

EPISTEMIC TWO-DIMENSIONALISM AND THE EPISTEMIC ARGUMENT

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One of Kripke's fundamental objections to descriptivism was that the theory misclassifies certain *a posteriori* propositions expressed by sentences involving names as *a priori*. Though nowadays very few philosophers would endorse a descriptivism of the sort that Kripke criticized, many find two-dimensional semantics attractive as a kind of successor theory. Because two-dimensionalism needn't be a form of descriptivism, it is not open to the epistemic argument as formulated by Kripke; but the most promising versions of two-dimensionalism are open to a close relative of that argument.

I. The Epistemic Argument and the Limits of *A Priori* Knowledge

One of Kripke's most powerful objections to the descriptivist theory of names he considered in *Naming and Necessity* was that the theory misclassifies the propositions expressed by certain sentences as *a priori*. For example, Kripke pointed out that the proposition expressed by a sentence of the form

- (1) If n exists, then n is F .

will be, in the standard case, *a posteriori*. But according to the simplest version of descriptivism, the propositions expressed by sentences of the form of (1) just are the propositions expressed by the corresponding instances of

- (2) If the F exists, then the F is F .

which seem clearly to be *a priori* truths.

But even if many were convinced that Kripke's arguments discredited the descriptivist theories he considered, many were not satisfied by the Millian alternative to descriptivism. Such philosophers often take it to be a constraint on a theory of names that it captures the perceived explanatory advantages of descriptivism—including its account of the problems of empty names and of apparent substitution failures of coreferential names in attitude ascriptions—while avoiding Kripke's arguments against classical

descriptivism. More than one theory has been so motivated—including the various versions of non-descriptive Fregeanism,¹ and the views of names as rigidified and wide-scoping descriptions.² These days, the most popular theories of this sort are versions of two-dimensionalist semantics. The most promising versions of two-dimensionalist semantics are not versions of descriptivism, and hence are not open to the epistemic argument, as formulated by Kripke. The aim of this paper is to show that these versions of two-dimensionalism are nonetheless open to a close relative of that argument.

Just as Kripke's epistemic argument relied on the assumption that the relevant instances of (1) were genuinely *a posteriori*, a parallel argument against two-dimensionalist semantics must provide not just an argument that the two-dimensionalist must classify certain sentences as *a priori*, but also an argument that this really is a *misclassification*. For this reason, it will be useful to be clear from the start on what I am assuming about what can and cannot be known *a priori*.

Intuitively, some pairs of properties are such that one member of the pair's being instantiated is internally related to the other member of the pair's being instantiated—for example, the properties of being a child and of being a parent. Other pairs of properties are not so related—like the properties of being a frog and being a light bulb. Intuitively, the instantiation of the property of being a frog needn't have anything to do with whether the property of being a light bulb is instantiated. To make precise this intuitive notion of properties that needn't have anything to do with one another, let's say that two properties, *F* and *G*, are *independent* if and only (1) *F*'s being instantiated is compossible both with *G*'s being instantiated and its being uninstantiated, and (2) *F*'s being instantiated does not *a priori* entail either *G*'s being instantiated, or *G*'s being uninstantiated. So, for instance, the properties of being a child and being a parent are not independent, in this sense; given that the first is instantiated, it is both necessary and *a priori* that the second is. By contrast, the properties of being a frog and being a light bulb are, like most pairs of properties, independent. This definition of independence has a natural extension to the case of concrete particulars: two things, *m* and *n*, are independent iff (1) *m*'s existence is compossible both with *n*'s existence and with *n*'s nonexistence, and (2) *m*'s existence does not *a priori* entail either *n*'s existence, or *n*'s nonexistence.³

Given this definition of independence, I take the following principles to be, if not platitudes, at least extremely plausible claims about the limits of *a priori* knowledge:

- (A) On the basis of the knowledge that some particular thing *n* is *F*, you can't know *a priori* whether some other thing exists which instantiates some other property *G*, if the two properties are independent.

¹See, among many other places, McDowell [1977] and Evans [1981].

²For defence of the former, see Plantinga [1978]; for defence of the latter, see Dummett [1981]; Sosa [2001]. For criticism of these approaches, see Soames [1998, 2002]; Caplan [2005].

³And, obviously, we can extend the definition to the case of a pair of a particular object and a property. A particular *n* and property *F* are independent iff (1) *n*'s existence is compossible both with *F*'s being instantiated and with *F*'s being uninstantiated, and (2) *n*'s existence does not *a priori* entail either that *F* is instantiated, or that *F* is uninstantiated.

- (B) One cannot know *a priori* facts about one's relations to some particular object *n*, even given knowledge of some of *n*'s properties—provided that those properties are, in the above sense, independent of your standing in the relevant relations to *n*.
- (C) Given knowledge that some particular thing *n* is *F* and that something else is *G*, you cannot deduce *a priori* that you exist—provided that your existence is independent both of the existence of *n*, and of *F* and *G*.⁴
- (D) Given knowledge that some particular thing *n* is *F*, you are not in a position to know *a priori* which of two epistemically possibly hypotheses about some other particular thing *m*—say, that *m* is *G* and that *m* is *H*—is true, so long as *F*, *G*, and *H* are independent.

I think that each of (A)–(D) will strike most philosophers as extremely plausible claims about the limits of *a priori* knowledge—many will probably think them too obvious to be worth defending. But, in any case, it is not difficult to motivate principles like these.

To say that one claim is *a priori* deducible from another is to say that given knowledge of the latter, no further experience is required for knowledge of the former.⁵ Put in these terms, principle (D), for example, says that given knowledge that some thing *n* is *F*, you are never in a position without further evidence to decide between two otherwise epistemically possible hypotheses about some distinct thing, *m*.⁶ Moreover, this is not due merely to your cognitive limitations; rather, it's the case that the information that *n* is *F* is just in principle not enough information to decide between the two epistemically possible hypotheses about *m*. So put, the principle seems obviously correct: *a priori* reasoning does not in general allow us to infer the properties of one thing from information about something else. Similar informal arguments can be given for (A)–(C).

Another way to see the intuitive appeal of these principles is via consideration of examples. Consider an independent pair of properties, like the properties of being born in Indiana and of being seven feet tall; these are independent, since the instantiation of the first is compossible with both the instantiation and the non-instantiation of the second, and one cannot know *a priori*, given that the first is instantiated, whether or not the second is. Suppose that you come to know that some particular thing, say, Larry Bird, instantiates the property of being born in Indiana. Given this knowledge, it seems that you are in no position to deduce *a priori* whether or not anything instantiates the property of being seven feet tall (principle (A)). Further, it seems, knowledge that Larry Bird has this property—and perhaps others, like being a basketball player for the Boston Celtics—does not put me in a

⁴This principle is perhaps a bit more controversial than the others, since some think that we can know *a priori* of our own existence. If this were right, the principle would be true but vacuous, since given the above definition of independence nothing would be (for me) independent of my existence, since every proposition would *a priori* entail that I exist. I assume in what follows that we can't know *a priori* of our own existence, though almost all of the argument would survive giving up this assumption.

⁵Here and in what follows, claims about *a priori* knowledge could be recast in terms of *a priori* justification without affecting the argument.

⁶Given, of course, the above provisos about independence.

position to know *a priori* that I stand in certain relations to Larry Bird, like the relation I would express with the words ‘I tried to shoot like Larry Bird’ (principle (B)). Further, and for much the same reason, knowledge that Larry Bird has properties like being born in Indiana and being a player for the Celtics does not put me in a position to deduce *a priori* that I exist (principle (C)). Finally, knowing that Larry Bird has these properties does not put me in a position to decide *a priori* between two otherwise epistemically possible hypotheses about some distinct thing—say, the hypotheses that Magic Johnson played basketball for the Los Angeles Lakers, and that he played for the New York Knicks (principle (D)).

Of course, showing that these principles hold for one case doesn’t amount to a proof that they hold for every case; but consideration of examples helps to bring out the intuition that *a priori* knowledge which violated any of (A)–(D) would be extremely mysterious. How, one wants to ask, *could* knowledge of the properties of one thing put me in a position to decide between two independent hypotheses about something else? Nonetheless, I’ll argue, the most plausible versions of two-dimensionalist semantics are committed to rejecting each of (A)–(D). To the extent that (A)–(D) seem plausible, this gives us very strong reason to reject those versions of two-dimensionalism.

II. Epistemic Two-dimensionalism

For our purposes, we can think of two-dimensionalist semantics as the view that a sentence has, relative to a context, (at least) two sorts of meaning, one of which—its primary intension—is more closely related to the sentence’s epistemic properties, and one of which—its secondary intension—is more closely linked to the sentence’s (metaphysical) modal profile. Using ‘primary intension’ as a name for the epistemic aspect of meaning and ‘secondary intension’ as a name for the metaphysical aspect of meaning, we can then say that a priority and metaphysical necessity are just two different kinds of necessity that a sentence can possess; for a sentence to be *a priori* is for it to have a necessary primary intension, and for it to be metaphysically necessary is for it to have a necessary secondary intension.⁷

Standard, non-two-dimensionalist, views of content already imply that a sentence has a necessary secondary intension iff it is metaphysically

⁷The primary/secondary proposition distinction lines up with the diagonal/horizontal proposition distinction of Stalnaker [1978], the distinction between deep and superficial necessity of Evans [1979], and the A-intension/C-intension distinction in Jackson [1998], though these authors differ as regards both the nature of primary intensions and their proper theoretical role.

This is also a good place to dispel confusion about an aspect of the terminology used in this paper: the talk about sentences being necessary and *a priori*. Many will be inclined to object that the proposition expressed by a sentence rather than the sentence itself is the fundamental bearer of necessity and a priority. The problem in the present context is that the nature of the fundamental bearers of these modal and epistemic properties is part of what is up for grabs in this debate, with two-dimensionalists wanting to replace talk about ‘the proposition expressed by a sentence’ with talk about the primary and secondary intensions of the sentence. But both two-dimensionalists and their opponents can agree that we can speak of sentences being *a priori* or necessary in a derivative sense, even if they disagree about how this is to be analysed. So the talk about sentences being *a priori* and necessary can be thought of as an attempt to find a non-prejudicial way to state the relevant issues.

necessary.⁸ Given this, the distinctive task of the two-dimensionalist is to explain a view of primary intensions which validates what Chalmers has called the ‘Core Thesis’ of two-dimensionalism:

The Core Thesis: A sentence is *a priori* iff it has a necessary primary intension.

The most familiar version of two-dimensionalism identifies the primary intension of an expression with a function from contexts to the reference of the expression as used in that context. If we think of contexts as possible worlds with a designated agent and time, the primary intension of an expression, on this view, is a *contextual intension*: that function from contexts to extensions which, given some context as argument, delivers as value the extension that that expression would have if uttered in that context, and evaluated with respect to the world and time of that context. In this contextual version of two-dimensionalism, the primary intension of an expression is taken to be, if not quite identical to that expression’s character (in Kaplan’s sense) then, as at least definable in terms of it.⁹

The identification of primary intensions with contextual intensions, however, faces a number of serious problems. A particularly pressing one is that sentences like ‘Language exists’ or ‘Sentence tokens exist’ have necessary contextual intensions: the sentence ‘Sentence tokens exist’ is true with respect to any context in which it is uttered, since any context in which it is uttered is one in which a token of that sentence exists. But sentences of this sort are not plausibly *a priori*; so on contextual versions of two-dimensionalism, the Core Thesis comes out false. This is unacceptable.¹⁰

One response to the problems faced by contextual two-dimensionalism is that they do not show that the two-dimensionalist approach to the metaphysical and epistemic modalities is flawed, but only that the identification of the primary intension of an expression with its contextual intension is a mistake. In an important series of recent papers, Chalmers has defended this line of response with a new view of the nature of primary intensions.¹¹

The fundamental idea is that primary intensions are not functions from contexts to the extension of the expression as used in that context, but rather functions from certain kinds of hypotheses about the way the actual world might be to the extension of the expression, given the supposition

⁸Here, as is standard, I am identifying the secondary intension of a sentence with either what Russellians would call the proposition semantically expressed by that sentence or the intension (structured or not) determined by that proposition.

⁹A relatively minor difference here stems from the fact that Kaplan’s characters were functions from contexts to functions from circumstances of evaluation to extensions. Contextual intensions are functions from contexts to extensions—the extension that would be delivered by the value of a Kaplan character if the circumstance of evaluation is the context. I take it that this is the view Chalmers has in mind when he says ‘a primary intension is straightforwardly derivable from a character and vice versa’ [Chalmers 1996: 356–6, n. 25].

¹⁰This problem is discussed in §2 of Chalmers [2006a]; Garcia-Carpintero [2006] argues that the problem is not fatal to contextual two-dimensionalism. This problem of overgeneration of *a priori* truths is, obviously, akin to the problem with descriptivism Kripke identified in his epistemic argument. Among the most difficult further problems faced by contextual two-dimensionalism is that in order to respect standard examples of the necessary *a posteriori*, the contextual two-dimensionalist must treat names and natural kind terms as indexical, rigidified descriptions. For an in-depth discussion of the problems with this view of names and kind terms, and critique of various versions of contextual two-dimensionalism, see Soames [2005].

¹¹Chalmers [2002, 2004, 2006a, 2006b, ms.].

that the world is that way. Chalmers describes these epistemic intensions as follows:

[T]here is a strong epistemic dependence of an expression's extension on the state of the world. If we come to know that the world has a certain character, we are in a position to conclude that the expression has a certain extension. And if we were to learn that the world has a different character, we would be in a position to conclude the expression has a different extension. That is: we are in a position to come to know the extension of an expression, depending on which epistemic possibility turns out to be actual.¹²

Epistemic intensions are functions from epistemic possibilities—or, as Chalmers says, *scenarios*—to extensions. A sentence is true with respect to a scenario if and only if the scenario *epistemically necessitates* that sentence. Glossing over some subtleties that for our purposes won't matter, we can think of a scenario as a conjunction of sentences which is both epistemically possible—in the sense that its negation is not *a priori*—and epistemically complete—in the sense that, for any sentence, the scenario epistemically necessitates either it or its negation.

Chalmers considers several views of the nature of epistemic necessitation, some of which do, and some of which do not, make epistemic necessitation equivalent to *a priori* entailment, in the sense that for a sentence *S* to be epistemically necessitated by (and hence true at) a scenario is for the material conditional with the scenario as the antecedent and *S* as consequent to be *a priori*.¹³ But in fact the Core Thesis rules out any view of epistemic intensions on which they are not equivalent, in this sense, to *a priori* entailment.

Given the Core Thesis, epistemic necessitation must be some relation *R* such that for any sentence *S*, *S* is *a priori* iff for all scenarios *e*, *R*(*e*, *S*). What we want to show is that, given this,

$R(e, S)$ iff $\lceil e \rightarrow S \rceil$ is *a priori*.

One way to show this is to begin with the following lemma:

$R(e, S)$ iff $R(e, e \rightarrow S)$

This lemma may be intuitively obvious, but we can also give the following argument for it, assuming only that the Core Thesis is true.

Left to right: $\lceil S \rightarrow (e \rightarrow S) \rceil$ is *a priori*, so, given the Core Thesis, it must be true at every scenario. So any scenario which epistemically necessitates *S* must also epistemically necessitate $\lceil e \rightarrow S \rceil$.

Right to left: if *e* epistemically necessitates *S*, then knowing that *e* is the case puts one in a position to know that $\lceil e \rightarrow S \rceil$ is true. There are only two ways for $\lceil e \rightarrow S \rceil$ to be true: for *e* to be false, or for *S* to be true. But knowing that *e* is the case can never put one in a position to know that *e* is false; so if *e* epistemically necessitates $\lceil e \rightarrow S \rceil$, *e* must put one in a position to know that *S*. But then *e* epistemically necessitates *S*.

¹²Chalmers [2004: 177–8].

¹³See, for example, the discussion of Ramsey intensions in Chalmers [2006a: §3.3].

We then argue for the equivalence of *a priori* entailment and epistemic necessitation, i.e., the truth of the biconditional

$$R(e, S) \text{ iff } \lceil e \rightarrow S \rceil \text{ is } a \text{ priori.}$$

as follows:

Left to right: suppose that $\lceil e \rightarrow S \rceil$ is not *a priori*. Then, by the Core Thesis, there must be some scenario e^* such that $\neg R(e^*, e \rightarrow S)$. Either $e^* = e$ or $e^* \neq e$. But the latter is impossible, since, scenarios being complete epistemic possibilities, any scenario must epistemically necessitate the negation of any other scenario; and if e^* did epistemically necessitate $\neg e$, then, given that $\lceil \neg e \rightarrow (e \rightarrow S) \rceil$ is *a priori*, e^* would epistemically necessitate $\lceil e \rightarrow S \rceil$, which is contrary to our supposition. So $e^* = e$, and $\neg R(e, e \rightarrow S)$. But then it follows from our lemma that $\neg R(e, S)$.

Right to left: suppose that $\lceil e \rightarrow S \rceil$ is *a priori*. Then, by the Core Thesis, for any scenario e^* , $R(e^*, e \rightarrow S)$; so, in particular, $R(e, e \rightarrow S)$. But then, by our lemma, $R(e, S)$.

So if the Core Thesis is to be true, then epistemic necessitation must be at least extensionally equivalent to *a priori* entailment. In what follows, I'll simply identify the two; but extensional equivalence is all that is required of the arguments to follow, and, if the argument above is correct, that can't be abandoned without giving up the Core Thesis.

It is worth making explicit one consequence of this sort of view: *a priori* entailment must be transitive, in the sense that for any sentences p, q, r , if the material conditionals $\lceil p \rightarrow q \rceil$ and $\lceil q \rightarrow r \rceil$ are *a priori*, then $\lceil p \rightarrow r \rceil$ must be as well. To show that epistemic two-dimensionalism requires that *a priori* knowability is transitive in the above sense, suppose that this is not the case, and let s_1, s_2, s_3 be a trio of sentences such that $\lceil s_1 \rightarrow s_2 \rceil$ and $\lceil s_2 \rightarrow s_3 \rceil$ are *a priori*, although $\lceil s_1 \rightarrow s_3 \rceil$ is not *a priori*. Since the negation of the last of these is not *a priori*, by the Core Thesis there must be at least one scenario e which epistemically necessitates s_1 but not s_3 . If $\lceil s_1 \rightarrow s_2 \rceil$ is *a priori*, then any scenario epistemically necessitating s_1 also epistemically necessitates s_2 , so in particular e must epistemically necessitate s_2 . By parallel reasoning, if $\lceil s_2 \rightarrow s_3 \rceil$ is *a priori*, s_3 must be epistemically necessitated at e as well. But this contradicts our initial assumption that s_3 is not epistemically necessitated by e . Many will find the transitivity thesis to be intuitively plausible;¹⁴ however, because this thesis will be a background assumption of many of the arguments that follow, it is important to see that it is a consequence of the framework of epistemic two-dimensionalism rather than a separate assumption which the epistemic two-dimensionalist might either accept or reject.

Below I'll argue that the epistemic two-dimensionalist is forced to misclassify certain sentences—which are closely related to sentences of the form of (1)—as *a priori*. And it misclassifies these sentences as *a priori* for

¹⁴Though not everyone; for a view which denies the transitivity of *a priori* entailment, see §V of Soames [2007].

the same reason: the epistemic two-dimensionalist, like the classical descriptivist, explains the sort of meaning relevant to the epistemic status of sentences involving a name in terms of the speaker's procedures for identifying the referent of the name in a possible state of the world, given certain information about that state of the world. Given this, it is not surprising that this sort of view will entail that there are *a priori* connections between a name's having a reference and the world's being such that the relevant procedures for identifying a referent yield a result.

Putting the point in this way shows the affinity of the present line of argument, not just to Kripke's epistemic argument, but also to Laura Schroeter's argument in her important paper, 'Considering Empty Worlds as Actual'.¹⁵ There Schroeter argues convincingly that our methods for identifying the referents of natural kind terms like 'water' in certain scenarios require that we take into account not just the intrinsic properties of various liquids, but also the relations in which we stand to those liquids and our linguistic practice. This seems to entail, implausibly, that there are *a priori* connections of a certain sort between the existence of water and the existence of the speaker and her linguistic practices. The present paper can be thought of as an attempt to show that the sort of argument Schroeter gives is independent of any particular view about how we identify the referents of natural kind terms, or indeed expressions of any sort. The arguments will be effective against any version of epistemic two-dimensionalism which distinguishes between expressions which may be used in the construction of scenarios, and those which cannot.¹⁶

This last point needs a word of clarification. Many are attracted to two-dimensionalist semantics in order to preserve a close link between the metaphysical and epistemic modalities, which in turn is wanted to validate certain kinds of inferences from epistemic possibility (conceivability) to metaphysical possibility. The sort of two-dimensionalist I will be interested in wants to preserve such a link, and therefore wants each epistemic possibility to correspond to some metaphysically possible world. Given this aim, it is clear that the vocabulary used in the construction of scenarios must be restricted so as to not include most ordinary proper names. For consider some false identity statement involving names, like 'Blair is Bush'. The negation of this identity claim is not knowable *a priori*; hence 'Blair is Bush' must be epistemically possible, and hence true in at least one scenario. But this sentence can't simply be a part of the scenario description, since otherwise (given the plausible assumption that it is metaphysically impossible for Blair to be identical with Bush) the scenario would not describe a metaphysically possible world, and we would not have the wanted connection between epistemic and metaphysical possibility.

So it must be possible for a name *n* to have a reference with respect to a scenario even if *n* does not figure in the specification of that scenario. To see how this might work, note that scenarios will contain various definite

¹⁵Schroeter [2005].

¹⁶As will become clear, there's also an interesting connection between the present argument and the argument that various forms of externalism entail that we have *a priori* knowledge of the existence of natural kinds like water. See, among other places, Boghossian [1997].

descriptions which denote different objects. Given this, for n to have a reference in the scenario is for the scenario to epistemically necessitate the claim that the referent of the name is the same as the object denoted by one (or more) of these definite descriptions. In other words, for n to have a reference in a scenario e is for there to be some description ‘the F ’ in the scenario such that the conditional ($e \rightarrow (n = \text{the } F)$) is *a priori*.¹⁷ (It is worth emphasizing that the relevant description will typically vary between different scenarios in which n has a reference; were this not so, then the epistemic two-dimensionalist *would* be open to Kripke’s version of the epistemic argument, since claims with the form of (1) would then be true with respect to every scenario, and hence (by the Core Thesis) *a priori*.)

III. The Argument

However, there are many scenarios and names such that no sentence of the form ‘ n is the F ’ will be epistemically necessitated by the scenario. Consider, for example, my use of the name ‘Mick Jagger’. Suppose that the properties I attribute to Mick Jagger can be divided into two conjunctions of properties, F and G . Every property I attribute to Mick Jagger is included in one of the two, and many are included in both. So, for example, F might include

the lead singer on *Sympathy for the Devil* & member of the greatest band of the 1960s & once enrolled in the London School of Economics & the star of *Freejack* & ...

while G might include

member of the greatest band of the 1960s & one of the Glimmer Twins & born in Kent in 1943 & helped to organize the infamous concert at Altamont & ...

What matters is that there is a rough parity between the two as regards the number of properties in the two conjunctions and the centrality of those properties to my conception of Mick Jagger. It seems clear that F and G could be *independent*, in the sense defined at the outset: F ’s being instantiated is compossible with G ’s either being or not being instantiated, and one can’t know *a priori* that if F is instantiated, G is, or the reverse.

As a consequence, the following is epistemically possible:

- (3) Something is the F , and something else is the G .

One cannot know *a priori* that what (3) says is not the case. Because (3) is not anywhere near epistemically complete, even as regards the lives of the bearers of F and G , there will be very many scenarios which epistemically necessitate (3).

¹⁷This follows the discussion in Chalmers [2006a: §3.7].

For any scenario which epistemically necessitates (3), will there be a description ‘the *D*’ such that ‘Mick Jagger is the *D*’ is epistemically necessitated by the scenario? Parity reasoning indicates not. There are two candidate references for ‘Mick Jagger’ in the scenario; nothing will favour one over the other, and so it will not be epistemically necessary that either is the referent of the name. So, in scenarios of this sort, the epistemic intension of ‘Mick Jagger’ (for the relevant person) will deliver no reference. So, presumably,

Mick Jagger exists

will be false at these scenarios.¹⁸ But then it looks as though the material conditional

(4) Mick Jagger exists \rightarrow \neg (something is the *F*, and something else is the *G*)

will have an epistemic intension which is true at every scenario, since any scenario at which the antecedent is true will not be a scenario in which something is *F* and something else is *G*, and hence will be one in which the consequent of the conditional is true. So, by the Core Thesis, this conditional will be *a priori*. But this is clearly incorrect; given knowledge that Mick Jagger exists, one cannot deduce *a priori* that it is not the case that one thing is *F*, and something else is *G*. Or, to put the same point a different way, given knowledge that Mick Jagger exists and that something is *F*, one cannot deduce *a priori* that nothing is *G*. If epistemic two-dimensionalism is to provide a plausible treatment of names, it must block the result that (4) is *a priori*.

The similarity to Kripke’s epistemic argument should be clear. Just as, in the case of the epistemic argument against descriptivism, we construct a conditional whose antecedent is an existential claim involving a name and whose consequent states a necessary condition for something to satisfy the descriptivist condition for being the referent of the name, so, here, we form a conditional with an existential claim in the antecedent and, in the consequent, a condition on scenarios necessary for some sentence involving the name to be epistemically necessitated by the scenario. In both cases, we focus on the fact that the theories define the meaning of the name partly in terms of the methods speakers would use to identify the reference of the name, and note that, *contra* the theory, there is no *a priori* connection between the existence of the relevant object and the world’s being such as to satisfy the conditions placed by the theory on the name’s having a referent.

The point that this example illustrates is not restricted to names; it works just as well for any sort of vocabulary which might be excluded from

¹⁸Could the two-dimensionalist let ‘Mick Jagger exists’ lack a truth-value, rather than be false, at scenarios at which ‘Mick Jagger’ lacks a reference? This does not look like a promising reply, for two reasons. First, we want ‘Mick Jagger does not exist’ to be epistemically possible, which requires its being true in at least one scenario. But if this is true in at least one scenario, then presumably it is true at all scenarios at which the name lacks a reference. Second, as we’ll see below, the relevant point can be made without using existential claims involving a name.

scenarios. The point is this: for many expressions n , there will be some sentence S such that (i) any epistemic possibility in which S is true is one in which n lacks a reference, and so in which $\lceil n \text{ exists} \rceil$ is false, and yet (ii) $\lceil n \text{ exists} \rightarrow \neg S \rceil$ is clearly *a posteriori*. But (i) and (ii) are inconsistent with the conjunction of the Core Thesis and epistemic two-dimensionalism. If (i) is true, then any epistemic possibility in which $\lceil n \text{ exists} \rceil$ is true is one in which $\lceil \neg S \rceil$ is true, from which it follows that the material conditional $\lceil n \text{ exists} \rightarrow \neg S \rceil$ is true in every scenario. So, by the Core Thesis, it is *a priori*—which contradicts (ii).

If the foregoing line of argument is correct, another way of making the same point is that the sentence

- (5) Mick Jagger is the F , and there is someone else who is the G

will never be true at a scenario, since there is no scenario at which ‘Mick Jagger’ has a reference and one thing is F , while something else is G .¹⁹ It follows that (5) is not epistemically possible, and hence that its negation is *a priori*:

- (6) $\neg(\text{Mick Jagger is the } F \text{ and is not } G) \vee \neg \exists x Gx$.

This is a result that the two-dimensionalist should want to avoid. After all, the claim that (6) is *a priori* violates claim (A) above, about the *a priori*, since, if (6) is *a priori*, given knowledge that Mick Jagger is F but not G , one can know *a priori* that nothing is G . But this is surely a straightforward case of deducing *a priori* the nonexistence of something with certain properties from knowledge of the properties of something else, despite the fact that the relevant properties are independent.

How might the two-dimensionalist avoid commitment to the a priority of sentences like (4) and (6)? An initially promising reply is to block the parity reasoning for the conclusion that relative to the relevant scenarios, ‘Mick Jagger’ lacks a reference. Perhaps at least sometimes when we have two equally good candidates to be the reference of the name, the name refers to both candidates; in such scenarios, we might say, ‘Mick Jagger’ refers (as many names do) to two different people.²⁰ Though there clearly are cases of this sort of ‘divided reference’, the sorts of cases discussed above can be reformulated so as to rule out this possibility. One way of doing this is simply to build into the relevant sentence the claim that while the bearer of the F -properties is Mick Jagger, the bearer of the G -properties is not:

- (7) $\neg(\text{Mick Jagger is the } F) \vee \neg \exists x (Gx \ \& \ x \neq \text{Mick Jagger})$.

The view that in some scenarios of the sort discussed above ‘Mick Jagger’ has divided reference does not block the argument for the a priority of (7). As above, we can reason that ‘Mick Jagger’ refers to the F iff it refers to the

¹⁹Thanks to Ali Kazmi for pointing out that the example can be put in this way.

²⁰Thanks to David Chalmers for pointing this out.

G ; this gives us the conclusion that Mick Jagger can't be the F if the G is not Mick Jagger. But this is just what (7) says.²¹

Could the two-dimensionalist simply accept the conclusion that (7) is *a priori*? Again, not without rejecting claim (A) about the *a priori* above. If (7) is *a priori*, then, given the knowledge that Mick Jagger is F and that nothing else is Mick Jagger, one can deduce *a priori* that nothing is G . But this is, as above, an example of *a priori* knowledge of the nonexistence of something satisfying a certain condition on the basis of knowledge of the properties of something else.

So the two-dimensionalist should find a way to block the argument for the a prioricity of (7). With this aim, the epistemic two-dimensionalist might object that the foregoing argument overlooks a central feature of scenarios: the fact that they include indexical expressions, like 'I' and 'here'.²² When introducing the properties of Mick Jagger salient for me, the examples were indexical-free properties—but surely among the properties of Mick Jagger salient for me are 'indexical' properties, like the property of being featured on the first CD I ever owned, the property of being at a concert I attended in 1988, and so on. Perhaps we could use properties of this sort to break the parity between the bearer of F and the bearer of G in the relevant scenarios—perhaps, in at least some of these scenarios, the one who instantiates the relevant indexical properties is the referent of my use of 'Mick Jagger'.

Let ' I ' be a name for the conjunction of all of the indexical properties, in this sense, that I attribute to Mick Jagger. Then the present suggestion on behalf of the epistemic two-dimensionalist is that

- (8) Mick Jagger is the F & Mick Jagger is I & $\exists x (Gx \ \& \ x \neq \text{Mick Jagger})$

is, for all we have said so far, epistemically possible. If (8) is epistemically possible, then so is the negation of (7); after all, the latter is an *a priori* consequence of the former. But if the negation of (7) is epistemically possible, then (7) is not *a priori*; and this, for the reasons given above, is a result that the two-dimensionalist should welcome.

There are at least two problems with the appeal to indexical properties to block the argument for the a prioricity of (7). First, it seems that even if (8) breaks the relevant parity, it can easily be reinstated. Let the collection of indexical properties I be divided into two complex properties, I_1 and I_2 , such that every property in I is a part of either I_1 or I_2 . As with F and G above, I_1 and I_2 may have some elements in common; the important thing is that the two have roughly the same weight for me in determining the reference of 'Mick Jagger'. Then it looks like the following will be *a priori*:

- (9) $\neg(\text{Mick Jagger is the } F) \vee \neg(\text{Mick Jagger is the } I_1) \vee \neg\exists x (Gx \ \& \ x \neq \text{Mick Jagger} \ \& \ I_2(x))$

²¹Another way to 'stipulate away' the possibility of divided reference is to conjoin (5) with the claim 'There is at most one Mick Jagger'. The resultant conjunction still seems, contra the epistemic two-dimensionalist, to be epistemically possible.

²²Chalmers emphasizes that indexicals might be relevant to the assignment of reference to subsentential expressions with respect to a scenario in Chalmers [2006a: 93–4].

Suppose for *reductio* that (9) is false with respect to some scenario e . In that scenario, something will be $F \& I_1$, and something else will be $G \& I_2$. Accordingly, as above, there will be two equally good candidates to be the reference of 'Mick Jagger'; since, as above, we have in effect stipulated that this is not a case of divided reference, it will not be epistemically necessary that either is Mick Jagger. Hence 'Mick Jagger' will not have a reference with respect to e ; but then, contra our initial supposition, (9) cannot be false with respect to e after all. So (9) is true with respect to every scenario, and hence *a priori*.

As above, this result seems to violate claim (A) about the *a priori*. For, if (9) were *a priori*, we could, given the knowledge that Mick Jagger is $F \& I_1$ and that nothing else is Mick Jagger, know *a priori* that nothing exists which is $G \& I_2$. But the properties of being $F \& I_1$ and being $G \& I_2$ could clearly be independent, in the sense defined above.

It can also be shown that the epistemic two-dimensionalist who tries to argue against the a priority of (7) by using indexical properties is committed to rejecting claim (B) about the *a priori*. For consider the following claim:

- (10) $\neg(\text{Mick Jagger is the } F) \vee (\text{I bear no relevant relations of any sort to Mick Jagger}) \vee \neg\exists x (Gx \& x \neq \text{Mick Jagger})$

The idea was that (7) is not *a priori* because indexical properties block the assumed parity between the two potential referents of 'Mick Jagger'; so, if we stipulate that neither has any relevant indexical properties, the parity is again reinstated. So it looks as if the two-dimensionalist is committed to regarding (10) as *a priori*. Given this, the two-dimensionalist has to say that that, given the knowledge that Mick Jagger is F and that something which is not Mick Jagger is G , I can know *a priori* that I bear some relevant relation to Mick Jagger. That is, the following material conditional is *a priori*:

- (11) $\neg(\text{Mick Jagger is the } F \& \neg\exists x (Gx \& x \neq \text{Mick Jagger})) \rightarrow \text{I stand in some relevant relation to Mick Jagger.}$

But taking (11) to be *a priori* pretty clearly involves rejecting claim (B) about the scope of *a priori* knowledge.

There's an additional oddness here. Consider the sentence

- (12) $\neg(\text{Mick Jagger is the } F) \vee (\text{I bear no relevant relations of any sort to Mick Jagger}).$

This looks clearly *a posteriori*; after all, from the fact that I do bear some relevant relation to Mick Jagger, one can hardly deduce *a priori* that Mick Jagger is F . But it is very odd to think that (10) is *a priori*, and that (12) is not. For the idea is then that if I know

- (13) Mick Jagger is the F

I am in no position to know *a priori* that I stand in any relevant relations to Mick Jagger; but if we add to the knowledge of (13) the knowledge that

some other thing, which is not Mick Jagger, is *G*, I am then in a position to deduce *a priori* that I stand in some relevant relations to Mick Jagger. But how could knowledge about some other thing's being *G* make any difference?

This looks especially odd if we assume, as seems plausible, that I can know that I exist only *a posteriori*. It is presumably an *a priori* matter that if I stand in certain relations to Mick Jagger, I exist.²³ So it seems that we're forced into saying that if I know that Mick Jagger is *F*, and know that some other object, which is not Mick Jagger, is *G*, I am then in a position to deduce *a priori* from these two claims that I exist. So the material conditional

$$(14) \quad \neg(\text{Mick Jagger is the } F \ \& \ \neg\exists x (Gx \ \& \ x \neq \text{Mick Jagger})) \rightarrow \text{I exist}$$

But how could (14) be *a priori*? This looks like a violation of claim (C) about the *a priori* above.

A different sort of puzzling case results from taking into account two names which are such that the properties I associate with the two names overlap. For example, consider my use of the name 'Keith Richards'. As it happens, we can split the properties I associate with the name into two complex properties, one of which is the property *G* discussed in connection with Mick Jagger above:

member of the greatest band of the 1960s & one of the Glimmer Twins & born in Kent in 1943 & helped to organize the infamous concert at Altamont & ...

while the other is a distinct property *H* of the same sort. As above, it might well be that *F*, *G*, and *H* are independent properties. Suppose we know

$$(15) \quad \text{Keith Richards is the } G \vee \text{Keith Richards is the } H.$$

This is presumably *a posteriori*, as is

$$(16) \quad \text{Mick Jagger is the } F \ \& \ \text{I bear no relevant relations to Mick Jagger.}$$

But, given the above argument that (10) is *a priori*, we can know *a priori* that if (16) is true, nothing which is not Mick Jagger exists which is *G*. But then it follows that if we know just (15) and (16) along with the proposition that Keith Richards is not Mick Jagger, we are in a position to deduce *a priori* that Keith Richards is *H*. That is, the following is *a priori*:

$$(17) \quad (\text{Mick Jagger is the } F \ \& \ \text{I bear no relevant relations to Mick Jagger}) \rightarrow ((\text{Keith Richards is the } G \vee \text{Keith Richards is the } H) \rightarrow \text{Keith Richards is the } H)$$

²³Here I'm assuming that I can't stand in relations to things without existing; this would be denied by someone who endorses presentism without 'serious presentism', or actualism without 'serious actualism'. Thanks to Ben Caplan for pointing this out.

In other words, given some knowledge about Mick Jagger's properties, we're able to rule out *a priori* an otherwise epistemically possible hypothesis about Keith Richards's properties—even though the relevant properties are independent. But, as above, this seems odd (as well as a violation of claim (D) about the *a priori*); how could knowing some stuff about Mick Jagger put me in a position to decide between two conflicting hypotheses about what Keith Richards is like, if the properties attributed to Keith by either hypothesis are, in the above sense, independent of the known properties of Mick Jagger?²⁴

To sum up the argument so far: taking into account the possibility of divided reference, and taking into account indexical facts about my relation to objects, the two-dimensionalist still seems to be committed to the a-priority of (9), (10), (14), and (17). But treating these as *a priori* involves giving up each of claims (A), (B), (C), and (D) about the *a priori* above. This is a serious cost of adopting the view; it is hard to understand how *a priori* knowledge of a sort which falsifies (A)–(D) could be possible.

IV. Replies On Behalf of the Epistemic Two-dimensionalist

The two-dimensionalist might reply to the foregoing argument in one of three ways: he might try to find some assumption in the argument which he might reject; he might argue that the example of 'Mick Jagger' given above is special in some way which undermines the force of the argument; or he might argue that giving up claims (A)–(D) about the *a priori* is, while initially surprising, ultimately an acceptable consequence of the framework of epistemic two-dimensionalism.

It is hard to see how the first strategy might be carried out. The present argument does not turn on any strong metaphysical assumptions, and in particular does not turn on the haecceitistic assumption that identities of individuals in different possible worlds fail to supervene on the distribution of some favoured set of properties in those worlds. To see that there are no strong metaphysical assumptions involved, it is sufficient to note that the above argument works just as well for names for which the speaker has very simple rules for identifying the referent in different scenarios. Suppose that I associate the name 'Jupiter' with just two descriptions, to which I give equal weight: 'the 5th planet from the sun' and 'the largest planet in the solar system'. Then, by reasoning parallel to the above, it seems that the epistemic

²⁴Recall when indexical properties were introduced above, I suggested two ways to modify the argument against the two-dimensionalist: split the relevant indexical properties, or stipulate that there are no relevant indexical properties in the scenarios in question. (17) presupposes the latter way of running the argument; but we could generate a similar example just as easily using the 'split the indexical properties' form of argument. Suppose again that we split the relevant indexical properties of Mick Jagger into two equally weighted conjunctions of properties, I_1 and I_2 . Then it looks like the two-dimensionalist must regard the following as *a priori*:

$$(Mick\ Jagger\ is\ F\ \&\ I_1) \rightarrow ((Keith\ Richards\ is\ G\ \&\ I_2 \vee Keith\ Richards\ is\ H\ \&\ I_2) \rightarrow Keith\ Richards\ is\ H\ \&\ I_2)$$

This, like (17), is a violation of (D).

intension of ‘Jupiter’, for me, will deliver no reference at scenarios at which the 5th planet from the sun is not the largest planet in the solar system. Haecceitism is not required for there to be such a scenario—indeed, the existence of such a scenario is guaranteed by the epistemic possibility of ‘The 5th planet from the sun is not the largest planet in the solar system’. But it is surely false to say in this sort of case that I can know *a priori* ‘If Jupiter exists, then the 5th planet from the sun is the largest planet in the solar system’.

Further, this argument does not turn on the view that the epistemic intensions of vocabulary which is not semantically neutral can be thought of as rigidified descriptions, or indeed descriptions of any kind. We can agree that epistemic two-dimensionalism

simply requires that speakers have a conditional ability to determine the referent of *N* ... given relevant information about the character of the actual world and given idealized rational reflection.²⁵

All that matters to the present argument is the assumption, which seems clearly to be true, that those ‘conditional abilities’ will often be complex, in the sense that in at least some cases they will involve sensitivity to more than one aspect of a scenario. In any such case, we can imagine a description of scenarios in which the relevant cluster of abilities is ‘pulled in different directions’ in such a way that the epistemic intension of the relevant term will fail to yield a reference at those scenarios.²⁶

For the argument to go through—and for the relevant examples really to be violations of the claims about a prioricity listed at the outset—we need the assumption that the properties *F* and *G* really are independent, both of each other, and of the existence of Mick Jagger. But perhaps these assumptions about independence somehow beg the question against the epistemic two-dimensionalist; might this assumption, then, be rejected?

This is a dead end. The main problem is that this move commits the two-dimensionalist to claims about a prioricity which are at least as worrying as those he is trying to avoid. So, suppose that to make it seem less implausible that, for example, (17) is *a priori*, the two-dimensionalist might deny that the existence of Mick Jagger is independent of the existence of Keith Richards. But this would imply that one of the following conditionals is either necessary or *a priori*:

Mick Jagger exists → Keith Richards exists

Mick Jagger exists → ¬(Keith Richards exists)

²⁵Chalmers [2006a].

²⁶It is worth noting in this connection that the condition on scenarios given by the consequent of (4) and its descendants is a sufficient condition for the name to lack a reference, and not a necessary and sufficient condition. If it were a necessary and sufficient condition, then one could use this condition to formulate a description which picked out the same object as the name with respect to every scenario; so the assumption that we can provide a necessary and sufficient condition would, in a way, build in the assumption that the epistemic intensions of names are equivalent to descriptions. But in giving merely sufficient conditions for the name to lack a reference we make no such assumption.

Or the two-dimensionalist might deny that Mick Jagger and F are independent; but, in this case, one of the following conditionals would have to be necessary or *a priori*:

Mick Jagger exists $\rightarrow \exists xFx$

Mick Jagger exists $\rightarrow \neg\exists xFx$

None of these claims looks very attractive.²⁷

Might the two-dimensionalist plausibly reply to the argument by saying that the example of ‘Mick Jagger’ is in some way misleading? One possibility is that, since Mick Jagger is a well-known figure, we might be thinking of ‘Mick Jagger’ as a descriptive name, on par with the well-known example of ‘Julius’.²⁸ If so, then perhaps it is not so bad that (9) and (10), for example, come out *a priori*. But this move has little plausibility in the present case; though Mick Jagger is not an ordinary sort of person, my use of the name ‘Mick Jagger’ seems ordinary in all relevant respects. I associate some properties with the name, some of which are relations in which Mick Jagger and I stand; I’m less well acquainted with him than with the referents of many names that I use, but much more well acquainted with him than with the referents of others; all of this seems to be pretty much as it normally is with my use of names.

A different possibility is that I am a ‘deferential’ user of the name, in the sense that the reference of my use of the name is determined not by the properties I associate with the name, but rather by the reference of the name for certain other people in my linguistic community. It will follow that there is an *a priori* connection between the existence of Mick Jagger and the existence of a certain linguistic practice involving ‘Mick Jagger’. While it might be plausible to say this about some special cases, this does not seem like a plausible claim about the majority of the names we use.²⁹

A final response of a quite different sort on behalf of the epistemic two-dimensionalist is worth taking into account. The epistemic two-dimensionalist might simply accept the conclusions that the examples above, including (9), (10), (14), and (17), are *a priori*, and challenge our assumption that these

²⁷Further, the reply has no real plausibility. Normally, when we acquire knowledge that some object is F , this is *a posteriori*—we could not have discerned *a priori* from our previous knowledge of the object that it was, in addition, F —nor could we have known *a priori*, given the information that the object is F , that it also instantiated those other properties we know it to have. If so, then F is independent of those other properties. But given how commonplace this sort of property independence apparently is, could it really be impossible to split the properties of an object into two independent conjunctive properties which have equal weight in identifying the referent in various epistemic possibilities?

²⁸See Evans [1979].

²⁹See the discussion of deference in Chalmers [2002] and in §III of Schroeter [2005].

There is also a more radical strategy that the epistemic two-dimensionalist might pursue: he might simply give up the idea that names are barred from appearing in the canonical descriptions of scenarios. As noted above, this version of two-dimensionalist semantics will provide no help to those who would like the theory to underwrite inferences from certain sorts of epistemic possibility (conceivability) to metaphysical possibility. I think that there are further problems with this sort of view, but the issues are complex and deserve a fuller discussion than I can provide here.

conclusions are mistaken. She might argue as follows, focusing on the example of (10):

Consider the claim that if Mick Jagger is *F*, and I stand in no relevant indexical relations to Mick Jagger, there can't be something else, which is not Mick Jagger, which is *G*. Initially, it may sound odd to say that we can know this sort of thing *a priori*; but imagine what you would say if you found out that it is actually true that one thing is *F*, and something else is *G*. It seems plausible that you would say that one has as much claim to be Mick Jagger as the other, so that if one is Mick Jagger and the other isn't, that must be because there's some other relevant difference between them. So suppose instead you found that it is actually true that there is an *F* that is Mick Jagger. Could there then be some other object that is *G*, which is *not* Mick Jagger, and which otherwise differs from the *F* in no relevant respect? By the above line of reasoning, it seems not. But this just goes to show that it is plausible, after all, that upon learning that the antecedent of the above conditional is actually true, I can know, without knowing anything else about the world, that its consequent must also be true. And this means that it is plausible, after all, that the relevant conditional is *a priori*. Since this conditional is equivalent to (10), this also shows that (10) is *a priori*.

If this line of reasoning were convincing, what it would show is that sentences like (10) are such that, whatever non-name-involving information we are given about a scenario, we invariably would judge (10) to be true of that scenario.³⁰ But the slide from this claim to the conclusion that (10) is *a priori* is far from innocent and indeed is, in a way, precisely what is at issue. The question is whether we can conclude, on the basis of the claim that a sentence is epistemically necessitated by every (neutrally described) scenario, that it is *a priori*. If you think that claims (A)–(D) about *a priori* knowledge are plausible, it is this inference—and hence the epistemic two-dimensionalist way of thinking about a prioricity—that you should reject.

This is a crucial point. To determine whether some material conditional $\lceil p \rightarrow q \rceil$ is *a priori*, we ask:

- (i) Does the knowledge that *p* is the case put one in a position, without any further information, to know that *q* is the case?

To determine whether such a material conditional has a necessary epistemic intension, we ask:

- (ii) Is any information, stated without use of names or other non-semantic-neutral expressions, which is sufficient to know that *p* is the case also sufficient to know that *q* is the case?

It should be uncontroversial that (i) and (ii) are distinct questions, and that the project of understanding a prioricity as necessity of epistemic intension can succeed only if (i) and (ii) always get the same answer.

³⁰I doubt that we get even this result, since I'm not convinced that I understand what I am supposed to be doing when I try to identify Mick Jagger in a scenario. But I grant the point for purposes of argument—and many people do seem to understand what we are supposed to be doing in this sort of case.

The sentences considered above are, in effect, examples of material conditionals which are such that the answer to question (i) appears to be 'No'. To see why this seems to be the right verdict about (10), imagine that you come to know that Mick Jagger is *F*, but not *G*, and ask whether you are then in a position to know, without any further information, that nothing else is *G*. It seems that you are not, because it seems clear that you might entertain the possibilities that some non-Mick thing is *G*, and that nothing is *G*, and say of each: 'for all I know, that's the way things are'. This is strong evidence that the answer to question (i), asked about (10), is 'No'.

But if the argument above is correct, then the answer to question (ii), asked about (10), is 'Yes': (10) has a necessary epistemic intension. If this is right, then (10) is a plausible example of a sentence with respect to which questions (i) and (ii) deliver different answers, and hence a plausible counterexample to the view that a prioricity is possession of a necessary epistemic intension. One might, of course, want to find a flaw in the argument that the answer to question (ii) in this case is 'Yes', or resist the view that the answer to question (i) in this case is 'No'. The present point is just that one cannot plausibly argue that the answer to question (i) in this case is 'Yes' *because* the answer to question (ii) in this case is 'Yes'. After all, the possibility of there being a divergence between answers to these two questions just is the main point of difference between opponents and proponents of epistemic two-dimensionalist views of the *a priori*.

It remains open to the epistemic two-dimensionalist to claim that the property of having a necessary epistemic intension is an epistemologically interesting property, or even that the traditional concept of a prioricity is incoherent, and should be replaced with the property of having a necessary epistemic intension. But in the light of the above examples, the claim to have provided a view of *a priori* knowledge which captures the traditional philosophical notion seems to me difficult to sustain.³¹

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References

- Boghossian, Paul 1997. What the Externalist Can Know A Priori. *Proceedings of the Aristotelian Society* 97/2: 161–75.
- Caplan, Ben 2005. Against Widescopism. *Philosophical Studies* 125/2: 167–90.
- Chalmers, David 1996. *The Conscious Mind: In Search of a Fundamental Theory*, New York: Oxford University Press.
- Chalmers, David 2002. The Components of Content, in *Philosophy of Mind: Classical and Contemporary Readings*, ed. David Chalmers, New York: Oxford University Press: 608–33.
- Chalmers, David 2004. Epistemic Two-Dimensional Semantics. *Philosophical Studies* 118/1–2: 153–226.
- Chalmers, David 2006a. The Foundations of Two-Dimensional Semantics, in Garcia-Carpintero and Maciá [2006], 55–140.
- Chalmers, David 2006b. Two-Dimensional Semantics, in *The Oxford Handbook of the Philosophy of Language*, ed. Ernest LePore and Barry C. Smith, Oxford: Oxford University Press.
- Chalmers, David ms. The Nature of Epistemic Space, URL = <<http://consc.net/papers/espace.html>>

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- Dummett, Michael 1981. *The Interpretation of Frege's Philosophy*, Cambridge, MA: Harvard University Press.
- Evans, Gareth 1979. Reference and Contingency. *The Monist* 62/2: 161–89.
- Evans, Gareth 1981. Understanding Demonstratives, in his *Collected Papers*, 291–321, Oxford: Oxford University Press.
- García-Carpintero, Manuel 2006. Two-Dimensionalism: A Neo-Fregean Interpretation, in García-Carpintero and Maciá [2006], 181–204.
- García-Carpintero, Manuel and Josep Maciá, eds, 2006. *Two-Dimensional Semantics*, New York: Oxford University Press.
- Jackson, Frank 1998. *From Metaphysics to Ethics*, New York: Oxford University Press.
- McDowell, John 1977. On the Sense and Reference of a Proper Name. *Mind* 86/342: 159–85.
- Plantinga, Alvin 1978. The Boethian Compromise. *American Philosophical Quarterly* 15/2: 129–38.
- Schroeter, Laura 2005. Considering Empty Worlds as Actual. *Australasian Journal of Philosophy* 83/3: 331–47.
- Soames, Scott 1998. The Modal Argument: Wide Scope and Rigidified Descriptions. *Noûs* 32/1: 1–22.
- Soames, Scott 2002. *Beyond Rigidity: The Unfinished Semantic Agenda of Naming and Necessity*, Oxford: Oxford University Press.
- Soames, Scott 2005. *Reference and Description: The Case Against Two-Dimensionalism*, Princeton, NJ: Princeton University Press.
- Soames, Scott 2007. Actually. *Aristotelian Society Supplementary Volume LXXXI*: 251–77.
- Sosa, David 2001. Rigidity in the Scope of Russell's Theory. *Noûs* 35/1: 1–38.
- Stalnaker, Robert 1978. Assertion. *Syntax and Semantics* 9: 315–32.