HUMBLE PRIMARY INTENSIONS: FIXING TWO-DIMENSIONAL SEMANTICS

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ABSTRACT. Certain problems with standard two-dimensional semantics are addressed and cases in which these problems arise explored. In such cases the primary intension cannot be univocally mapped in one and only one indexical world, thus standard two-dimensional semantics cannot efficiently address the problems presented. Subsequently, a modified model is presented which leads these problems to be averted in the replicated cases. This modified model admits primary intensions that are not univocally mapped. The conclusion discusses the advantages and disadvantages of the modified model and analyzes its possible consequences for the philosophy of mind.

Keywords: Two-Dimensional Semantics, Primary Intensions, Philosophical Zombies, Epistemically Indistinguishable

1. Introduction

How should one account for the linguistic use of phrases such as, “Russia might not have been the largest country in the world”, even when the largest country in the world is Russia? We cannot say that the quote means Russia might not have been Russia. However, it does have a meaning. As many philosophers would agree, the statement roughly indicates that the object we refer to when we speak of Russia is an object of this world, which, when considered counterfactually – as all the things it could have been in other possible worlds – might not have been the largest country in at least one of these worlds. One of the main formalizations of the solution to this dilemma is known as two-dimensional semantics. We say that Russia has a two-dimensional meaning. One is the function which maps “Russia” in our world – the indexical world, the world to which we belong – called primary intension; one is the class of functions which maps "Russia" in all other possible worlds, called secondary intension.

Secondary intensions may appear as improbable ideas. Accordingly, some would find the notion that something belongs to other possible

worlds imaginative; useful in fiction but not in philosophy. Conversely, primary intensions always appeared much better behaved, since we ought to have the right to make expressions about our own world. Primary intensions, however, are arrogant foes indeed. Under what grounds would we have the right to isolate only one world and then map entities on only this particular world? We would indeed have to possess extremely fine grained information about our placement in the vast realm of possible worlds.[1] If we cannot have all the relevant knowledge which would be true in one and only one possible world, how can we single out only one of them as indexical? We must ascribe indexicality to all the worlds in which what is both believed and true would in fact obtain, that is be true. But if, behaving humbly, we do so, then how can the primary intension be just one function and not a class of functions on all the worlds that could be indexical?

Enquiring more generally, how can we presume that we can speak of one indexical world and select an object in that world in a univocal fashion? Who gave us the power to choose the indexical world from among all the other epistemically indistinguishable worlds? Who filled us with the necessary divinity to track the untraceable and find the identical hay in the haystack? Can we subscribe to a more humble theory of primary intensions and continue to account properly for counterfactuals? After a brief introduction to standard two-dimensional semantics, a problem case will be presented in which these enquiries will be enacted, revealing faults with this standard model. A modified model where those faults do not arise will be introduced and its consequences for David Chalmer's arguments against physicalism will be explored.

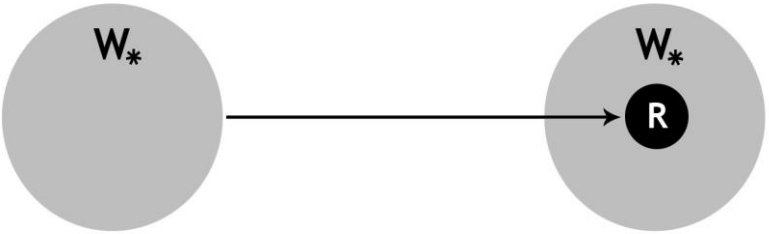
2. Two-Dimensional Semantics

In Chalmers (2006),[2] two-dimensional semantics is summarized as the concept whereby meanings are intensions divided into two dimensions. One is a function mapping entities in our world (primary intension) and one is a class of functions mapping these same entities on other worlds (secondary intension). According to this framework, when we say, “Russia might not have been the largest country in the world”, we are using the secondary intension of the word ‘Russia'. This claim is therefore true because it is logically possible to have a country larger than Russia. Hence, there are possible worlds in which Russia is not the largest country in the world and since the sentence is true in that world, it is true for the secondary intension of Russia. When we say, “Russia is the largest country in the world,” we are using the primary intension, and this claim is true because, in the world in which we live (the indexical world), there is not

any country larger than Russia. When using the secondary intension, we establish another possibility because we are referring to Russia in many other possible worlds; we are allowing mappings across unbounded worlds without constraining such mapping to our own specific world. When using the primary intension, we make a univocal statement about only one specific world (or centered world) – our own.

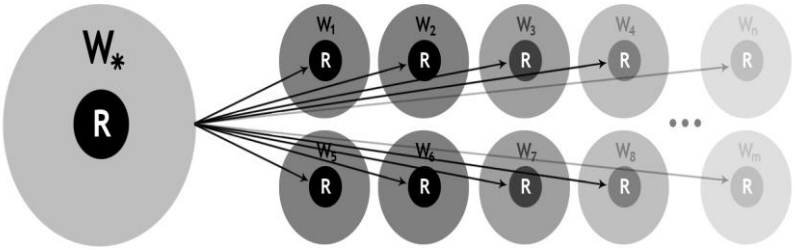
Chalmers (1996) suggests that the primary and secondary intensions correspond to functions as follows. The primary intension is a function from the possible world where the individual is located (W_*) to the referent (R). That is, it maps a whole possible world to a subset of itself, called the referent:

$$f_1 : W_* \rightarrow R$$



After the primary intension is fixed, the secondary intension will map this same referent on the image of the primary intension but on all other possible worlds. Therefore, it will be equivalent to a family of functions from the ordered pair of indexical world and possible worlds (W_*, W_n) to the referent (R), which is now a subset of each possible world:[3]

$$f_2 : (W_*, W_n) \rightarrow R$$



3. The problem

In this paper, I argue against the position held by most classical two-dimensionalists that the indexical world in which the reference is fixed is

only one. It will be argued that since we cannot single out only one indexical world out of all equally epistemically indistinguishable worlds, the primary intension cannot be univocal. For instance, there may be, in fact, two largest countries in our world. We can conceive the logical possibility that our own world contains a hidden country as large as Russia as well as the possibility it does not contain such country. Both these worlds are indistinguishable under incomplete information, both of them must be equally our own, and there shall be one primary intension's function mapping the referent in each one of them. The primary intension cannot arbitrarily choose one of them rather than using both. Therefore, Russia's primary intension shall be not only one mapping but be one mapping for every possible epistemically indistinguishable indexical world. The primary intension cannot map the one and only indexical world to Russia *simpliciter*, for there is more than one possibility for the indexical world. In essence, then, there are too many uncertainties about which is our indexical world to enable univocal mappings on it.

4. The problem case

The example of an unknown country as large as Russia reveals that there may be a problem with the necessary univocality of primary intensions. However, the example reveals little about how this problem arises inside the conceptual framework of two-dimensional semantics and little in relation to the type of solution to the problem. Thus, another more elaborate case is needed.

First, consider the following thought experiment. A physical description of Kurt Gödel is given to an individual named Joey, and he is also told that Gödel is the philosopher who formulated the incompleteness theorems; taken together these will be Gödel's description composing his intension. Joey is placed in one possible world and asked to identify Gödel. If this is a world in which someone fits Gödel's description, then Gödel's primary intension will map the most Gödel-like object – the entity which most accurately fits the description given – that belongs to the possible world in question. The most Gödel-like object of a world will be denoted by G_j, in which j is the index of the possible world, and the property of being the most Gödel-like object that Joey can find will be called by "Gödelity" for brevity. When Joey makes counterfactual statements about Gödel, he will use the fixed G_j as a reference. That is, when he says that Gödel might have formulated Tarski's semantical conception of truth, he will be talking about this same fixed G_j but in a possible world in which Gödel formulated that concept. However, bear in mind that depending on which world Joey is

placed in, the primary intension will map a different G_j that can possess a diverse set of properties as long his Gödelity is preserved. G_j can vary in diverse ways. Some of them proved the *completeness* theorems, whereas others did not. In one, the Gödel-like entity might have died of starvation, whereas, in another, it might have died in a car accident. If it is guaranteed that all of the possibilities are Gödel-like, then Joey will identify one of these individuals as Gödel if Joey is placed in one of the possible worlds in which a Gödel-like individual exists, provided this individual has the property of Gödelity. That is, if Joey finds someone who fits the given description (i.e., it is Gödel-like) and if nothing else he finds fits the description better (i.e. it has Gödelity), Joey will identify the individual as Gödel as fix the reference as such.

It is relevant to note that if Joey does not have complete knowledge of his own world, he will not know for certain in which of these worlds he was placed; his primary intension can be mapping any of those G_j who belong to any of those W_j that are epistemically indistinguishable for him. When Joey thinks about where he is in the infinite ocean of possible worlds, he can conjecture whether he is in the world in which Gödel does or does not do all of the things that Gödel may have done while preserving his Gödelity and the facts he came to acquire about Gödel. Joey may or may not learn which one of these possibilities became actualized. Arguably, he will never know all of the relevant information and his knowledge of Gödel will always be insufficient for him to determine precisely with which world he is engaged. Thus, although he is in only one world, he does not know enough about Gödel to know exactly which world he is in. However, he can narrow down the possibilities by updating his knowledge with respect to relevant information.

Now, a more concrete and detailed example will be built. Let W_1 to W_5 be all five possible worlds that exist in our fictional scenario; let J_n and G_n denote, respectively, Joey and Gödel from world W_n. The worlds are characterized as follows:

W_1: G_1 died in a car accident and had a lover, but J_1 (Joey from W_1) only knows the initial fact because Gödel conveniently keeps his lover a secret.

W_2: G_2 died in a car accident and had two lovers, but J_2 does not know about the lovers.

W_3: G_3 died of starvation, and no one knows about a lover.

W_4: G_4 died of starvation and had a secret lover J_4 does not know about.

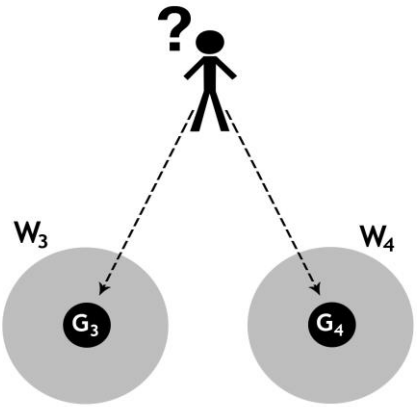
W_5: G_5 died in a car accident and had no lovers.

Joey knows all of the information listed in this characterization, while not knowing in which world he is. Suppose Joey comes to know Gödel died of starvation, even if informed by all the characterizations above, worlds 3

and 4 will look exactly the same to him; he cannot tell the two worlds apart.[4] The same is true for worlds 1 and 2, if Joey knows about the car accident and nothing else, he cannot tell these two apart. J_1 and J_2 are subjectively indistinguishable with respect to their information about Gödel, whereas J_3 has different information, i.e., that Gödel died of starvation instead of in a car accident. Although J_1 and J_2 are subjectively indistinguishable, G_1 and G_2 differ. Therefore, when J_1 and J_2 use Gödel's primary intension and fix its reference, they do so with different referents. Although using the same definition of Gödel, J_3 will find a Gödel who died of a different cause and is therefore *subjectively distinguishable* from J_1 and J_2. For J_1 and J_2 the secondary intension of Gödel will correspond to G_4 and G_5. Provided that the secondary and primary intensions cannot intercept, the secondary intension of J_3 will correspond to G_5 but not to G_4, because as far J_3 knows he can be in W_4. Although the question of the possible interception of the mapping of secondary and primary intensions has its own merit, one of the most difficult questions one can ask about this fictional scenario is the following: in the end, does J_3 fix his reference as G_3 or G_4? As far as J_3 knows he might be in W_3 or W_4; what grounds would justify a preference for either? Nonetheless, in the standard model, J_3 must choose one of the two. Yet to him, they are all identical. Thus, J_3 would have to make a choice between two indistinguishables and use some type of choice function. This choice would not by any means be a trivial matter because any choice function is not even mathematically constructible. In fact, outside the realm of pure mathematics, it seems impossible to make this type of choice. If J_3 has agreed with the standard model of two-dimensional semantics, he is in a very awkward position indeed.

5. Proposed new model

Joey has a better alternative. He can use both W_3 and W_4. From an omnipresent perspective, even if we can know which world he is in, Joey still does not have access to that information that would justify a preference for either W_3 or W_4. Thus, in this modified model, the primary intension is a family of functions, each one mapping entities on each epistemically indistinguishable indexical world. There are as many referents mapped by the primary intension as there are worlds in which the epistemic subject's factual knowledge about the referent is identical – even if each of them lives in a different world with a different referent. Thus, according to the standard model, we have:



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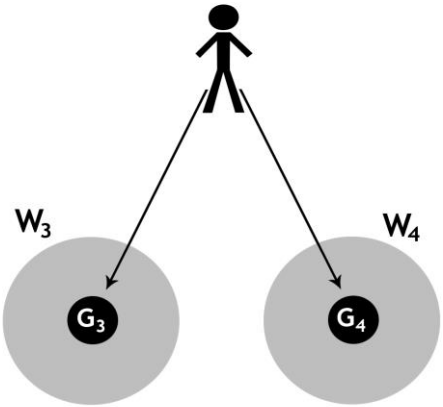

In our problem case, J_3 will fix the reference by creating two different functions each one mapping Gödel on W_3 and W_4, all of them indistinguishable to him. In fact, J_4 will also do the same, while J_1 and J_2 will have each two different functions one in W_1 another in W_2. In that manner, one can solve the problem of choosing between indistinguishable worlds by using all of them. Evidently, as the epistemic subject learns about the world he can then adapt his mapping accordingly by excluding some of the worlds and fine graining his primary intension. He cannot, however, start with a completely precise and univocal primary intension, for that would assume he knows exactly to which world he belongs.

Let $\{W_{\acute{\varepsilon}}\}$ be the set of all epistemically indistinguishable worlds for the epistemic subject ἑ, then our *humble primary intension* would map one referent for each member of $\{W_{\acute{\varepsilon}}\}$, taking the form:

$$f_1 : \{W_{\acute{\varepsilon}}\} \rightarrow R$$

6. Some consequences

In this modified model, the concept of epistemic possibility has either a weaker sense or no sense at all. According to standard usage, a belief about the world is primarily possible if it is possible that the world in which the belief is satisfied is the indexical world, or in other words, if the epistemic subject does not know the belief's negation. However, in the modified model, those conditions could be met even if it remains the case the epistemic subject is in a world where the belief is false. The epistemic subject might not know a belief's negation, for he cannot know if he is in the world where that belief obtains or not; while in fact being in a world where the belief is certainly false. One might still decide to call that belief epistemically possible. However, it should be noted this would be a weaker epistemic possibility where it could be the case that the epistemic subject is in a world where the belief is false and, notwithstanding the belief's falsehood, one would say such belief is epistemically possible. The issue lies in an uncertainty regarding the true value of primarily possible beliefs. On the modified model, the primary intension is fixed in all epistemic indistinguishable worlds. As long as at least one of the worlds makes the belief true, then it will be primarily possible. However, the epistemic subject can be in one of the worlds where the belief is false, and a false belief cannot be knowledge. It is still defensible that, since the epistemic subject does not know in which world he lives, the primarily possible belief is still epistemically possible, from his point of view. However, this is not the same as showing all instances of primary possibility entails epistemic possibility. For instance, it could be the case that a primary intension is true in only one world out of the many equally epistemically indistinguishable worlds where the primary intension will be fixed. While we would like to say the belief is primarily possible, it is not clear we would say each instance of it, in each world, is epistemically possible. If there is a world where the primary intension is true, while being false in all other equally epistemically indistinguishable worlds, will it still be epistemically possible in all those worlds?

Perhaps, one could recast Chalmers' arguments using this weaker epistemic possibility. Nevertheless, in this modified model, even if primary non-ideal conceivability entails primary possibility (Chalmers, 2003), it seems it will not necessarily entail the standard two-dimensional

conception of epistemic possibility; at best we might claim it entails the weaker epistemic possibility whereby one can be in a world where a belief is false but, provided one does not know that, the belief would still be epistemically possible. Chalmers (2003) argues that primary ideal conceivability entails primary possibility, and although he may have persuasive arguments for this position, it seems that philosophers are forever doomed to be ensnared by non-ideal conceivability. Joey may believe that he lives in a world in which Gödel did not have a lover because such a world may, as far as he knows, be the indexical world. Therefore, he can non-ideally conceive that such a world may be the one in which he lives; although he lives in a world in which Gödel had a lover. Accordingly, Joey has a false belief that is epistemically possible in this weaker sense. If we simply debunk that primary non-ideal conceivability implies standard epistemic possibility, as Chalmers argues, then this debunking will, in turn, have consequences for the strong arguments by Chalmers against physicalist versions of monism. Thus, inside this framework, it might be possible to formulate a strong version of monism in which philosophical zombies are not epistemically possible only because they are non-ideally conceivable. On the other hand, it is not necessarily the case that we can completely save monism with this new framework. Claiming it is primarily non-ideally conceivable that we live in a world where monism holds and there is no consciousness would still entail that under monism a world without consciousness is epistemically possible in that weaker sense; that is, we do not know if we live in a world with or without it and hence, arguably appropriately, should fix our reference on both options. Therefore, it will still be the case that there will be no strong supervenience of consciousness on monism. However, the consequences of this new framework to supervenience require a separate detailed investigation to be conducted in a later paper. It should perhaps be considered a feature rather than a fault that, according to monism, the primary intension of consciousness is fixed in both types of worlds; that is, both in the worlds where consciousness exists and where it does not.

7. Conclusions

Why should one choose this model?

1. It does not assume a function of choice when addressing the problem case mentioned.
2. It does not assume that the function of choice has criteria that are unknown to the speaker when addressing the problem case mentioned.
3. It does not presuppose that there is only one specific world (although we prefer to commit ourselves to this thesis on other grounds).

4. It solves the same problems as the two-dimensional semantics framework.
5. It might make philosophical zombies an epistemic impossibility (a subject for a later investigation).

The choice between the humble and the standard alternatives will be likely to be made by the philosopher with respect to simplicity and with an eye to what the particular issue at stake is. Two-dimensional semantics, as used thus far, fits our uses of common terms and is sufficient for discussing twin earths, xyz, multiple causation and other important philosophical issues of the early 21st century – with the exception, perhaps, of philosophical zombies. Here, the concern is not to undermine this model on the basis of simplicity or inefficiency but to enrich it with a parallel view that, as far as one can perceive, accounts more precisely for the use of language and a subject's beliefs. The price to be paid is a broader realm of worlds in which we map primary intensions, and the advantages in terms of accounting for beliefs and everyday language are actually obstacles for twin-earth-like discussions. From a monist point of view, this cost is a small price to pay if Chalmer's arguments can thereby be undermined. Although these two models belong to separate realms, both should be widely used in future philosophical discussions regarding the relevant subjects.

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NOTES

1. In fact, if we subscribe to the theory that any permutation of a possible world is also a possible world then we could only single out one and only one world if provided with one of its complete descriptions.

2. Chalmers, D. J. (2004). "Epistemic two-dimensional semantics." Philosophical Studies 118(1-2): 153-226.

3. On those worlds without the referent, the function maps the empty set.

4. One common objection at this point is that if we are constructing the primary intension we can demonstratively set what it maps, and set which is the indexical world precisely. However, it should be noted that those would be ideal situations

unobtainable in most cases. Outside logic, we are much more similar to Joey and his incomplete knowledge than to being able to properly set meanings and indexicality by fiat.

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