A Note on Global Descriptivism and Putnam's Model-Theoretic Argument

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Abstract

According to Putnam's model-theoretic argument, an epistemically ideal theory cannot fail to be true. Lewis contends that all the argument really shows is that an epistemically ideal theory must be true provided a certain theory of reference—which he terms Global Descriptivism—is the whole truth about reference, which he emphatically denies. In this note it is argued that Lewis grants Putnam too much. However implausible Global Descriptivism may be as a comprehensive account of reference, on what appears to be the only reasonable construal of it Global Descriptivism does not imply that an epistemically ideal theory must be true.

Define Realism as the thesis that even an epistemically ideal theory of the world is not guaranteed to be true. Putnam's model-theoretic argument ([5], [6]) argues against this thesis: an epistemically ideal theory cannot fail to be true, so the argument's conclusion reads. Lewis, in his [3], contends that all the argument really shows is that an epistemically ideal theory must be true *provided* a certain very weak theory of reference—which he terms Global Descriptivism—is the whole truth about reference. And this Lewis emphatically denies. In this note I distinguish two readings of Global Descriptivism and argue that one of these must be unacceptable to *all* parties in the debate whereas the other may well be acceptable, not only to Putnam but (at least as one of the principles governing reference) also to Realists. Subsequently it is shown that Putnam's argument only goes through on the first, unacceptable reading of Global Descriptivism; on the second reading Putnam's conclusion is unwarranted even if Global Descriptivism were the whole story about reference.

Putnam's model-theoretic argument is so well-known that it hardly requires recounting. I therefore only very briefly rehearse its main moves. Let T be an epistemically ideal theory. It is formulated in a first-order language $\mathcal{L}(T)$ that is assumed to consist of an observational and a theoretical part. That T is epistemically ideal means (i) that it satisfies all operational constraints (meaning, roughly, that it is in accordance with all observations) and (ii) that it exhibits every conceivable theoretical virtue. T is further assumed to assert the world to be infinite, and to be right in this respect. To start take a partial

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model $\mathcal{M}_O$ for $\mathcal{L}(T)$ that interprets all and only observational predicates, and that does so in the normal or 'standard' way, i.e., the predicate 'red', on this interpretation, refers to all red things in the world, and so forth. It follows from some basic model theory that there exist models of T, extending $\mathcal{M}_O$, of every infinite cardinality. Thus in particular, there exist such models of the same cardinality as the world. Choose, then, from these a model $\mathcal{M}$ and establish an interpretation SAT for $\mathcal{L}(T)$ by mapping $\mathcal{M}$ 1:1 onto the world. If SAT is then used to interpret $\mathcal{L}(T)$, T comes out true of the world, i.e., T is a true-on-SAT, or TRUE(SAT), theory of the world.

So far the argument is just a bit of logic, and is uncontroversial. Note, however, that we have only reached the conclusion that an epistemically ideal theory of the world cannot fail to be TRUE(SAT) on some SAT, a result that is quite innocuous from a Realist perspective: that an epistemically ideal theory cannot fail to be TRUE(SAT) doesn't contradict the thesis that an epistemically ideal theory is not guaranteed to be true *simpliciter*, i.e., true if the terms of $\mathcal{L}(T)$ are interpreted as we intend them to be interpreted. So Putnam's argument does nothing to undermine Realism unless it can be shown that the particular interpretation of $\mathcal{L}(T)$ that is established in that argument is the standard or intended interpretation of T's language. What reason do we have to believe it is?

We saw that Putnam makes sure that the SAT on which T comes out true is standard with respect to the observational part of the vocabulary. The intended interpretation of these predicates can be taken to be fixed by operational constraints, meaning that an interpretation according to which the thing I'm seeing now is a horse, say, when what I'm actually seeing is a cow, is to count as unintended. However, these constraints evidently only work for observational predicates and leave the interpretation of the theoretical part of the vocabulary still wide open. So what definition of 'intendedness' has Putnam in mind for the theoretical part of the vocabulary that could possibly legitimize the claim that the interpretation SAT on which T comes out true is not just intended with respect to observational terms but also with respect to the theoretical ones?

In Putnam's writings one seeks in vain for a direct answer to this question, but I think Lewis ([3]) is right that Putnam is implicitly relying on an account of reference Lewis calls Global Descriptivism:[1]

GD The intended interpretation(s) of $\mathcal{L}(T)$ (insofar as it is/they are not determined by operational constraints) is/are the one(s) that assign(s) things/classes of things (and classes of such classes, etc.) in the world as extensions to the terms of $\mathcal{L}(T)$ in such a way that T comes out true.

Or more generally formulated, without reference to T:

GD* The intended interpretation(s) of a theory's language (insofar as it is/they are not determined by operational constraints) is/are the one(s) that assign(s) things (etc.) in (some part of) reality to the terms of the language such that the theory comes out true (of that part of reality).[2]

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[1] As is also argued in McGowan's [4]; the thesis called (VF) in García-Carpintero's ([1]) reconstruction of Putnam's argument comes close to Global Descriptivism.

[2] Cf. also [4, p. 32]: ''[G]lobal descriptivism' ... is tantamount to the claim that any term of a theory refers to whatever it needs to refer in order for that theory to be true'.

According to Lewis ([3, p. 224]), GD 'leads straight to Putnam's incredible thesis' that an epistemically ideal theory cannot be false. And indeed, it seems that, since T comes out true on SAT, the extensions SAT assigns to the theoretical terms must be intended. Hence SAT must be the (or an) intended interpretation of $\mathcal{L}(T)$ and thus T is (not just true-on-some-interpretation but) true *simpliciter*. Hence Realism is false.

As remarked, Putnam nowhere explicitly commits himself to GD. And although I do not see how, there may be some way to bridge the gap between Realism's 'true' and the 'TRUE(SAT)' of the model-theoretic point other than by means of GD. So the argument as just stated is not necessarily the argument as Putnam has intended it. Perhaps it should be stressed, then, that the argument I shall be concerned with in this paper is 'Putnam's-argument-as-read-by-Lewis' rather than 'Putnam's-argument-as-intended-by-Putnam' (though I myself am quite confident the two are the same).

We will examine the correctness of the argument in due course. Preliminary to that, we should ask ourselves what could make Putnam (or at any rate Lewis' Putnam) think GD is a reasonable theory of interpretation. What could justify it in his eyes? Putnam's own writings are again of little help here. However, Lewis, who himself finds GD quite unacceptable—if only because it leads (according to him) to Putnam's incredible thesis—formulates an answer in Putnam's stead: GD is motivated by 'our intention to refer in such a way that we come out right'; this intention constitutes the only 'force' constraining reference ([3, p. 221]). In other words, we want our theories to be true, so, if possible, they should be interpreted in such a way that they do come out true. As I said, my primary concern will be Putnam's argument under Lewis' interpretation, so there is no need to query whether Putnam really thinks GD is justified for the reason Lewis suggests. But if we assume that GD is indeed amongst the argument's premises, then, since there doesn't seem to be any other candidate-justification for GD around, since, furthermore, I don't see any particular ground why Putnam could not accept the justification Lewis suggests, and since, finally, Putnam in that case certainly needs *some* justification for GD, it is eminently plausible that Lewis has correctly identified Putnam's motivation for it. I even think that it would not be too unreasonable to assume that also the Realist, if she were convinced by the arguments against other candidate-constraints on reference Putnam has brought forward over the years,[3] would want to accept GD for the same reason as (we assume) Putnam does.[4]

Much of the discussion provoked by Putnam's model-theoretic argument

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[3] See for instance [6, pp. 295f], [7, pp. 80ff].

[4] Indeed, although Lewis finds GD unacceptable, he does not think that it is *completely* off the mark—there is, in his opinion, *something* to it: our intention to get things right is certainly *amongst* the factors that determine interpretation; it just isn't the only one. According to Lewis, reality itself puts an additional constraint on interpretation: only some classes (what he calls natural classes) are eligible to serve as referents for our words. Roughly, intendedness of interpretation, on this view, is a matter of 'striking the best balance' between making us come out right and overall eligibility of referents assigned ([3, p. 228]). (Cf. [2], [8, pp. 72f], [9, p. 466], [11, Ch. 3], [12], [13] for objections to this proposal.) What further lends the assumption some credibility is that such principles as the Principle of Benefit of Doubt and the Principle of Charity, which are often presented as supplementary to the Causal Theory of Reference, and as such are endorsed by many Realists, are clearly akin to GD.

has focused on arguments pro and con more Realistically suited constraints on reference than GD, and on whether GD is acceptable as a premise in an argument directed against Realism. I want to leave these issues aside here and make a different point that so far has gone unnoticed in the literature. The point is this: even if we grant Putnam that GD is the whole truth about interpretation, his model-theoretic considerations do not warrant the 'incredible thesis' that an epistemically ideal theory is necessarily true, at least not on what I believe, and what I believe Putnam (and also Lewis) must believe, to be GD's only sensible construal.

To see why this is so, first consider the following paraphrase of GD van Fraassen ([13]) gives in the context of a discussion of Lewis' paper: '[G]lobal descriptivism is something like: all language is to be understood as referring to things in such a way that the total theory (the totality of our beliefs or assertions) comes out true'. Here total theory is equated with the totality of our beliefs. But neither GD nor the lengthier passage in Lewis' [3] which it is meant to summarize talk about beliefs; there is only mention of theories. Yet it seems that van Fraassen is right to read GD not as pertaining to theories *tout court* (or to total theories *tout court*), but to our beliefs (or to theories we believe), and that this must also be what Putnam had in mind, at least if Lewis' suggestion is correct that Putnam takes GD to be justified by the fact that it is 'our intention to refer in such a way that we come out right'. For, of course, we do not intend to refer in such a way that *any* theory that can be formulated in our language, not even any consistent theory, comes out true; in particular we do not intend to refer in such a way that theories we believe to be *false* come out true.

By way of illustration of the foregoing, suppose $\mathcal{L}(T)$ is in effect the language we speak, but, although we have been able to formulate T, we happen to disbelieve it (perhaps because we believe, mistakenly, that it is not epistemically ideal, or for some other reason). Would in that case the interpretations on which T comes out true nevertheless have to be counted among the intended interpretations of our language? If so, then that cannot have anything to do with our intention to come out right. Or suppose we believe T, but only partially; only, say, insofar as it makes claims about observables. We believe that those segments of it which appear to make claims about unobservable entities are best understood instrumentally (as some Realists indeed hold). Should our language then really be so interpreted that even these latter parts of the theory come out true, even though we do not at all intend them to be true, even though we believe that these parts aren't semantically on a par with the theory's observational consequences, aren't of the kind that can be true or false? It is hard to see how a theory of interpretation which would counsel us to do so could be defended at all, but it quite evidently couldn't be justified by our intention to come out right.

In view of this it seems GD must be qualified as follows:

GDQ The intended interpretation(s) is/are the one(s) that make the ideal theory, insofar we believe it, come out true,

or perhaps as:

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GDQ* The intended interpretation(s) of a language is/are the one(s) on which a maximal number of the beliefs of the speakers of that language comes out true.

It is not so important how exactly the qualified version of GD is formulated. What matters is that it brings out that the intendedness of an interpretation of a language is related to the beliefs of the speakers of that language and not just to theories (i.e. sets of sentences) in that language, not even to total or epistemically ideal ones, i.e., not to theories independent of our epistemic attitudes towards them. My claim now is that Putnam's argument fails to refute Realism even if we assume no stronger constraint on interpretation than a version of GD like GDQ or GDQ* or any other in the same vein.

Let $\mathcal{M}_O$ be as before, and let T_O be the set of all observation-sentences (in $\mathcal{L}(T)$ or some other language) which are true on this interpretation. Now consider the set of all consistent and complete theories in the full language which contain T_O as a subset. Call this set $\boldsymbol{T}$. Every element of $\boldsymbol{T}$ will satisfy all operational constraints (since these have only to do with T_O). Will every element of $\boldsymbol{T}$ also satisfy all theoretical constraints? Probably not. However, Putnam would be the last to claim that these constraints are guaranteed to pick out exactly one member of $\boldsymbol{T}$, i.e., that there will be a unique member of $\boldsymbol{T}$ which can unambiguously be said to score best in this respect. Suppose in our case they do not. Then let $\boldsymbol{T^*}$ denote the set of theories which do, overall, equally well with respect to simplicity, mathematical elegance, etc. Suppose further that T_{14} is an element of $\boldsymbol{T^*}$, and that it happens to be the one we believe (for whatever reason). Presuming something like GDQ, the interpretation $\mathcal{M}_{14}$ (extending $\mathcal{M}_O$) which makes T_{14} come out true, is (among) the intended interpretation(s) of our language. Since $\mathcal{M}_{14}$ is an extension of $\mathcal{M}_O$, the other members of $\boldsymbol{T^*}$ will on $\mathcal{M}_{14}$ still satisfy all operational constraints. However, it is clear that, on the intended interpretation, they all come out false. Hence, an epistemically ideal theory need not be true.

Putnam may seem to have an easy way out of this: he may say that we should believe *all* the members of $\boldsymbol{T^*}$, since they are all epistemically ideal. This would, again presuming GDQ or some congener, mean that there are (at least) as many intended interpretations of our language as there are theories in $\boldsymbol{T^*}$, but so what? However, why *should* we believe every member of $\boldsymbol{T^*}$ (even provided we somehow know they are ideal)? It may be arguable that we should believe the truth (perhaps this is our 'epistemic duty'), but to come from this to the claim that we should believe all members of $\boldsymbol{T^*}$, would require the further premise that all members of $\boldsymbol{T^*}$ are true. *But that is exactly what was supposed to be established.* As long as it is not, it seems we are free to believe T_{14} and disbelieve the other members.

(Even more ironical: suppose we believe a member of $\boldsymbol{T}$ not in $\boldsymbol{T^*}$—say, because we have failed to come up with any member of $\boldsymbol{T^*}$ or because we are not very good in estimating which of a number of theories is the simplest; then all epistemically ideal theories are false, and a 'sub-ideal' one is true.)

It may be suggested that, given that all members of $\boldsymbol{T^*}$ are on a par (in the sense specified), the proper epistemic attitude towards these theories is not to believe all of them nor to believe a particular one of them, but to believe *none*

of them (as would for instance be counseled by van Fraassen—see his [10]).[5] I am not unsympathetic to this suggestion, but note that, using GDQ, this would only mean that *no* ideal theory is true, which again is entirely compatible with Realism as defined earlier. Thus, whether we are entitled to believe one of the **T***'s or not, Putnam's argument fails either way.

Let us take stock: We have seen that Putnam, in his model-theoretic argument against Realism, relies (or in any case may reasonably be assumed to rely) on a premise that is not evidently implied by Realism. The additional premise serves Putnam's purposes, but only if we read it as:

GD′   The intended interpretation(s) of a theory's language is/are the one(s) which assign(s) things in the world to the terms of that language in such a way that the theory comes out true, *regardless of whether we believe that theory or not.*

For it then indeed follows that every member of **T*** (as well as any other consistent theory for that matter) must be true (for every consistent theory will come out true on some interpretation, which must *ipso facto* be intended).[6] But on this construal of GD it is hard to see how anyone, even the staunchest anti-Realist, could want to accept that theory of interpretation. Read as GDQ, on the other hand, it does not seem too implausible that, under certain (from a Realist viewpoint) dramatic circumstances, even the Realist might agree with GD. But it has been argued in this paper that, on that reading, Putnam's model-theoretic argument is invalid.

To end I would like to emphasize that the above argument's purpose is explicitly *not* to defend the view that GDQ is or in any case might well be the whole truth about interpretation. *That* is quite unacceptable anyhow; for although the argument shows that, even if GDQ were a complete account of interpretation, it would get Putnam nowhere near a refutation of Realism, GDQ does imply that an epistemically ideal theory *we happen to believe* cannot be false—which is hardly less incredible than Putnam's claim. So, surely, other constraints on interpretation than our intention to get things right must be operative. However, my purpose was merely to argue, *contra* both Putnam and Lewis, that Realism can be upheld, even assuming no more than the incredibly weak constraint on interpretation discussed in this paper.

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[5]I owe this suggestion to an anonymous referee, and the following response to it to an anonymous Associate Editor.

[6]It seems GD′ would necessitate some drastic revision of our logic (which constitutes another good reason not to adopt it). For although any epistemically ideal theory must be true (if we accept GD′), it may at the same time be false. In general, if there are at least two mutually exclusive epistemically ideal theories in the same language, then any of the interpretations that make one of them true (and so are intended interpretations of the language) makes the other one false (i.e., false *simpliciter*, for false on an intended interpretation of its language). This at any rate has the strange consequence that Putnam can maintain the thesis that an epistemically ideal theory must be true, but not the thesis that an epistemically ideal theory cannot be false. However, I will not go further into what follows from this so evidently unreasonable construal of GD, my interest here being in what follows from reasonable construals of it (like GDQ and GDQ*)—and in particular of course in whether Putnam's incredible thesis follows from these.

Acknowledgments

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