THE TWO-DIMENSIONALIST *REDUCTIO*

BY

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Abstract: In recent years two-dimensional semantics has become one of the most serious alternatives to Millianism for the proper interpretation of modal discourse. It has origins in the works of a diverse group of philosophers, and it has proven popular as an interpretation of both language and thought. It has probably received most of its attention, however, because of its use by David Chalmers in his arguments against materialism. It is this more metaphysical application of two-dimensionalism that is the concern in this paper. For though there is probably something salvageable from two-dimensionalism as a way to explain the content of thought, as a metaphysical tool it should be abandoned. In this paper I aim to establish this point by *reductio*: if 'metaphysical' two-dimensionalism is assumed, it can be shown to be false.

In recent years two-dimensional semantics has become one of the most serious alternatives to Millianism for the proper interpretation of modal discourse. It has origins in the works of a diverse group of philosophers, and it has proven popular as an interpretation of both language and thought.[1] It has probably received most of its attention, however, because its use by David Chalmers in his arguments against materialism.[2] It is this more metaphysical application of two-dimensionalism that is the concern in this paper. For although there is probably something salvageable from two-dimensionalism as a way to explain the content of thought, as a metaphysical tool it should be abandoned. In this paper I aim to establish this point by a sort of *reductio*: if 'metaphysical' two-dimensionalism is assumed, it can be shown to be false, and any move that might avoid this result makes two-dimensionalism of little dialectical use in metaphysical debates.

Since Chalmers uses two-dimensionalism for metaphysical ends more, perhaps, than any other philosopher, it is his system that I will discuss and use for the *reductio*. It should be clear that other versions with comparable metaphysical power will be subject to my argument *mutatis mutandi*.

Chalmers primarily uses two-dimensionalism to reestablish the link between *a priority* and necessity that had apparently been severed by Kripke's famous arguments for the necessary *a posteriori*.[3] By doing this, he hopes to re-forge the connection between conceivability and possibility, vindicating one of philosophy's most important metaphysical tools.[4] The strategy can be explained using the hallowed identity 'Water is H_2O.'

Water, it turns out, is H_2O, but it certainly seems that things could have been otherwise: we can imagine a world where water was xyz. So, given that conceivability is a good guide to possibility, we should conclude that it is possible that water not be H_2O. Not so, says Kripke. Identities are necessary, so if water is H_2O, a world without H_2O is a world without water. If we are ignorant of the identity of water and H_2O (or ignorant of the necessity of identities) then we can perhaps conceive of a world where water is something else, but this is not indication of its possibility. 'Water is H_2O' is an *a posteriori* necessity. Its being *a posteriori* is an epistemological fact about how the truth can be known – it cannot be known by reflection on the concepts involved, but must be discovered by empirical investigation. Its being necessary is a metaphysical fact that stems from the necessity of identities and facts about the actual chemical constitution of water. In general, whether or not a proposition is true in all possible worlds is an independent issue from the way in which that truth can be known.

So the Kripkean story goes, and so a traditional philosophical tool finds itself imperiled: conceivability no longer seems a particularly good guide to possibility. In particular, conceiving of a situation fails to indicate its possibility when that conception is underinformed about the actual nature of the relevant things. Since this is surely the case with many of our conceptions, the necessary *a posteriori* constitutes a rather serious constraint on the import of conceivability.

Enter two-dimensionalism. According to two-dimensional semantics Kripke's point is ultimately a point about language, and it need not be taken in such a way that the conceivability-possibility link is severed. The necessary *a posteriori*, says the two-dimensionalist, occurs at the level of *statements*. 'Water is H_2O' is an example of the necessary *a posteriori* because it is associated with two different propositions. In Chalmers' terminology, it has a primary intension and a secondary intension. The primary intension is, loosely speaking, the mode of presentation of the secondary intension. As such, the primary intension is epistemically individuated, allowing the subject to determine its extension based upon *a priori* reflection. More specifically, the primary intension is the meaning

of the statement gotten by considering a range of worlds as candidates for the actual one. It is the sense of the statement that is false in worlds where the watery stuff (the stuff in lakes, rivers and swimming pools) is xyz, but it is true in all worlds where that stuff is H_2O. The secondary intension is the meaning of the statement gotten by its truth value in worlds considered counterfactually, taking both the semantic and the non-semantic facts in the actual world as fixed. In other words, it is what the Kripkean would consider the content of the statement, and the sense in which the statement is true in all worlds, xyz or otherwise. The primary intension is what determines whether a statement is *a priori* or *a posteriori*, and the secondary intension is what determines whether a statement is necessary or contingent. Statements that are necessary *a posteriori*, like 'water is H_2O,' thus have a contingent primary intension but a necessary secondary intension.

So far the view appears to be innocuous. The metaphysical payoff comes when the two-dimensionalist adds that as long as the primary and secondary intensions are carefully distinguished, one can infer possibility from conceivability. One way to make this clear is to posit two 'senses' of conceivability and possibility at the level of statements. To say that a statement is conceivable$_1$ is to say that one can conceive of a possible world where the primary intension is true, and to say that a statement is conceivable$_2$ is to say that one can conceive of a world where the secondary intension is true.[5] To say that a statement is possible$_1$ is to say that there is a possible world where the primary intension is true, and to say that it is possible$_2$ is to say that there is a possible world where the secondary intension is true. (Note that 'possible' and 'conceivable' are used in the *definientia* without subscripts. This is because at the level of *propositions* conceivability and possibility are univocal. The subscripts just indicate which intensions are in the scope of the conceivability/possibility operators when they are applied to statements with two dimensions of meaning.) So long as one only infers possibility$_2$ from conceivability$_2$ and possibility$_1$ from conceivability$_1$ there are no counterexamples to the validity of conceivability-possibility inferences. Counterexamples arise only when we conclude from the conceivability$_1$ of S that it is possible$_2$. This is what the Kripkean thought experiments warn against: from the fact that we can conceive of its having turned out that watery stuff is not H_2O we cannot conclude that there are worlds where water is not H_2O. We can, however, conclude – by conceiving of the falsity of the primary intension – that there are worlds where watery stuff is not H_2O. The moral of the story, according to the metaphysical two-dimensionalist, is that conceivability does deliver real possibilities, but one must make sure to describe those possibilities correctly, using the primary intensions (the intensions one is using in one's conception) and not using the secondary intensions.

This two-dimensional framework delivers when it comes to Cartesian-style conceivability arguments. It looks as though we can conceive of

there being worlds that are physically indiscernible to ours yet lack pains.[6] Even if it appears that in this world pains are intimately related to C-fibers firing, we can no longer dismiss the import of the conceivability intuitions. For just as we are conceiving of a real possible world when we conceive of water's not being H_2O (namely a world where watery stuff is not H_2O) we are conceiving of a real world when we conceive of pain's not being C-fibers firing. What world is that? It is the world where the painful stuff does not pick our C-fibers firing. But this is just a possible world where there are C-fibers without pain. If there are such worlds, then pain states are not in fact identical with C-fiber states and the identity thesis is false.

Two-dimensionalism proves a powerful modal weapon indeed. The key metaphysical move is in the assumption that there must be worlds to satisfy our primary intensions. Since primary intensions are inextricably linked to the particular ways in which we conceive of the world – they are epistemically individuated – this move amounts to tying the space of possible worlds to our ways of thinking. Any view that combines two-dimensionalism with the view that there are always metaphysically possible worlds that make coherent primary intensions true is what I call *metaphysical two-dimensionalism*. It is metaphysical because it goes beyond the semantic view that some statements express a pair of propositions, to include the metaphysical view that the space of possible worlds is not outstripped by the 'worlds' that our conceptual repertoire allows us to conceive. In other words, for metaphysical two-dimensionalism, every conceivable world is metaphysically possible. In other words, sentences that seem to express conceivable scenarios that are nonetheless metaphysically impossible – such as 'water is not H_2O' – must have a primary intension that is true in some metaphysically possible world, even if the secondary intension is false in every possible world.

Metaphysical two-dimensionalism thus establishes an incredibly strong tie between the space of possible worlds and our conceptual capacities. The tie seems too strong if we are going to be realists about possibilities.[7] Nevertheless, it would be nice to have a counterexample to the theory. The very statement of two-dimensionalism provides a recipe for creating one sort of counterexample: find a sentence that expresses a coherent scenario that does not have a primary intension that is true in any possible world. It is difficult to do this without begging any questions, so metaphysical two-dimensionalism can seem a safe bet. There is, however, another, overlooked strategy for developing a counterexample to metaphysical two-dimensionalism: find a sentence that expresses a coherent scenario, but that entails the falsity of metaphysical two-dimensionalism if either the primary intension or the secondary intension of the sentence is true in any metaphysically possible world. It is this strategy that I will pursue, with the result that the commitments of metaphysical two-dimensionalism in fact undermine one of its own presuppositions.

The general argument is simply that we can conceive of scenarios obtaining which entail the falsity of metaphysical two-dimensionalism. In particular, the following is surely conceivable:

(SN)   The space of metaphysically possible worlds is more limited than the space of conceivable worlds.[8]

By vindicating the inference from conceivability to possibility, metaphysical two-dimensionalism allows us to conclude from the conceivability of SN that it is possible. Since SN is a statement about the whole of logical space, however, it is a necessary truth if it is a truth at all. But if a necessary truth is true in any possible world, then it is true in all possible worlds and is therefore true in the actual world.[9] So, two-dimensionalism allows us to conclude SN is true. But if SN is true, conceivability does not entail possibility, so metaphysical two-dimensionalism is false.

That is the general story behind the *reductio*, but the complexities of two-dimensionalism make matters a bit messier. Spelling out the premises will help sharpen the argument:

1.   If metaphysical two-dimensionalism is true, the conceivability$_1$ of a statement's truth entails its possibility$_1$.
2.   SN is conceivable$_1$.
3.   If metaphysical two-dimensionalism is true, SN is possible$_1$.
4.   If SN's primary and secondary intensions coincide, SN's being possible$_1$ entails that SN is possible$_2$.
5.   SN's primary and secondary intensions coincide.
6.   If SN is possible$_2$, SN is true.
7.   If SN is true, metaphysical two-dimensionalism is false.
8.   If metaphysical two-dimensionalism is true, it is false.

A few of the moves in the argument need clarification, beginning with premise four. Recall, to say that a statement is possible$_1$ is just to say that its primary intension is possible, and to say that it is possible$_2$ is just to say that its secondary intension is possible. If a statement's primary and secondary intensions are the same, then, one can obviously infer from its being possible$_1$ that it is possible$_2$: they constitute the same possibility.

The natural question, then, concerns premise five. Why say that the two intensions must coincide? The reasoning behind premise five is that SN, if true, is necessary (since it is a statement about the whole of logical space) as well as *a priori*. (If it was *a posteriori*, one wonders how it could be empirically established. It is certainly treated as an *a priori* falsehood by the two-dimensionalists.) If a statement is necessary *a priori*, its truth across possible worlds considered as counterfactual and as actual should coincide, because its truth requires no contribution from any particular

world. Primary and secondary intensions come apart in the water case, since which world is actual matters to the evaluation of necessary truths concerning water. That is why the necessities there are *a posteriori*. In the case of *a priori* truths, by hypothesis one doesn't need to find out which world is actual in order to evaluate them. Given the way primary and secondary intensions are defined, therefore, they should coincide when it comes to the necessary *a priori*. So, premise five follows from the modal and epistemological nature of SN and the definitions of primary and secondary intensions.[10]

But then the conclusion is not far behind: from the conceivability of SN, we can conclude its possibility in all relevant senses, and since it is a necessary truth, its possibility entails its truth. But if SN is true, meta-physical two-dimensionalism is false. Only if SN is false can we be guaranteed that there is a world corresponding to the truth of our primary intensions. If SN is true, therefore, there is no entailment from the conceivability of the primary intension to its possibility, and metaphysical two-dimensionalism is shown false under its own light.

There is no mystery about where the two-dimensionalist will wish to stand his ground. He will no doubt deny 2, maintaining that we are not really conceiving of SN in a strong enough sense.[11] Two-dimensionalists will want to distinguish between types of conceivability, not all of which yield possibility. For example, given our epistemic limitations, we can no doubt conceive of the falsity (or the truth) of Goldbach's Conjecture. But no one wants to conclude from this level of conceivability that it is possibly false (or true) – if it is false it is necessarily false, so if it is possibly false it is false. It is open to the two-dimensionalist to say that conceiving of the truth or falsity of SN is like this – only weakly (or '*prima facia*') conceivable.[12]

The claim that SN is not 'ideally' conceivable is an invitation to a rather frustrating debate involving what amounts to little more than intuitional hearsay. One person can insist that they are conceiving of a possibility, only to be set straight by their opponent who claims that their conception is only *prima facie*. Despite a sense that this dialectical dance is one that should be declined, I must say that it is not clear that we cannot conceive of the possibility of SN in a strong enough manner. SN is made true by a situation in which what is possible has no necessary connection to what we can conceive, and our particular access to the facts allows us to conceive of situations that are in fact impossible. SN is made true, for example, by the situation described by Colin McGinn in which we are cognitively closed with respect to some properties.[13] It is also verified by the possibility suggested by Brian Loar and others that due to the distinct functions of phenomenal concepts and scientific concepts they can have the same extensions even if we cannot realize that fact *a priori*.[14] In other words, it seems no more challenging to conceive of the truth of

SN than it is to imagine that we are conceptually limited in important ways.

Despite this, the two-dimensionalist is surely not left speechless. The person who conceives of the possibility of SN might simply fail to be conceiving ideally. Chalmers (1999) and (2002) in effect makes this argument when considering Yablo's (1999) 'metamodal' argument. Yablo argues that since a necessary god is conceivable, two-dimensionalism would show that it is actual, which is intuitively a result that is too strong to swallow. Chalmers responds:

> A god's existence may be conceivable, but to conceive of a god's necessary existence is much harder, especially given its conceivable nonexistence. In effect, one must conceive (metamodally!) that conceivability does not entail possibility. But it is not clear that this is more than prima facie negatively conceivable. On my view, it is a priori, if nonobvious, that conceivability entails possibility (see below for the sketch of an a priori argument). If so, then the denial of the entailment is not ideally conceivable, and so neither is the necessary existence of god.[15]

Chalmers will presumably, then, simply deny that SN is ideally conceivable as well, even if it is *prima facie* conceivable.

While the distinction between *prima facie* conceivability and a stronger, *ideal* sort of conceivability does provide a life raft for the two-dimensionalist, he can take it only at the cost of scuttling his dialectical ship. This is so for two reasons. First, one wonders how 'ideal conceivability' can be defined. One suspects that it will receive a rather circular definition: conceivability is ideal iff it tracks possibility. If anything like this is the case, the two-dimensionalist has simply replaced the old gap between conceivability and possibility with a new gap between *prima facie* conceivability and ideal conceivability. Two-dimensionalism aimed to vindicate the inference from conceivability to possibility. If it does so only by questioning the inference from *prima facie* conceivability to ideal conceivability – an inference which in the end seems every bit as substantive as the original inference from conceivability to possibility – the two-dimensionalist has left us back where we started, with only the appearance of progress.

The two-dimensionalist's reliance on the claim that we are not really conceiving of SN endangers his program in another, perhaps more important way. If our conception of the truth of SN is really parallel to our conception of the truth of Goldbach's conjecture or the existence of a necessary god, it is presumably because in neither case do we really comprehend what it is for these propositions to be true. It only seems that we are conceiving of their truth, in other words, because we do not really understand what it is we are conceiving. If this is the case, however, then the two-dimensionalist is defending his position by claiming that we don't really understand one of its key presuppositions! Since we should not

accept positions we do not understand, the two-dimensionalist is replacing a reason to reject his position with a reason not to accept it. Put in another way, if SN really is like Goldbach's conjecture in that we cannot grasp it well enough to form a robust conception of its truth or falsity, then it seems we should not employ a system that presupposes SN's falsity any more than we should rely on mathematical results that presuppose the falsity of Goldbach's conjecture. Thus, even if the metaphysical two-dimensionalist avoids a straightforward *reductio*, he only does so by admitting that two-dimensionalism is too shaky a tool to be used.

This point can be made more specific by considering the particular use of two-dimensionalism to establish dualism. There is something dialectically suspect about maintaining that SN is any less conceivable than worlds where C-fibers fire and yet there are no pains. Just as there is no contradiction in imagining the latter, there is no contradiction in imagining the former. If there is a possibility that our conceptions are faltering in the former case, it seems just as likely that they are faltering in the latter case. SN and Zombie worlds seem on par in this respect. But if this is the case, then one's confidence that Zombie worlds are conceivable should be in direct proportion to one's confidence that conceivability is not necessarily a good guide to possibility.

Chalmers does, of course, claim to have an *a priori* argument that ideal conceivability entails possibility.[16] In particular, he claims:

When one looks at the purposes to which modality is put (e.g. in the first chapter of Lewis 1986), it is striking that many of these purposes are tied closely to the rational and the psychological: analyzing the contents of thoughts and the semantics of language, giving an account of counterfactual thought, analyzing rational inference. It can be argued that for a concept of possibility and necessity to be truly useful in analyzing these domains, it must be a rational modal concept, tied constitutively to consistency, rational inference, or conceivability.[17]

A full commentary on the argument that follows would extend beyond the scope of the present paper, but a few points here can show that this argument cannot save two-dimensionalism.[18] For one thing, according to Chalmers' own very high standards of inconceivability, finding something inconceivable must mean that one can eventually derive a contradiction based on its supposition. Now, for this a priori argument to work against SN, the negations *both* of the following two propositions must lead to a contradiction. 1) 'for a concept of possibility and necessity to be truly useful in analyzing' the contents of thought, etc., 'it must be a rational modal concept' tying conceivability to possibility, and 2) the concept of possibility and necessity that should be used when doing metaphysics is such a concept of possibility and necessity. It is very unlikely that the negation of either 1) or 2) will lead to a contradiction under even ideal

scrutiny, but it is certainly the case that such has not been shown by Chalmers. At best he has shown that the final picture of modal discourse is unlovely if 1 and 2 are denied. This is not, however, the standard for inconceivability offered by Chalmers, and if it is, then those of us who find epiphenomenal dualism a terribly unlovely picture of the world might have serendipitously stumbled upon a new argument against it.

The result is that SN is conceivable and two-dimensionalism either undermines itself, or it proves to be of little use in the metaphysical debates in which it is employed. The conclusion is familiar: it is a mistake to tie the metaphysical too closely to the epistemological. Such verificationist theses are apt for self-refutation. The metaphysical two-dimensionalist thesis tying conceivability to possibility constitutes a sort of modal verificationism, and it proves no exception to that rule. Metaphysical two-dimensionalism should therefore be rejected.[19]

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NOTES

[1] Early sources include Stalnaker, 1978; Evans, 1979; Davies and Humberstone, 1980. While much of two-dimensionalism seems non-Kripkean, there are interpretations of Lecture III in Kripke, 1980 that make him sound two-dimensionalist. On this issue, see Soames, 2005.

[2] See Chalmers, 1996, but also Jackson, 1998.

[3] In Kripke, 1980.

[4] See Chalmers, 2006 for a nice statement what he sees as the overall strategy.

[5] See Chalmers, 2002 for this way of putting things.

[6] See Chalmers, 1996.

[7] My statement of this point echoes that of Yablo, 1993, 2000 and Hill and McLaughlin, 1999.

[8] I call this SN because it basically maintains that there are what Chalmers (1996 and 1999) calls 'strong necessities.'

[9] This argument depends on the assumption that the world w in which SN is true is possible from the actual world, and that every world possible from w is also possible from w. S5 conforms to these assumptions, and since two-dimensionalism itself presupposes S5 and would affirm these accessibility relations, the reductio's assumptions should be valid in this context. Thanks to an anonymous referee from this journal for helping me clarify this matter.

[10] Jackson's (1998) explanation of his version of two-dimensionalism confirms premise five; see pp. 50–52. Chalmers (1996) would seem to be committed to the premise as well, though that depends, I think, on how much work 'centered possible worlds' do in constructing the primary intension; see pp. 62–65. Soames (2005) also argues for a similar premise; see ch. 9, for example.

[11] Chalmers does this, in essence, in Chalmers, 1999. There is a possibility that the two-dimensionalist will deny five, but this would be to abandon the original notions of primary and secondary intentions, and in the end, the result is the same: he is defending his argument by maintaining that we do not understand one of its main presuppositions.

¹² Chalmers (2002) makes various distinctions among types of conceivability, and the 'prima facia' designation is his own. Van Cleve (1983) and Yablo (1993) make similar distinctions.

¹³ McGinn, 1989.

¹⁴ Loar, 1997 and Hill, 1997. Note that one need not think Loar and Hill's views are plausible to agree with what I am saying. One only needs to think that something like what they depict is conceivable. Thus Chalmers' (1999) complaint that they have not provided an explanation of how their view works is not necessarily a problem for what I am saying.

¹⁵ Chalmers, 2002, p. 189.

¹⁶ This is alluded to in the passage quoted above, and is spelled out in both his 1999 and his 2002.

¹⁷ Chalmers, 2002, p.193.

¹⁸ I discuss Chalmers' argument more fully in Howell, forthcoming.

¹⁹ Many thanks to Brad Thompson, Torin Alter, Doug Ehring, David Chalmers, and my colleagues at SMU. A previous version of this paper was given at the 2007 Central APA, and my thanks go to my commentator Brendan Murday and the participants in that session. Finally, many thanks to the NEH seminar on Mind and Metaphysics led by John Heil at Washington University in St. Louis. Comments from Heil and the participants of that seminar were particularly invaluable.

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