Three-Dimensional Semantics

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Abstract

How can identity sentences involving distinct names be informative? Any theory of names facing the *problem of informativity* will need to appeal to descriptions. The crucial question is: *at which level* do descriptions play a role? Kripke showed that descriptions neither constitute nor fix the semantic contents of names. At the same time, his Millian views imply the problematic existence of *modal illusions*: some necessary truths are knowable only aposteriori *even though* there is no possible world in which they don't hold. I sketch a new, metasemantic strategy that purports to avoid modal illusions within a referentialist framework: the relevant descriptions describe not extensions (descriptivism), not intensions (two-dimensionalism), but names themselves (three-dimensionalism).

1 Introduction

The primary, Millian intuition about names is that they refer to their bearer directly, without the mediation of descriptive conditions. But, as Frege highlighted, if this intuition is taken seriously, it seems we cannot explain the potential informativity of identity sentences involving distinct names: how can a competent speaker fail to know the truth (or falsity) of a sentence like "Hesperus is Phosphorus"?

Frege had initially proposed, in his *Begriffschrift*, that what such sentences convey is a piece of metalinguistic information about the names themselves. But later, in *Sinn Und Bedeutung*, he retracted from his early view, deeming that, after all, what people learnt when they discovered that Hesperus is Phosphorus was a substantive fact of astronomy, and not a metalinguistic fact about the arbitrary signs used to describe that substantive fact. And he introduced senses and *descriptivism:*

Descriptivism: Descriptions (senses) *constitute* the semantic content of names.

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Kripke, however, refuted descriptivism and rehabilitated referentialism, the view that a name contributes only an individual to truth-conditions. But his Millian views provide no solution to the problem of informativity. This problem, taken within a framework that combines referentialism with a possible worlds semantics, becomes the problem of *modal illusions*: some necessary truths are knowable only a posteriori *even though* there is no possible world in which they don't hold. So that the next challenge is this: offer a referentialist theory of names that avoids modal illusions. This is what advocates of *two-dimensionalism* (henceforth, *2-D*) have been aiming to do:

Two-dimensionalism: Descriptions *fix* the semantic content of names.

However, as Byrne and Pryor (2006) emphasize, this strategy too is incompatible with Kripke's insights. Kripke showed not only descriptions do not constitute the contents of names, but also that they do not fix the contents of names. His central message is that no descriptive conditions, *whatever their role*, are *linguistically* associated with names. So that both descriptivist and two-dimensionalist approaches fail.

I want to suggest a third route, one that grants Kripke's Millianism and puts the descriptions responsible for cognitive significance into the *metasemantics* and *epistemology of language* stories. Whereas both descriptivists and two-dimensionalists suppose that descriptions describe extralinguisic *objects*, I will argue that descriptions describe *words*:

Three-dimensionalism: Descriptions *fix* public words (in individual minds).

On this view, which I call *three-dimensionalism* (henceforth, *3-D*), the (variable) function that explains informativity is a *third function* that comes over and above Kaplanian character (or any such reference-fixing function) and content: I call it *metacharacter*. Metacharacters are functions from possible worlds considered as actual into words. Unlike character and content, which both belong to the *semantic* story, metacharacter is meant to capture something highly metasemantic, internalistic and often private: the descriptive means through which individual speakers *mentally* individuate *public* words. I am aware that the claim that speakers describe public words in a mental language may appear highly controversial. But my hope is to show that this claim may well solve our problem. Some authors have already suggested that questions surrounding the individuation of words may provide the key to solving the problem of informativity. Among them, Kaplan, in *Words*:[1]

"Could it be that the elusive cognitive difference between believing that Hesperus is Hesperus and believing that Hesperus is Phosphorus rests on nothing more than syntax? [...] My speculations led me to conclude that I had to go back to basics and rethink not just the semantics of names, but their very syntax, the metaphysics of words: How should words be individuated?" (Kaplan, 1990: 93-4)

[1] See also Kaplan (1989b: 598-599) for very similar suggestions.

3-D elaborates upon this suggestion, and the resulting view is close in spirit to Frege's in his *Begriffschrift*: the discovery that an identity sentence expresses a necessary truth is, for a crucial part, a *metalinguistic* discovery about *words* themselves. What Frege failed to appreciate, however, and what 3-D claims is the key to the problem of informativity, is that the *epistemic* individuation of names involves *substantive* knowledge of how the *actual* world is.

2 Some background

Before I present 3-D in more detail, I wish to state some assumptions that underlie it, and then highlight its continuity with the two-dimensionalist project.

2.1 Six assumptions

(a) Names are directly referential.

Kripke showed that names are rigid designators *de iure*. This means that their semantic content is (linguistically meant to be) a *constant* function, yielding the same individual (or set of individuals or substance, in the case of natural kind terms) for all possible worlds of evaluation. Descriptivism, in contrast, is the view that the semantic content of a name is (usually) a variable function, whose value depends on which individual happens to satisfy the corresponding descriptive condition in some possible world of evaluation. So we have:

Referentialism (direct reference, rigidity *de iure*): The intension of a name is constant.
Descriptivism: The intension of a name is variable.

I will grant referentialism, and this means that I accept Kripke's claim to the effect that some necessary truths can be discovered aposteriori. I also agree with him and with Kaplan that whereas necessity and contingency have to do with metaphysics, apriority and aposteriority have to do with epistemology. I think, however, that Kant and Frege were essentially right that anything which is necessary is *ipso facto* apriori. Also, I will, for that matter, line up with two-dimensionalists, who distinguish the bearers of necessity and contingency from those of apriority and aposteriority, although I will eventually disagree with them as to the nature and semantic role of the bearers of apriority and aposteriority. My major concern here is precisely to reconsider *how* necessity and apriority must be disentangled.

(b) Names are context-insensitive.

This is a thesis about the character of names. The rival views, here, are:

Minimalism: The character of a name is constant.

Contextualism: The character of a name is variable.

I will, following Kripke and Kaplan, grant minimalism. So I endorse the Millian view that linguistic conventions associate a name directly with its unique bearer; they do not specify descriptive conditions that would have to be satisfied by an individual in order to *gain* bearerhood. Linguistic conventions settle the bearer from the start. Names are *absolute*: their character is a constant function from contexts to contents. It follows that the cognitive value of names cannot be explained in terms of their character. Your ignorance of the fact that the sentence "Hesperus is Phosphorus" expresses a truth has nothing to do with your ignorance of facts concerning the *context* in which the sentence was used. On this view, names are massively ambiguous, and the role of context is not semantic (it is not to determine the reference of a particular name), but merely presemantic (it is to disambiguate which name was used). The view that names are *both* rigid and absolute—that is, the view that neither the content nor the character of a name are descriptive—I call *Millianism*.

(c) Semantics is not epistemology of language.

I grant, following Wettstein (1986), that it is not the job of a semantic theory to account for all differences in cognitive value. This is primarily the job of epistemology of language. Strictly speaking, my semantics is not three-dimensional; my semantics is two-dimensional in the benign sense that linguistic rules associate expressions with characters, and characters are functions defined on particular contexts of use.

(d) Some version of social externalism is true.

I follow the main lines of Burge's (1979) social externalism: which name I use and which content that name has does not ultimately depend on my beliefs, but on social facts. Words are objects in the outer world, about which, importantly, speakers can have imprecise or false beliefs.

(e) Names are individuated by their form and bearer.

Pace Devitt (1981) or Evans (1982), I will assume that a name has its causal source essentially. Here I side with Justice (2001), who defends *essentialism* about names:

"A name could have another referent only if it could have another bearer, but a name with any other bearer would be another name with its own origin in the naming of that other bearer. Having the bearer it has is an essential property of a name." (Justice 2001: 362)

So, *metaphysically speaking*, the name 'John' for John Lennon is individuated by its phonological form 'John' and John Lennon himself; the name 'John' for John Perry is *another* name, one which happens to share the phonological shape of the name 'John' for John Lennon, but not its bearer. Differences in bearers are *ipso facto* differences in

names. This actually follows from Millianism: linguistic conventions link a name directly with its unique bearer. So, on this metaphysics of names, it is not an essential property of John Lennon's that he be called 'John', but it is an essential property of that name 'John' that it is a name for John Lennon *only*.[2]

(f) There is only one modal space.

This means that conceivability entails possibility: whatever I can conceive of is metaphysically possible, an assumption commonly found in the literature[3], and that I will not discuss further here. Its relevance to the present discussion is that it implies that if something is conceivable then there must *ipso facto* be some metaphysically possible world in which it holds. We can *conceive* that the sentence "Hesperus is Phosphorus" is false, and the central aim of our enquiry is to locate and describe the sort of the falsifying possible world that our intuition detects (and which, of course, often explains the progresses of science).

2.2 Two-dimensionalism

3-D borrows some tools from two-dimensionalists. Inspired by Stalnaker's work on assertion and informativity (1978) and by Kaplan's (1989a) distinction between the character and the content of indexical expressions, two-dimensionalists have sought to extend the idea of a two-fold meaning to the semantics of names. In the case of indexicals, Kaplan's view seemed to allow that a competent hearer can grasp apriori, in virtue of her knowledge of character alone, something from my utterance of "I am hungry" even when she doesn't know precisely who uttered it and hence lacks full knowledge of the context: *that the producer of this utterance, whoever she is, is hungry*. Two-dimensionalists argue that things are similar with names. Despite Kripke's arguments to the contrary, they maintain that names are *linguistically* associated (perhaps implicitly) with reference-fixing descriptions. Also, they think, a hearer can understand something from an utterance of (1)

(1) Hesperus appears in the evening sky.

even when she doesn't know precisely which world is actual, and in particular doesn't know which star satisfies the reference-fixing condition *being the evening star* linguistically associated with the name 'Hesperus': *that the actual evening star, whatever it is, appears in the evening sky*.

The basic idea of 2-D is that there are two ways in which the semantic values of sentences depend on the facts. First, facts play an *interpretation role* when they determine what is said by a sentence on an occasion of use (this role is similar to that

[2] The claim here is that both the form and the bearer are *essential* to the individuation of a name; I do not mean that they are *sufficient*. In order to get sufficient identity conditions for names additional aspects of the causal chains relating the form of names with their bearers would have to be integrated.

[3] But see Soames (2006) for a proposal based on the denial of that assumption.

of contexts in Kaplan's framework). Second, facts play an *evaluation role* when they determine whether what was said by that sentence is true or false (this role is similar to that of circumstances in Kaplan's framework). Two-dimensionalists argue that, corresponding to these two forms of dependency to facts, there are two sorts of propositions that are associated with a sentence, which, following Chalmers's (2006) terminology, may be called, respectively, its *primary* and its *secondary* intensions. *Secondary intensions* just correspond to the traditional functions from possible worlds of evaluation to extensions. For instance, when I utter sentence (1) in the actual world of interpretation *i*, what I say is true with respect to *i* taken as a world of evaluation, because in the actual world it is Venus that appears in the evening sky, but false with respect to a counterfactual world of evaluation *j* in which it would be Mars and not Venus that appears in the evening sky, as shown in matrix *A*:[4]

	i	*j*
i	T	F

A

Now, two-dimensionalists argue that each sentence is associated with a *two-dimensional* matrix, one that captures, in addition to the dependency of truth-values on worlds taken in their evaluation role, the dependency of contents on worlds taken in their interpretation role. Which content a use of a sentence has depends on which world of interpretation turns out to be actual. Speakers have only imperfect knowledge of how the actual world is, so that a lot of possible worlds could, as far as they know, be the actual world. This imperfect knowledge, two-dimensionalists think, is relevant to semantics, for which world is *considered to be the actual world of interpretation* determines which secondary proposition gets actually expressed by a sentence. Had the actual world of interpretation been *j* and not *i*, then sentence (1) would have received a different content, one which is true in all worlds of evaluation in which it is Mars which is the star that appears in the evening sky, as shown in matrix *B*:[5]

	i	*j*
i	T	F
j	F	T

B

Stalnaker calls a two-dimensional matrix like *B* a *propositional concept*: this is a function from possible worlds of interpretation into propositions. The worlds in the vertical rows are worlds taken in their interpretation role (contexts), and the worlds in the horizontal row are worlds taken in their evaluation role (circumstances). Each horizontal line thus represents a distinct proposition. Now, two-dimensionalists claim,

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4 From García-Carpintero and Macià (2006: 4).

5 *Ibid*.

there is another important proposition which can be recovered from *B*: this is the *primary intension* they are after. Stalnaker calls it the *diagonal proposition*, because it corresponds to "the function from possible worlds into truth-values whose values are read along the diagonal of the matrix from upper left to lower right" (1978: 81). This is the proposition which is true for any world of evaluation *w* when *w* is also taken to be the world of interpretation, or, equivalently, it is the set of worlds of interpretation (contexts, if you like) in which the sentence is true. Importantly, the primary intension is also the proposition that the competent speaker knows apriori to be true, regardless of how the actual world of interpretation happens to be.

2-D comes in many versions; these differ in how they construe the worlds of interpretation and the primary intensions. As Chalmers (2006: 64) summarizes, the common denominator of all versions of 2-D is to relate the cognitive significance of a sentence with its primary intension:

Core thesis of 2-D: A sentence S is metaphysically necessary iff its secondary intension is necessary; S is epistemically necessary (a priori) iff its primary intension is necessary.

Correspondingly, a sentence S is *necessary aposteriori* iff its primary intension is contingent and its secondary intension is necessary; and S is *contingent apriori* iff its primary intension is necessary and its secondary intension is contingent.

3 Three-dimensionalism

My rejection of 2-D here simply follows from my assumption that Millianism is correct: both the character and the content of a name are constant functions. But then, given Millianism, the only way to solve the problem of informativity is to go *metalinguistic*. Indeed, it follows from Millianism that there is no possible world of *evaluation* in which Hesperus is not Phosphorus (names are rigid) and no possible world of *interpretation* in which the names 'Hesperus' and 'Phosphorus' have distinct contents (names are absolute). So if it is conceivable at all for a competent speaker that the sentence "Hesperus is Phosphorus" express a falsehood, this must be because that speaker, *although competent*, lacks some piece of metalinguistic knowledge about the *words* themselves. Donnellan once remarked:

"If we distinguish a sentence from the proposition it expresses, then the terms 'truth' and 'necessity' apply to the proposition expressed by a sentence, while the terms 'a priori' and 'a posteriori' are sentence relative. Given that it is true that Cicero is Tully [...], 'Cicero is Cicero' and 'Cicero is Tully' express the same proposition. And the *proposition* is necessarily true. But looking at the proposition through the lens of the *sentence* 'Cicero is Cicero', the proposition can be seen a priori to be true, but through 'Cicero is Tully' one may need an a posteriori investigation." (Donnellan, 1983: 88)

In the same spirit, Tichy (1983: 231) draws a distinction between the proposition expressed by a sentence S in a language L (what S says in L) and the proposition associated with S ("the proposition to the effect that S is true in L"), and notes:

"Kripke must think that the net result of the scientists' efforts was a *semantic* discovery. What they established is that the term 'heat' names molecular motion and that accordingly sentence (2) ["Heat is molecular motion"] states the truism that molecular motion is self-identical. In other words, they discovered the truth of the proposition associated with (2); it is that proposition which is only knowable *a posteriori*, through hard experimental slog." (Tichy, 1983: 234-5)

Drawing on Donnellan's and Tichy's suggestions, Wong (1996; 2006) has recently argued that the bearers of apriority and aposteriority are not propositions *simpliciter* (that would be the absolute view of apriority) but propositions *relative to* sentences (the relative view). Here's the core thesis of the relative view of apriority:

"A proposition *p* is a priori relative to a sentence S that expresses it if and only if S is a priori; *p* is a posteriori relative to a sentence S' that expresses it if and only if S' is a posteriori. [...] Some may want to replace 'a sentence S' by something like 'a way of taking *p*' or 'a mode of access to *p*'. Indeed, a major task in elaborating the relative view is to answer the question, 'What is it that a proposition can be said to be a priori relative to?'" (Wong, 1996: 67)

3-D's answer is: relative to the *epistemic* individuation of words. The descriptions through which a speaker individuates the words 'Hesperus' and 'Phosphorus' are the *lenses*, mentioned by Donnellan, through which this speaker fails to see that the sentence "Hesperus is Phosphorus" expresses a necessary truth. The problem is not semantic, but metasemantic: it has to do with how our speaker individuates the public names in her mind, and more specifically with what she wrongly believes or fails to know about these names.

3.1 The meaning-constitution problem

Before I go further, I wish to introduce a potential problem that threatens to undermine any metasemantic account like 3-D. García-Carpintero (2006) calls it the "meaning-constitution problem." Stalnaker (2006) contrasts between two interpretations, semantic and metasemantic, of the two-dimensionalist framework. On the semantic interpretation, primary intensions are *semantic* values that sentences have in virtue of *linguistic* conventions. Stalnaker claims that, granting Millianism, this interpretation gets automatically excluded: names are not *linguistically* associated with reference-fixing descriptions. Stalnaker (2001: 150, 152; 2006: 301) therefore urges that only the metasemantic interpretation of the framework could make sense, and I agree with him on that point. But, Stalnaker (1999: Introduction; 2001; 2006) goes on to argue, the metasemantic construal has the consequence that the meanings of names can vary

freely across worlds of interpretations, hence it appears to imply that no diagonal proposition will ever be necessary, and therefore that the metasemantic interpretation makes any account of apriori knowledge impossible:

"Since the metasemantic two-dimensional intension represents all the ways in which the reference or content of an expression depend on the facts, it will not provide any non-vacuous account of a priori truth. To say that a primary proposition associated with a sentence was necessary would be to say that the sentence would express a truth whatever it meant, and that notion, of course, will have no application." (Stalnaker, 2001: 155; my underlining)

Thus, the reasoning underlying Stalnaker's skepticism is this: given Millianism, a *metasemantic* interpretation must assume that words that are carried across worlds of interpretation are individuated by their *phonological form alone if their meaning is allowed to vary at all*, so that words end up having *any arbitrary* meaning relative to all possible worlds considered as actual. In other words, the primary proposition would, on the metasemantic interpretation, reflect all the possible meanings that names could have in *all possible languages*. This, then, is the meaning-constitution problem.

Interestingly, the worries expressed by Stalnaker resemble the reasons which led Frege to abandon the early metalinguistic view of his *Begriffschrift*. And here I disagree. I think that Stalnaker's point shows *not* that no Carnapian connection holds between apriori knowledge and linguistic conventions, but only that *the relevant diagonal*, the one that accounts for apriori knowledge, is of another sort, and must be construed differently. On my account, the key to overcome the meaning-constitution problem is to contrast between two types of metasemantic facts: *metaphysical metasemantic facts* (facts relevant to the *metaphysical individuation* of words) and *epistemic metasemantic facts* (facts relevant to the *epistemic individuation* of words). My view is then that something *epistemic* about the word can vary from world to world even though the *metaphysical* word itself remains, as Millianism requires, fixed.

3.2 Metaphysical *vs* epistemic individuation of words

I have assumed that, *metaphysically* speaking, its bearer is essential to a name. As a consequence, sentences (2) and (3) must express necessary truths about *our* language:

(2) 'Hesperus' designates Hesperus.
(3) 'Hesperus' designates Phosphorus.

But then, how can a competent speaker discover that those metalinguistic truths only aposteriori? After all, if I am linguistically competent, then I should know that the propositions expressed by those sentences are true, since I do have a reliable grasp on what these names designate. The key is that, somehow, my *epistemic* situation is such that, for all I *know*, the actual language might be one in which these two names are *not* coreferential, even though, *metaphysically* speaking, there is *no* possibility that *our*

actual language be such that the two names would not corefer. Importantly, this can only be because my cognitive access to public *words* themselves is mediated by some *inner description of words*. Also, *epistemically* speaking, a name is individuated by its form and a *description* of its bearer. My descriptions of the words 'Hesperus' and 'Phosphorus'—the *lenses* through which I see them—are somehow too vague and too general to exclude the possibility that they don't corefer. The *epistemic* individuation of a public name thus involves a description of its bearer, which is used within a *(mental) reference-fixing description of the name* itself.

3.3 Linguistic competence

One point of claiming that the informativity of the sentence "Hesperus is Phosphorus" is a *metasemantic* matter is to maintain that even a *linguistically competent* speaker can fail to see that this sentence is true. Here is how I define linguistic competence:

> Linguistic competence: In order to be linguistically competent with respect to a name N, a speaker must have the capacity to reidentify the bearer of N as the bearer of N through a *substantive* description that uniquely picks out the individual which is the bearer of N in the *actual* world.

So, for instance, in order to be competent with respect to the name 'Aristotle', all you need to know is the form of the name and *one* description that uniquely picks out Aristotle in the *actual* world, like *the tutor to Alexander the Great* or any other description identifying only Aristotle in the actual world. With this knowledge at hand, you will be able to correctly identify, in the actual world, the *name* 'Aristotle' itself: you will know of this name (i) that it has the phonological form 'Aristotle', and (ii) that its bearer was the tutor of Alexander the Great. But on that definition of linguistic competence, and because that definition requires only to have a *contingent* description of the bearer (one satisfied by the bearer in the *actual* world), there are lots of things you can still discover about a name with respect to which you are, nonetheless, already perfectly competent. This definition of linguistic competence paves the way for a definition of metacharacters.

3.4 Metacharacters

Metacharacters can be defined in either of two equivalent ways. They can be seen either as functions from possible worlds considered as actual to words, or as functions from possible languages considered as actual to words. Both understandings are fine here, because on my view possible languages cannot vary independently of possible worlds, and each possible language is determined by exactly one possible world. It must, however, be borne in mind that a central idea of 3-D is that what we discover when empirical investigation reveals a necessary truth is *also* something about the *language*. Consequently, what we want as a result of my discovery is that I exclude

some *languages* from the set of languages compatible with my metalinguistic beliefs, and not only that I exclude some worlds from the set of worlds compatible with my beliefs.

Consider John, who is a linguistically competent speaker of English. He knows that the following sentences express truths about English:

(4) 'Hesperus' is a name for the actual evening star.
(5) 'Phosphorus' is a name for the actual morning star.

John is *linguistically* competent, on the standards just defined, because both of those contingent substantive descriptions uniquely identify a certain star in the *actual* world, and because *that* star is indeed an essential ingredient of what metaphysically individuates both of the words 'Hesperus' and 'Phosphorus'. (In order to count as linguistically competent with respect to the sentence "Hesperus is Phosphorus", the minimal information that John has to recover from it is the proposition *that the actual evening star is the actual morning star*. Although general, this proposition is rigid *de facto*—because of 'the actual'—so that its secondary intension is equivalent to the singular proposition *semantically* expressed, viz. *that Venus is Venus*. So the general proposition corresponding to linguistic *competence* and the singular proposition which is *semantically* expressed by the sentence share the same truth-value in all possible worlds of evaluation.) However, as far as John's *metalinguistic* knowledge is concerned, the actual public word 'Hesperus' could still be a lot of words. This is because John doesn't know precisely which *world*, among, say, w_1, w_2, and w_3, is the actual one, and especially he doesn't know exactly which entity, among Venus, Mars, and Uranus, is the actual evening star:

$w_1 \rightarrow$ Venus
$w_2 \rightarrow$ Mars
$w_3 \rightarrow$ Uranus

It follows that his metalinguistic knowledge of the word 'Hesperus' is imperfect because, as far as he knows, three words could still equally plausibly be the actual word 'Hesperus', depending on which entity turns out to be the actual evening star:

Venus-word: The word 'Hesperus' picks out Venus in the actual public language, because the actual evening star is Venus;

Mars-word: The word 'Hesperus' picks out Mars in the actual public language, because the actual evening star is Mars;

Uranus-word: The word 'Hesperus' picks out Uranus in the actual public language, because the actual evening star is Uranus.

As far as John is aware, the actual word 'Hesperus' might be either of these three words, *depending* on which world (hence, language) turns out to be the actual one.

This dependency is precisely what the *metacharacter function* is meant to capture. John's linguistic competence is fine, but his metalinguistic competence is imperfect because his knowledge of the actual world (hence, of the actual language) is imperfect.

2-D picture: 'Hesperus' (The associated description describes an *object*.)

	Venus-world	Mars-world	Uranus-world
Venus-world	Venus	Venus	Venus
Mars-world	Mars	Mars	Mars
Uranus-world	Uranus	Uranus	Uranus

3-D picture: 'Hesperus' (The associated description describes a *word*.)

	Venus-world	Mars-world	Uranus-world
Venus-world	Venus-word	Venus-word	Venus-word
Mars-world	Mars-word	Mars-word	Mars-word
Uranus-world	Uranus-word	Uranus-word	Uranus-word

The constancy in each *horizontal* row of both matrices reflects John's knowledge that, respectively, names in general are rigid because they have their bearer essentially. In the three-dimensional analysis, if the actual world is the Venus-world, then it will be an *essential* property of the name 'Hesperus' that it picks out Venus as its referent, and if the actual world turns is Mars-world, then it will be an essential property of the name 'Hesperus' that it picks out Mars as its referent, etc. The metacharacter that John associates with the word 'Hesperus' is given by the *diagonal* of this matrix. This diagonal reflects John's knowledge *that whichever world (language) turns out to be actual, the public word 'Hesperus' is such that it is a word essentially for whatever is the evening star in that world*. That piece of knowledge is sufficient for *linguistic* competence, but it is not sufficient to grasp the *metalinguistic* proposition *that 'Hesperus' and 'Phosphorus' corefer*, because it doesn't entail anything about whether or not the actual evening star is the actual morning star. The effect of an assertion of "Hesperus is Phosphorus" on John is double: (i) eliminate all the possible *worlds* in which the evening star is not the morning star from the set of worlds compatible with his knowledge of the actual world; (ii) eliminate all the possible *languages* in which the two names do not corefer from the set of languages compatible with his knowledge of the actual language, that is, modify his *metalinguistic* competence. (His linguistic competence remains unchanged.)

3.5 The solution to the meaning-constitution problem

We are now in a position to overcome the meaning-constitution problem and disavow Stalnaker's skepticism about a metasemantic account of apriori knowledge. It follows from my definition of linguistic competence with respect to a name that each

competent speaker must possess at least a *substantive contingent description which is uniquely satisfied by the bearer in the actual world*. That description stops the regression Stalnaker worries about, because it restricts the (infinite) set of *arbitrary* meanings that a phonological shape could have to the (finite) set of words that an actual word might be *as far as a competent speaker's knowledge of the word is concerned*. So it is the descriptions used to *epistemically* individuate the names that are kept constant across worlds (languages) considered as actual, and, importantly, these descriptions can, *even for a linguistically competent speaker*, still pick out different names at different worlds (languages). To say that John is *linguistically* competent with respect to the name 'Hesperus' is to say that he knows *enough* of the actual world to know that not everything could plausibly be the actual evening star *and hence that he knows enough of the actual world to know that not everything* could plausibly be the word 'Hesperus'. Since he knows the truth of the metalinguistic sentence (6),

(6) 'Hesperus' is a word for the actual evening star.

John knows **apriori**, *in virtue of his metacharacter alone*, that the object-language sentence (7)

(7) Hesperus is the evening star.

will express a truth in the actual world (language), *whatever the actual world (language) turns out to be*. And this is the result we were after. Only, metacharacters are often private, and apriori knowledge in general will need to be relativized to *individual* speakers (at particular times). But the account will hold regardless of the particular descriptions that individual speakers use to mentally individuate a public word, so long as these descriptions are substantive descriptions which are uniquely satisfied by the bearer in the actual world. This, then, is the sense in which linguistic conventions and apriori knowledge are connected. Carnap vindicated!

4 Conclusion

The sentence "Hesperus is Phosphorus" can be informative even to a linguistically competent speaker because, although she must know at least a (rigidified) general proposition (hence, one *cointensive* with the singular proposition *semantically expressed* by the sentence), she is not required to know the metalinguistic proposition *that the words 'Hesperus' and 'Phosphorus' corefer*. This metalinguistic proposition is necessary, because, metaphysically speaking, names have their bearers essentially. But our speaker, although competent, ignores it, because she epistemically individuates the names through descriptions that are only *contingently* true of the bearer in the actual world, and is not aware that the description she uses for the bearer of 'Hesperus' and the description she uses for the bearer 'Phosphorus' pick out the same individual in the actual world (language). Metacharacters capture the connection

between linguistic conventions and apriori knowledge, and do so by reflecting what a competent speaker must know of the *names* regardless of precisely which world and language happen to be actual.

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