section VI. Names and wide-scope

Consider again (17) and (18), which were used to show that "Aristotle" and "the last great philosopher of antiquity" have different contents. As we saw in Section IV, (18) has no true reading, whereas (17) does. If one assumes that "Aristotle" is rigid, whereas "the last great philosopher of antiquity" is not, then one can account for this contrast between the two expressions.

The point of Dummett's positive doctrine is that one can account for the distinction between (17) and (18) without supposing a difference in semantic value between "Aristotle" and "the last great philosopher of antiquity". That is, one can account for the distinction without supposing that "Aristotle" is rigid, whereas "the last great philosopher of antiquity" is not. According to Dummett, all that the distinction between (17) and (18) demonstrates is that there is a *syntactic* constraint on terms such as "Aristotle", which forces them to take wide scope with respect to modal operators.

Here is how Dummett's positive doctrine accounts for the distinction between (17) and (18). (18), and (the true reading of) (17), properly regimented (and abstracting from irrelevant detail), come out, on Dummett's view, as:

(17') For some  $x$  such that Aristotle =  $x$  [ $\diamond x \neq$  the last great philosopher of antiquity]

(18') For some  $x, y$  such that Aristotle =  $x$  and Aristotle =  $y$  [ $\diamond x \neq y$ ]

(17') is true because there are possible situations in which the actual denotation of 'Aristotle' died as a child, whereas, given the rigidity of variables, (18') is false. Thus, Dummett's positive doctrine accounts for the distinction between (17) and (18) without postulating a semantic difference between proper names and definite descriptions. Indeed, if Dummett's positive

doctrine is correct, proper names can be identified with definite descriptions which take obligatory wide scope with respect to modal operators.

On Kripke's account, the difference between (17) and (18) is attributed to a difference in the semantic values of the expressions "Aristotle" and "the last great philosopher of antiquity". (18) has no true reading because "Aristotle" is rigid; that is, it is associated with a (perhaps partial) constant function from worlds to objects, whereas (17) does have a true reading, since "the last great philosopher of antiquity" is not rigid; that is, it is associated with a non-constant function from possible worlds to objects. On Dummett's account, no difference in semantic value is required in order to explain the distinction between (17) and (18). It is simply a syntactic feature of proper names that they take wide scope with respect to modal operators, but in all semantic respects, proper names are like descriptions.

However, Dummett's positive account is problematic, as the following argument by Kripke demonstrates. Suppose "t" is an expression which Kripke would classify as rigid, and "t'" is a non-rigid description which, according to Dummett, has the same content as "t". Consider now the following discourse:

(21) t is t. That's necessary.

(22) t is t'. That's not necessary.

Both (21) and (22) are true, given that "t" is an expression which Kripke would classify as rigid and "t'" is not rigid. But on Dummett's account, it is difficult to see how this could be so.

The central issue in interpreting this discourse is what the content of the occurrence of 'that' is. There are two possibilities. First of all, the occurrences of "that" might refer to some 'value' of the preceding sentences, either the proposition it expresses ('what it says'), or some other semantic feature. The second possibility is that the occurrence of "that" refers to the preceding sentences themselves, i.e. is replaceable by a quote-name of the preceding sentences. In each case, it is difficult to see how Dummett's account could make both (21) and (22) true.

Suppose the first of these possibilities to be the case. That is, suppose that the occurrence of "that" in (21) denotes some value of the preceding sentence "t is t". Then, since both discourses are true, by Leibniz's Law, the value denoted by the occurrence of "that" in (21) must be different from the value denoted by the occurrence of "that" in (22), since the values have different

properties (one is necessary, while the other is not). But Dummett's positive doctrine gives us no explanation of this fact. According to Dummett, one can explain rigidity facts by a syntactic stipulation that certain terms -- those which Kripke classifies as rigid -- take obligatory wide scope with respect to modal operators. But no such operators occur in the initial sentences of (21) and (22). Therefore, Dummett's positive account predicts that there should be no differences in semantic value between these two sentences. But if the two occurrences of "that" denote some semantic value of the preceding sentences, then the two sentences are associated with different semantic values, *contra* the predictions of Dummett's positive account.

So let us suppose, then, the second of the above possibilities to be the case, that is, suppose that the occurrence of "that" in (21) denotes the sentence, "t is t". Similarly, suppose that the occurrence of "that" in (22) denotes the sentence, "t is t'". In this case, we could replace the second sentences in (21) and (22) by:

(23) "t is t" is necessary.

(24) "t is t'" is not necessary.

(23) and (24) are true. But again, on Dummett's positive account, it is not possible to see how this could be the case. For there is no way for any of the occurrences of the term "t" to take wide scope with respect to modal operators, for they all occur within quotation marks.<sup>45</sup>

What Kripke's argument seems to show is that no syntactic account of the distinction between proper names and definite descriptions is possible. Thus, the difference between proper names and definite descriptions must be attributed to a difference in the semantic values they receive. Indeed, one might use this argument of Kripke's to establish RT. For even in the case of unmodalized sentences, replacing a rigid designator by a non-rigid designator will typically result in a sentence which differs in truth-value in some possible world. One can exploit this to provide an argument for RT.

To see this, consider the following discourses, both true:

(25) Aristotle was not a philosopher. That would be true in a situation in which Aristotle died as a baby.

(26) The last great philosopher of antiquity was not a philosopher. That would not be true in a situation in which Aristotle died as a baby.

Using the same reasoning as in Kripke's argument, it follows that the sentences "Aristotle was not a philosopher" and "The last great philosopher of antiquity was not a philosopher" must have different semantic values. For one value, one evaluated with respect to a situation in which Aristotle died as a baby, is true, while the other, when evaluated with respect to that same situation, is not true. Thus, since the values have different properties --one is true with respect to the world in question, while the other is not true-- by Leibniz's Law, they must be different.

What this argument of Kripke's establishes is that whatever it is that is evaluated with respect to different metaphysically possible worlds in the case of "Aristotle was not a philosopher" differs from whatever it is that is evaluated with respect to different metaphysically possible worlds in the case of "The last great philosopher of antiquity was not a philosopher".

Furthermore, it is clear that similar demonstrations can be given for other cases in which a non-rigid description might seem to have the same content as a rigid designator.

But RT might still seem worrisome. According to RT, sentences containing definite descriptions have different contents from the sentences which result from replacing those definite descriptions by any rigid expressions, even when the sentences are unmodalized. But there are *prima facie* counterexamples to this. For example, the sentences:

(27) The president of the USA came to dinner.

(28) The actual president of the USA came to dinner.

do not, on the face of it, seem to say different things; rather, the difference between utterances of (27) and (28) seems to lie in their pragmatic force. Yet "the president of the USA" is non-rigid, and "the actual president of the USA" is rigid.

Furthermore, (27) and (28) pose a problem for Kripke's argument in this section. For (27) and (28) differ in truth-value with respect to some metaphysically possible worlds. (27) is true in a world in which George Bush came to dinner, Bill Clinton did not, and George Bush won the 1992 election. (28) is not true with respect to such a situation. But it seems overhasty to conclude from this that utterances of (27) and (28) say different things.

Examples such as (27) and (28) might lead one to the view that the semantic differences between rigid and non-rigid expressions do not imply that they must differ in content, as well as to the thesis that the differences in modal semantic value --that is, whatever is evaluated in other possible worlds-- do not necessarily lead to a difference in content. Yet these reactions presuppose a distinction between semantic value and content which requires greater explication before it can be developed into a serious response to RT. It is to this task which we now turn.

## **Section VII. Assertoric Content and Ingredient Sense**

In this section, I will introduce and motivate Dummett's distinction between assertoric content and ingredient sense. I will then use this distinction in briefly suggesting a line of critique against RT.

The *assertoric content* of an utterance of a sentence is what is said by that utterance. The assertoric content of an utterance of a sentence also is the object of belief, doubt, and other propositional attitudes. Assertoric contents are the fundamental bearers of truth-value. They are not true or false relative to a time or a place. Mary's belief that the sun is shining is not true at some times, false at others. What Mary says when she says that the sun is shining is not true in America, false in Australia. It is true or false, as Frege says, *tertium non datur*.

The *ingredient sense* of a sentence is what that sentence contributes to more complex sentences of which it is a part. The ingredient sense of a sentence is thus that sentence's compositional semantic value. It is the semantic value we must assign to a sentence in order to predict correctly the conditions under which more complex constructions in which it occurs are true. As Dummett notes, ingredient sense is what formal semantic theories are concerned to explain.<sup>46</sup>

Once one makes the distinction between ingredient sense and assertoric content, the possibility arises that the ingredient sense of a sentence might differ from its assertoric content. There are several ways in which this possibility might be realized. First of all, it could be the case that sentences which have the same assertoric content nonetheless contribute different things to more complex sentences containing them.<sup>47</sup> That is, it could be the case that sentences with the same assertoric contents have different ingredient senses. Secondly, it could be the case that the ingredient sense of a sentence cannot serve as its assertoric content, because it is not the sort of

object which is fit to be believed or asserted. As we shall soon see, both of these situations in fact obtain.

Consider first the former of these possibilities, viz. that two sentences which have the same assertoric content differ in ingredient sense. Each of (30)-(32) has the same assertoric content as (29):

- (29) The president is Bill Clinton.
- (30) The current president is Bill Clinton.
- (31) The president here is Bill Clinton.
- (32) The actual president is Bill Clinton.

The difference between each of (30)-(32) and (29) is not truth-conditional, but pragmatic. In each of (30)-(32), a presupposition is present which is not present in (29).

But these presuppositions are cancelable. The sentences can be true, even if the presuppositions fail. Indeed, in any context *c*, an utterance of each of (30)-(32) is true in *c* just in case an utterance of (29) is true in *c*. On a natural construal of the expression "truth-condition", each of (30)-(32) has the same truth-conditions as (29), and hence have the same assertoric content as (29).

However, as the following sentence pairs demonstrate, the two sentences in each of the sentence pairs have different *ingredient senses*:

- (33) It will always be the case that the current president is Bill Clinton.
- (34) It will always be the case that the president is Bill Clinton.
  
- (35) Everywhere, it is the case that the president here is Bill Clinton.
- (36) Everywhere, it is the case that the president is Bill Clinton.
  
- (37) Necessarily, it is the case that the actual president is Bill Clinton.
- (38) Necessarily, it is the case that the president is Bill Clinton.

In each of these sentence pairs, the first sentence is true, but the second false. Thus, each of (30)-(32) contributes different things to more complex sentences of which they are a part than (29).

But then, given that utterances of them have the same assertoric content as utterances of (29), we have shown that utterances of two sentences can have the same assertoric content, while nonetheless differing in ingredient sense.

Consider now the second of these possibilities, viz. that ingredient senses are not the sort of objects which can be identified with assertoric contents, things believed and asserted. As the following examples show (and as Lewis (1981) points out) this too is the case:

(39) It will be the case that the sun is shining.

(40) Somewhere, the sun is shining.

(41) In the future, there might be a miracle somewhere.

In each case, what the embedded sentence contributes to the interpretation of the whole sentence is not something which could plausibly be identified with an assertoric content, something fit to be believed or asserted. In the case of (39), the embedded sentence "the sun is shining" must express a function from times to truth-values. In the case of (40), the embedded sentence must express a function from places to truth-values. Finally, in the case of (41), the embedded sentence must express a function from world, time, and place triples to truth-values.

But, as we have seen, functions from times or places to truth-values are not fit to be things believed or asserted. Mary's belief that the sun is shining does not vary in truth-value from one time to another, or from one place to another. It is true or false, *tertium non datur*. Therefore, ingredient senses are not fit to be assertoric contents.<sup>48</sup>

Let us now sum up our conclusions so far in this section. First, we have seen that sentences can have the same assertoric content, while differing in ingredient sense. Secondly, we have seen that ingredient senses are not the sort of objects which can be regarded as assertoric contents.

Keeping these facts in mind, let us now turn to how these facts bear on RT.

In the original argument for RT, we inferred, from the fact that "Aristotle is Aristotle" and "Aristotle is the last great philosopher of antiquity" embed differently in modal contexts (that is, (17) and (18) differ in truth-value), that the two sentences have different contents, and hence that "Aristotle" and "the last great philosopher of antiquity" have different contents. Yet, once the assertoric content/ingredient sense distinction is made, it is clear that this sort of inference is invalid. From (17) and (18), it is only legitimate to infer that "Aristotle is Aristotle" and

"Aristotle is the last great philosopher of antiquity" have differing ingredient senses. Similarly, it is only legitimate to infer from (17) and (18) that "Aristotle" and "the last great philosopher of antiquity" have different semantic values. But as we have seen, this does not demonstrate that replacement of one with the other typically yields a sentence with a different assertoric content. That is, such facts as (17) and (18) do not demonstrate the truth of RT.

But what about the Kripkean argument for RT given in the last section? In the case of (21) and (22), and (25) and (26), the initial sentences were not embedded in modal contexts. Nonetheless, the Kripkean argument established that the sentence containing the rigid designator, and the sentence resulting from it by replacing the rigid designator by a non-rigid designator, corresponded to different values. However, the Kripkean argument only demonstrates RT if the values in question are assertoric contents, or propositions, rather than ingredient senses. For, as we have seen, it is perfectly possible for two sentences to differ in ingredient sense, yet for utterances of them to have the same assertoric content.

The fundamental question in evaluating the Kripkean argument is what the denotations of the occurrences of 'that' are in the relevant discourses. If such occurrences of 'that' denote the assertoric content of the preceding sentences, then the argument does indeed demonstrate RT. If, however, such occurrences of 'that' denote the ingredient senses of the preceding sentences, then the argument only demonstrates that the preceding sentences differ in ingredient sense, a fact perfectly consistent with their coinciding in assertoric content.

Now, there is no question that such occurrences of 'that' can denote the assertoric content of the occurrences of the preceding sentences. This is precisely what the denotation of 'that' is in such contexts as:

(42) The sun is shining. That's asserted by John.

(43) The sun is shining. That's believed by Mary.

Our question is thus: do all such uses of 'that' denote the assertoric contents of the occurrences of the preceding sentences, or do they sometimes denote the ingredient senses of the preceding sentences?

That the latter is the case can be seen from the following two examples:

(44) The sun is shining. That will be true, but it isn't true now.

(45) The sun is shining. That's true somewhere, but it isn't true here.

In order for (44) to be true, the occurrence of 'that' must denote a function from times to truth-values. Similarly, in order for (45) to be true, the occurrence of 'that' must denote a function from places to truth-values. But, as we have seen, such entities are certainly not assertoric contents, things believed and expressed. Such examples hence show that some such occurrences of the word 'that' denote the ingredient senses, rather than the assertoric contents, of the preceding sentences.<sup>49</sup>

The fact that the word 'that' sometimes denotes the ingredient sense, rather than the assertoric content, of the preceding sentence allows the Dummettian to respond to the Kripkean argument as follows. What she would maintain is that the occurrences of 'that' in (21), (22), (25), and (26) denote, not the assertoric content of the preceding sentences, as in the occurrences of 'that' in (42) and (43), but rather the ingredient sense. Since a difference in ingredient sense does not imply a difference in assertoric content, the Kripkean argument fails to demonstrate RT.

For the Dummettian, then, the Kripkean argument fares about as well as the following argument for the thesis that utterances of (29) and (30) always have different assertoric contents:

(46) The current president is Bill Clinton. That will always be true.

(47) The president is Bill Clinton. That won't always be true.

It would be overhasty to conclude, from this argument, that utterances of (29) and (30) must have different assertoric contents.<sup>50</sup> Similarly, according to the Dummettian, it would be overhasty to conclude, from (21) and (22) alone, that "t=t" and "t=t'" have different assertoric contents.

What a friend of RT must show is some disanalogy between the argument from (21) and (22) to the conclusion that "t is t" and "t is t'" do not have the same assertoric content, and the argument from (46) and (47) to the conclusion that (29) and (30) have different assertoric contents. There are two ways in which she could proceed. First, she could argue that in modal contexts, the relevant uses of 'that' do denote the assertoric contents of the preceding sentences. Alternatively, she could argue that, unlike the case of (46) and (47), a difference in the particular ingredient sense, or semantic value, denoted by these occurrences entails a difference in assertoric content.

According to the opponent of RT, the object of modal evaluation, like the object of temporal evaluation, is not a proposition, or assertoric content. To make her position clear, she must first provide some clear account of the assertoric content/ingredient sense distinction. Then, she must provide an account of assertoric content which distinguishes it in relevant ways from the object of modal evaluation.<sup>51</sup>

## **Conclusion**

As we have seen, given the possibility of actualized descriptions, there is no argument from rigid designation against the description theory of names. The more interesting question, however, is the status of RT. What I have tried (ever so briefly) to motivate is the view that RT is not as innocent as many philosophers believe. The classic Kripkean argument in its favor fails. That is not to say that RT is false. For instance, it may be that the best theory of content entails it.<sup>52</sup> On the other hand, there may be substantive empirical or methodological objections against it. But I am afraid that these are issues which we must leave for future Philosophy of Language to decide.<sup>53</sup>

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## Notes

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1. This characterization of rigidity is from a letter from Kripke to Kaplan, cited on p. 569 of Kaplan's "Afterthoughts" (in Kaplan, [1989]).

2. Ibid.

3. Henceforth 'NN'.

4. There is another notion of rigidity occasionally suggested in the literature according to which a term is rigid just in case it refers to the same object in all possible worlds in which it refers at all. But this is consistent with the actual denotation of a rigid designator existing in some possible world, yet unnamed by that designator. This possibility is ruled out by Kripke's general characterization of rigidity. In what follows, "rigidity" will instead be used in accordance with Kripke's general characterization.

5. Besides the issues that will be discussed in later sections, there are other issues in philosophical logic which may push one to prefer one or the other characterization of rigidity. For instance, if one defines necessity as truth in every world, then, to capture the intuitive necessity of "Bill Clinton = Bill Clinton", one might wish to allow "Bill Clinton" to denote Bill Clinton with respect to every possible world (in which case one would prefer the characterization of rigidity as obstinate rigidity). Alternatively, one could exploit another notion of necessity, viz. non-falsity in every world. This would allow "Bill Clinton = Bill Clinton" to lack a truth-value in some possible worlds without thereby becoming contingent, hence removing the need to treat

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designators as obstinately rigid to preserve the necessity of "Bill Clinton = Bill Clinton". Similar issues arise with respect to the characterization of validity. However, here, too, it is difficult to see any substantive issues. As Kripke (1963, p. 66) writes, "For the purposes of modal logic we hold that different answers to [these questions] represent alternative *conventions*. All are tenable."

6. See p. 21, ftn. 21 of NN.

7. However, eliminating the metaphor of mediation in the characterization of this distinction is no easy task. Furthermore, as will become clear in later sections, it is unclear how the distinction between de jure and de facto rigid designation generalizes to other expressions.

8. See p. 21, ftn. 21 of NN, Kaplan (1989a), and, most explicitly, pp. 469-571 of Kaplan (1989b).

9. Because of space considerations, I will not discuss the latter's use of substitutional quantification in explicating quantification into modal context.

10. Quine (1943). For discussions of Quine's objections, see Fine (1989) and Kaplan (1986). See also Richard (1987). There is a substantial body of contemporary literature on this topic.

11. So perhaps it is not really correct to call these two different objections.

12. I am here, as below, *not* using "objectual" in the sense of the distinction between objectual and *substitutional* quantification, but rather in the sense of the soon to be explicated distinction between quantification over individuals vs. quantification over concepts.

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13. Here, "a" and "b" and "φ" are being used as schematic letters replaceable by metalinguistic names for object language expressions, and "" is being used for quasi-quotation. I will use "" as normal quotation and quasi-quotation, leaving it to context to disambiguate. In general, I will be lax about use/mention.

14. Kaplan (1986) calls this "Quine's Theorem". See pp. 231-238 for a reconstruction of Quine's 1943 arguments, and Kaplan's critique of it. See also Fine (1989).

15. It is illegitimate *simpliciter* to quantify into contexts in which the quotation is ordinary English quotation. However, Kaplan (1986) introduces a new quotation device, which he called *arc quotes*, and showed how to make sense of quantification into them (see Section VIII ff.).

16. Henceforth 'MN'.

17. Furthermore, on the conceptual interpretation of QML, there are ways to rescue substitution of co-extensional expressions in extensional contexts, and even to rescue a quantified version of extensional substitution of the form:

$$(*) \forall x \forall y (x = y \rightarrow (\varphi \leftrightarrow \psi))$$

(where  $\varphi$  differs from  $\psi$  in containing free occurrences of 'x' where  $\psi$  contains free occurrences of 'y', and  $\varphi$  and  $\psi$  are extensional). According to Carnap, for example, both terms and variables are systematically ambiguous. To each term, there corresponds both an extension and an intension (something which yields, at every possible world, an extension). In addition, to each variable, there corresponds both *value extensions* and *value intensions*. The value intensions of a variable

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are the set of intensions of expressions which are admissible substitution instances of that variable, and the value extensions are the set of extensions of expressions which are admissible substitution instances of that variable [see Section 10, his MN]. Since in extensional contexts, all that is relevant are the value-extensions of variables and the extensions of terms, once the notion of "extensional context" has been appropriately inductively defined (say, as a wff of non-modal first or higher order calculus), both the fully schematic version of extensional substitution, as well as the version of substitution containing quantifiers, can be preserved. This is Carnap's *Method of Extension and Intension* (see Chapter I of MN). Church avoids having to give expressions and variable a double interpretation, choosing instead to follow Frege in relativizing their interpretations to contexts. For a discussion of these matters, see Fine (1989, pp. 267 ff). For an old attack on the *metaphysical* coherence of the conceptual interpretation, see Quine (1947).

18. For simplicity's sake, I am speaking here only of non-vacuous existential quantifications into modal formulas with one free variable (so it is appropriate to speak of truth and falsity, rather than satisfaction). I will occasionally make such simplifying assumptions without comment.

19. Of course, such a primitive relational sense of necessity is analogous to Quine's primitive relational sense of propositional attitude verbs, introduced in his (1956). Quine himself later noticed (1977) that his reconstruction of quantification into propositional attitude contexts could be used in this way to defend the coherence of quantification into modal contexts.

20. Here, "exists" is a primitive predicate which is true of an object with respect to a possible

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situation just in case that object is in the domain of the possible situation.

21. Missing this point, Quine (1977, p. 8) asserted that the notion of rigidity, by itself, presupposes the notion of an essential property: "A rigid designator differs from others in that it picks out its object by essential traits". A careful reading of Kripke's discussions of transworld identification in NN (e.g., p. 44) might have dispelled him of this belief.

22. This is for non-complex terms. If the language contains rigid complex terms --rigid descriptions-- the interpretation of terms which are not variables may, of course, depend upon an assignment function.

23. For instance, even the free-logical rule of universal instantiation can fail for languages with non-rigid terms (c.f. Garson, 1984, pp. 262-263). Furthermore, the introduction of non-rigid terms complicates completeness proofs for systems of QML, since standard completeness proofs rely on substitution facts (c.f. Garson, 1984, pp. 287-289).

24. In retrospect, the latter option seems only to be motivated if one accepts Quine's rather curious idolatry of classical quantification theory. There are many ways of restricting classical substitution to account for non-rigid terms, either by restricting substitution to atomic formulas, or by reformulating quantification theory in terms of complex predicates and restricting substitution to complex predications (for this latter option, see Robert Stalnaker, 1977 and 1995). See also, for a development of the appropriate proof theory for a language with complex predicates and non-rigid designators, section 3 of Fitting's (1993), as well as his (1991).

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25. For instance, Arthur Smullyan (1947, 1948) argued, against Quine's logico-semantical objection to QML, that once one recognizes that descriptions are to be treated on Russellian lines, rather than as terms, then Quine's objection fails. Smullyan is thus the first person explicitly to suggest that natural language terms are such that classical substitution holds for them. However, since Smullyan wrote years before Kripke's development of the semantics of QML, he cannot be credited with the discovery that natural language names are rigid, since he did not possess the resources to define the notion of rigidity. Furthermore, he provided no argument to the effect that natural language terms are rigid. A similar point holds for Barcan Marcus. Though she derived (quantified) versions of the necessity of identity in her (1947) [see esp. theorem 2.32], she did not, at that time, have the notion of rigidity, since she had neither an explicit semantics in mind, nor any sort of philosophical or semantic argument about natural language. In her (1961), Marcus does suggest that natural language names are mere "tags" for objects, but she neither provides the sort of arguments required for the establishment of this thesis, nor possesses the semantical apparatus necessary to characterize the notion of rigidity. Nonetheless, the work of Smullyan, Marcus, and also Frederick Fitch, certainly provided much of the necessary impetus for the later development of these notions (for an excellent discussion of their role in the history of the notion of rigidity, see Scott Soames, (1995)).

26. For instance, for Strawson, descriptive identification is based upon demonstrative identification: "[The supposition that where the particular to be identified cannot be directly located, its identification must rest ultimately on description in general terms] is false. For even though the particular in question cannot itself be demonstratively identified, it may be identified

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by a description which relates it uniquely to another particular which can be demonstratively identified" (1959, p. 21). Nonetheless, for Strawson's anti-skeptical arguments to succeed, he must be assuming that successful reference requires uniquely identifying knowledge, given by description. Dummett directly challenges the thesis that for Frege, the sense of each proper name can be given by a description (see, to cite one example the Appendix to Chapter 5 of his 1981a). For Frege, his belief that a change in reference entails a change in sense demonstrates that he did not ascribe to the "description in general terms alone" account.

27. The case is more difficult in the case of "I" and "here", for they seem to be subject to, in Shoemaker's (1968) happy phrase, *immunity to error through misidentification* (Shoemaker, in this article, is only concerned with "I"). See Evans (1982), Chapter 6 and 7, for an attempt to fit an account of these words into a model more closely paralleling perceptual demonstratives than seems, *prima facie*, to be possible, and see Lucy O'Brian (1995) for a recent critique of Evans' account.

28. Though see footnote 58 of NN for a challenge to this paragraph.

29. This distinction between different descriptive pictures of intentionality is relevant for Kripke's epistemological critique of descriptive theories of intentionality, though not his argument from rigidity.

30. Of course, to bring this fully in line with the description theory, we would also have to analyze the place name, "the United States".

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31. Furthermore, I will use "possibilist" quantifiers (that is, quantifiers whose domains are not restricted to worlds, but rather range over all actual and possible objects) as well as a primitive existence predicate ("x exists") which is true of an object at a world just in case that object is in the domain of that world (i.e. exists in that world).

32. See, for example, Allan Gibbard's discussion of "Goliath" and "Lumpl" in his (1975).

33. To rescue the necessity of identity, one would be forced to reformulate some clause in the semantics. One method is to replace the identity axiom schema by its free-logical counterpart. Alternatively, one could redefine the necessity operator (as in, for instance, Van Benthem (1983) Chapt. XII, pp. 136-137) to restrict evaluation of the embedded sentence to worlds at which the denotations of constants in the sentence, and values of the free variables of the sentence, exist.

34. See Montague (1974, p. 126). This example, too, is not fully convincing, since "remembers" is intensional. A slightly better example is "Aristotle is currently the most read philosopher".

35. cf. Salmon (1982, pp. 37-39) for a longer discussion. Evans (1985a) has challenged the analogy between tense and modality.

36. That is, (19) has no true reading where the possibility in question is *metaphysical* possibility. Throughout, all occurrences of modal expressions should be read as expressing metaphysical possibility.

37. Kripke's argument that the content of a proper name is only its denotation depends more on the epistemological arguments he gives in Lecture II of NN. We will not discuss these arguments

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here.

38. This is only a rough statement of the actual thesis. For one may have a coarse-grained account of content, where, say, logical contradictions say the same thing. In this case, utterances of sentences which express logical contradictions, such as "John is tall and it is not the case that John is tall", would say the same thing as thing as utterances of sentences with the name replaced by a non-rigid designator. But this is obviously not an objection to Kripke, for if such an account of content is endorsed, then the statement of the rigidity thesis would have to be modified to capture more adequately Kripke's intention.

39. Formally, the logic of the sentential operator, "actually", which is the modal logic analogue of the temporal indexical "now", has been much investigated. Classic papers in this area include Segerberg (1973), Davies and Humberstone (1980), and Hodes (1984a, 1984b). For recent books on the subject, see Graeme Forbes' excellent (1989), which uses rigidifying operators such as "actually" to dispense with quantification over (and hence ontological commitment to) possible worlds, as well as Max Cresswell (1990) for an argument against a Forbes-like position.

40. However, if one characterizes the notion of de jure rigidity in terms of an expression being rigid "in virtue of the semantical rules of the language", then, given that the semantical rules of the language state that "actual" is a rigidifying operator, actualized descriptions *will* count as de jure rigid designators (c.f. Almog (1986, pp. 223 ff.)). If de jure rigidity is so characterized, then the de jure/de facto distinction is simply irrelevant to the question of whether names have descriptive content.

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41. However, Kaplan does add qualifications (p. 497, 1989a).

42. See also, in this context, Kripke's discussion of "Cicero" and "Jack the Ripper" on p. 79 of NN. For an interesting challenge to the whole idea of a descriptive name, see Bostock (1988).

43. To make issues of rigidity relevant for arguments against descriptive accounts of content, one needs to argue that proper names are, in the sense of Evans [1985b], *deeply rigid designators*, where an expression *e* counts as a deeply rigid designator of an object *o* just in case, for every possible world *w*, *e* refers to *o* when considered as *uttered in w*. Actualized descriptions are thus not deeply rigid designators. There are few attempts to address the question of whether names are deeply rigid (though see Deutsch (1989)). Thanks to Sanford Shieh for discussion here.

44. See, e.g., the Appendix to Chapter 5 of his (1981a), Appendix 3 of his (1981b), and Chapter 2 of his (1991). The arguments outlined in the final two sections have their sources in these passages.

45. There is a third possibility, that is, that the occurrences of "that" are unstructured names of the preceding sentence-tokens. But in this case, it is even more difficult to see how "t" could take wide-scope with respect to the modal operator in the next sentence. The only way I can see to defend Dummett's positive account is by using Kaplan's (1986) device of "arc-quotes", maintaining that the "that" is replaceable by arc-quote names of the preceding sentences, which do license quantifying in.

46. See Dummett (1991), p. 48. By "formal semantic theory", I mean the project Robert Stalnaker

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calls "descriptive semantics" (see Chapter 19, REFERENCE AND NECESSITY).

47. I have characterized assertoric content as applying primarily to utterances, rather than to sentence types. But we can, from this characterization, obtain an equivalence relation of sameness of assertoric content which holds between sentence types. Say that two sentence types, S and S', have the same assertoric content, just in case, for every normal context c, utterances of S and S' in that context have the same assertoric content (for the notion of "normal context", see Section I of my (1996)).

48. This is precisely Lewis' central conclusion in his (1981), albeit phrased in terms of Dummett's distinction between assertoric content and ingredient sense, rather than Lewis' vocabulary of "proposition" versus "semantic value" (see p. 95 of Lewis (1981)). These facts have also been recognized (though used for different purposes) by Richard (1981, 1982) and Salmon (1986, Chapter 2).

49. Ordinary language examples can, however, occasionally mislead here. For instance, the sentence "John believes something that was true yesterday, and false today" is perfectly acceptable. Yet the existence of such examples should not be taken as undermining the philosophical position that the objects of belief must be true or false absolutely. Such examples can be dealt with, as in Forbes (1989, p. 163), by interpreting the quantification substitutionally.

50. Similarly:

- (a) The sun is shining. That's true now, but it won't be true tomorrow.
- (b) The sun is shining. That's true here, but it's not true in Scotland.

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51. According to Part II of Forbes' (1989), whereas assertoric contents are to be identified with Fregean thoughts, states of affairs are the objects of modal evaluation. My own view (Stanley, 1996) is that modal semantic value comes from the speech act of supposition, rather than assertion.

52. The classical 'Russellian proposition' view of content (e.g. Kaplan (1989), Salmon (1986), Soames (1987)) is one view which entails RT.

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