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Truth Empiricism

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Truth Empiricism

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Truth Empiricism

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Naturalistic philosophers aim to understand the world on the basis of science. A naturalist takes empirical evidence to be the ultimate arbiter of our beliefs. As naturalists, our investigations of the nature of truth itself should respect this empiricist methodology. In this essay, I argue that the existence and character of truth are open empirical questions, to be answered by scientific inquiry. I then argue against an *a priori* proof of the existence of truth.

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Introduction

If we draw our ontological and theoretical commitments exclusively from our well-confirmed scientific theories, as naturalistic philosophers typically say that we should, then we should regard questions about the existence and nature of truth as empirical questions to be decided by our scientific inquiries. We should accept that truth exists if and only if it is a required element of our best scientific models, and we should accept that truth has all and only the properties assigned to it by those models. It follows that *a priori* inquiry alone cannot be taken as the ultimate arbiter concerning the nature or existence of truth. Empirical inquiry is the ultimate arbiter of our commitments, even our commitment to truth. Call this doctrine **truth empiricism**.

One who thinks that truth, if it exists, is a part of the natural world should not treat the notion of truth as logically or conceptually prior to our conception of the rest of reality. Nor is such a naturalist to accept, on purely *a priori* grounds, an account according to which the existence or nature of truth is necessary for our ability to understand or theorize about the properties, objects, and events found in nature. Instead, truth is to be considered just another property to be triangulated within the natural world by scientific methods, if it is to be found there at all. For such a naturalist, the existence and nature of truth is no more epistemically perspicuous than the existence or nature of any other aspect of scientifically revealed reality. Nor is it more metaphysically fundamental than the rest of reality. Nor does investigation into the nature of truth occupy a privileged position in the philosophical dialectic.

There is a long tradition of philosophers who have embraced such an empirical approach to truth. The hard-nosed empiricists of the Vienna Circle led by Otto Neurath and including Rudolph Carnap debated whether the traditional notion of truth might lead scientists into metaphysical "pseudoproblems". Not only did Neurath think the sciences could do without a notion of truth, he argued that they should actively work to eliminate truth talk altogether.[1]

In the wake of logical empiricism, many scientifically inclined philosophers continued to implicitly endorse empiricism about truth. W. V. O. Quine's arguments from the indeterminacy of translation were aimed at showing that truth and other semantic properties needed to be radically deflated on the grounds that no empirical evidence could support robust claims about them.[2] The next generation of philosophers, largely under the influence of Quine, were suspicious of including semantic properties in their ontology unless the theory of semantics made adequate contact with the physical sciences. Many thought that semantic facts were acceptable only if they could be reduced to the non-semantic facts recognized by the natural sciences. Thus, Hartry Field writes "Semanticalism is the doctrine that there are irreducibly semantic facts…as a physicalist I believe that [semanticalism] must be rejected."[3] Expressing the same sentiment, Jerry Fodor writes,

[1] For a discussion of Neurath's views on truth, see Mancosu, P. "Tarski, Neurath and Kokoszynska on the Semantic Conception of Truth", in D Patterson (ed) *New Essays on Tarski*, Oxford: OUP, 2008, 192-224; Mormann, T. "Neurath's Opposition to Tarskian Semantics", in Wolenski, J. and E. Kohler (eds) *Alfred Tarski and the Vienna Circle*, Dordrecht: Springer , 1999, 165-199.
[2] Quine, W. V. O. (1960). Word & Object. The Mit Press.
[3] Field, H. (1972). Tarski's theory of truth. Journal of Philosophy 64 (13):347-375.

I suppose that sooner or later the physicists will complete the catalogue they've been compiling of the ultimate and irreducible properties of things. When they do, the likes of spin, charm, and charge will perhaps appear on their list. But aboutness surely won't; intentionality simply doesn't go that deep…if the semantic and the intentional are real properties of things, it must be in virtue of their identity with (or maybe of their supervenience on?) properties that are themselves neither intentional nor semantic. If aboutness is real, it must really be something else.[4]

The reductionist project is not identical with truth empiricism, but it is related to it. The reductionists were concerned primarily to fit semantics into a scientific worldview. One way (but not the only way) to achieve this would be to show that semantic properties reduce to other scientifically respectable properties. The motivation for reductionism is truth empiricism. If the sciences simply don't make use of semantic properties, then there aren't any.

More recently, Michael Devitt has defended truth empiricism in his book *Realism and Truth*,[5] and even more recently in "Hilary and Me: Tracking Down Putnam on the Realism Issue."[6] One of Devitt's central claims is that 'realism'—the thesis that the ordinary objects of commonsense (chairs, restaurants, mountains, etc.) and the theoretical objects posited by our scientific theories (electrons, gravity waves, the big bang, etc.) exist independently of our minds—is "independent of any doctrine of truth…*Realism does not entail any theory of truth or meaning at all.*" Devitt urges that we should accept the ontology of common sense and the natural sciences *before* asking questions about the nature of truth. He argues that from this starting point we will recognize that

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[4] Fodor, J. A. (1987). Psychosemantics: The Problem of Meaning in the Philosophy of Mind. MIT Press.

[5] Devitt, M. (1990). Realism and Truth, 2nd Edition. Princeton University Press.

[6] Devitt, M. (2013). Hilary and me: Tracking down Putnam on the realism issue.

semantically motivated anti-realists like Michael Dummett[7] and HIlary Putnam[8] are confused. These anti-realists try to subvert the notion of a mind-independent world, arguing, on the basis of *a priori* claims about the nature of truth. Devitt's response is that *a priori* claims about the nature of truth have no special bearing on the nature of reality, since our epistemic access to the existence and nature of truth is of a piece with our epistemic access to the rest of reality.

If Devitt's response to semantically motivated anti-realism is on the right track, then truth empiricism is the best way to understand our ontological commitment to a truth property. Our scientific practices must not be beholden to any *a priori* conceptions of truth. It must be taken to be a theoretical, empirical question whether it is possible for scientists to give a 'complete' theory of the world that does not invoke a notion of truth. This means that even the existence of truth must be considered an empirical question, and one capable (for all we know antecedently to such an inquiry) of receiving a negative answer.

Despite its naturalistic appeal, truth empiricism is not very widely accepted. The empiricist must confront powerful arguments to the effect that truth *must* exist regardless of what we could discover by doing science. These arguments attempt to establish on *a priori* grounds that denying the existence of truth implicitly (or explicitly) involves accepting a contradiction. Thus, there is supposed to be an inconsistency in the idea that

[7] Dummett, M. A. E. (1978). Truth and Other Enigmas. Harvard University Press.
[8] See: Putnam, H. (1983). Realism and Reason. Cambridge University Press. Putnam, H. (1980). Models and reality. Journal of Symbolic Logic 45 (3):464-482. Putnam, H. (1981). Reason, Truth, and History. Cambridge University Press.

the empirical sciences could lead us to abandon the notion of truth. Paul Boghossian develops one of the most influential and clearly articulated arguments of this kind in his essay "The Status of Content."[9] Boghossian argues from *a priori* premises to the conclusion that a metaphysically robust property of truth exists. The second part of this essay will engage Boghossian's attack on truth empiricism.

The idea that we might learn there is no property of truth can seem absurd; however, the fact that an idea can seem absurd to us now is no reason to think that it should not be accepted upon more careful reflection. Those who espouse a general commitment to a scientifically informed ontology are obliged to take truth empiricism seriously. Even if we are currently very confident that truth will be included in any plausible scientific worldview, this confidence should not mislead us into thinking that we know *a priori* that scientific practice could never be allowed to convince us otherwise.

In section 1, I will argue that truth empiricism is a plausible epistemological and ontological doctrine, and that the existence of truth is open to empirical doubt. In section 2, I will show that Boghossian's *a priori* argument for the existence of truth fails.

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[9] Boghossian, P. (1990). The status of content. Philosophical Review 99 (2):157-84.

Section 1:   On the Plausibility of Truth Empiricism

1.1. Preliminaries

Let us begin with a few clarifications. First, the doctrine of truth empiricism is not to be confused with the claim that if truth exists then it must be possible to *reduce* truth to other scientifically respectable (i.e. naturalistic) properties. The notion of truth may play its own part in our scientific models, in which case we ought to accept its existence, even without its being reduced or explained in other terms. Alternatively, truth might find a place in the canons of science by way of a naturalistic reduction, if such a reduction is somehow essential or convenient for scientific purposes. In that case, we may take our science to have revealed that truth is identical with some natural relation in the same way that chemistry revealed water to be identical with H2O. (Something like this was what Hartry Field predicted in the article mentioned above.) These possibilities are not at issue. Truth empiricism is merely the doctrine that truth, if it exists, is a property of scientific interest; its nature and its existence are open questions to be settled through empirical investigation.

Second, truth empiricism is compatible with the possibility that it is *a posteriori necessary* that truth exists. This seems rather unlikely as the naturalist currently thinks of things, since the only objects that are candidates for being true—thoughts and utterances—exist contingently.[10] Nevertheless, perhaps the ultimate theory of cosmology or quantum entanglement will claim that truth must exist necessarily, either as a self

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[10] For a defense of this claim, see: King, J., Soames, S. & Speaks, J. (2014). New Thinking About Propositions. Oup Oxford.

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contained mathematical object or as a property invoked by some fundamental mathematical-cum-physical theorem. Perhaps future cosmologists will tell us that the Big Bang followed inexorably from some mathematical proposition that invokes the notion of truth. I cannot now conceive of how we could arrive at such a theory through scientific methods, but that does not rule out the possibility that some day our scientists will justify our accepting something like it. Truth empiricism is silent on the matter of whether there are *a posteriori* necessities at all, but it is compatible with truth's existence being one if our best scientific theories say that it is.[11]

Third, the truth empiricist can (although they need not) accept that it is *a priori* that truth exists necessarily within the domain of pure mathematics. Empirical evidence can convince us that space is non-Euclidean; however, empirical evidence cannot contest the existence of Euclidean space within the domain of pure geometry. Similarly, the truth empiricist is committed to the possibility that empirical evidence could show us that there are no truths within space-time, that nothing in nature instantiates the property of truth. This is consistent with the claim that empirical evidence cannot force the mathematician to abandon a notion of truth. The truth empiricist might make a special allowance for mathematical ontology to be unconstrained by scientific inquiry in the same spirit as the geometer's ontology is counted as unconstrained by observation of events in our actual space-time.

Fourth, truth empiricism is compatible in a certain sense with the claim that the existence of truth is contingent but knowable *a priori*. We might know about truth in the

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[11] Of course, if we ultimately abandon the notion of truth, the notion of necessity will have to be characterized in some way other than the necessary *truth* of a sentence.

way that we once knew *a priori* that the meter bar in Paris was one meter long. By the fall of 1875 many physicists had accepted the stipulation that 'one meter' was to be identified with the length of a particular bar of platinum. Saul Kripke argued in 1980 that we know *a priori* that this bar is one meter long, yet its length is a contingent feature of it.[12] In 1983, the meter bar stipulation was abandoned in favor of a new one: the meter is now defined as the length of the path travelled by light in a vacuum in 1/299,792,458 of a second. Thus, it is no longer *a priori* knowable that the platinum meter bar is one meter long, since it may be (and probably is) slightly longer or shorter than the length of a meter as it is currently defined. Of course, physicists used the old meter bar stipulation to reach the point where the speed of light was understood; nevertheless, the old stipulation no longer applies today. Now that the stipulation has been abandoned, what counts as *a priori* knowledge has changed. What was once *a priori* knowable qua stipulation is now an open empirical question. (Quine pointed out the possibility that stipulations could lose their *a priori* status in "Carnap and Logical Truth."[13])

In light of these considerations, we see that the truth empiricist can allow sentences to count as true by stipulation. For instance, T-sentences generated by the disquotation schema—"S" is true iff S—can be accepted by the truth empiricist as stipulations. We can know *a priori* today that there are true sentences in light of these stipulations, but this does not constitute a prohibition against the possibility that such stipulations can be abandoned in the future as science progresses. Alternatively, the truth empiricist could deny that our stipulations are known *a priori* at all, instead counting

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[12] Kripke, S. (1980) Naming and Necessity.
[13] Quine, W. V. O. (1960). Carnap and logical truth. Synthese 12 (4):350--74.

them as further theoretical posits with the same status as other scientific hypotheses. Either way, it makes sense to count the existence of truth as an open empirical question even if we currently accept many T-sentences.

I said that the truth empiricist could countenance *a priori* knowledge of contingently existing truths *only in a certain sense*—in the sense that the predicate "is true" can be stipulated to hold of certain sentences under certain conditions. There is another sense in which countenancing the contingent existence of truth, as a piece of *a priori* knowledge, is unacceptable to the truth empiricist. This is the sense in which the epistemic status of "Truth exists" is equated to the epistemic status of "I am here now." It is contingent that I am here now, but I know *a priori* that I am here now. Similarly, an opponent of truth empiricism might hold that truth exists contingently because the existence of thinking and speaking beings is contingent, but insist that it is *a priori* that truth exists given our existence as thinking and speaking beings. To accept that we can infer the existence of truth from our existence as thinking, speaking beings is to accept that truth is epistemically perspicuous in a way that the rest of scientifically revealed reality is not. To accept that truth's existence is *a priori* in this way is to deny that there is an open empirical question about the existence of the property of truth. Call this view **truth rationalism**.

1.2. The Prima Facie Argument Against Truth Rationalism

The prima facie argument against truth rationalism is straightforward:

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1. We should accept the existence of only those entities and properties postulated by our best scientific theories.
2. Our best scientific theories might not need to postulate the existence of truth.
3. Therefore, we do not know *a priori* whether we should accept the existence of truth.

Premise 1 is the doctrine of ontological naturalism.[14] I will have very little to say in its defense beyond its sociological credentials. Naturalism is the received view in contemporary analytic philosophy. It is the standard of ontology for one who takes empirical evidence to be the ultimate arbiter of what we should believe about the world. I will assume that premise 1 is accepted without further argument. Hence, the prima facie argument against truth rationalism rests on the plausibility of premise 2. Why should we think premise 2 is plausible?

Most scientists are very obviously exempt from giving an account of the nature of truth in their papers. They don't even need to mention the existence of truth. It is possible to write acceptable, comprehensive textbooks on astronomy, physiology, particle physics, thermodynamics, medicine, ecology, computer science,[15] statistics, climatology, geology, geography, economics, biochemistry, quantum mechanics, and many, many other empirical subjects without mentioning truth or commenting on its nature.

If truth must appear somewhere in the canons of science, we might expect it to appear in the textbooks of linguistics or cognitive psychology, since these are the domains in which we expect to find an essential recourse to representations. I will argue

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[14] The truth empiricist who thinks it is a priori that truth exists as part of mathematics needs to formulate the statement of naturalistic ontology more carefully, but there is no difficulty in principle. I suppress the details of this alternative throughout for ease of exposition.

[15] Computer scientists sometimes name Boolean values "true" and "false," but these names can be and are often replaced by the names "1" and "0".

that this development, while plausible, is not necessary; those disciplines could conceivably proceed without invoking a notion of truth. Devitt raises another possibility: perhaps the notion of truth will find a place in the science of sociology, in sociological explanations concerning the roles that symbols play in our social interactions. I will argue that here, too, the notion of truth is dispensable in principle. I begin by addressing cognitive psychology, then proceed to linguistics, and then address the possibility that sociology will need to employ a notion of truth.

1.2.1. Cognitive Psychology without a Truth Property

Working cognitive psychologists do not typically discuss the nature of truth or the role it might play in their models. However, Jerry Fodor has argued that psychologists working with computational models of cognition are committed to the claim that mental states are relations to internal formulae—sentences in a 'language of thought' that are somehow encoded within the brain—and that these sentences must have both syntactic and semantic features in order for the computational models to be any good.[16] The semantic features of LOT sentences are to include truth-conditions and, often enough, those sentences are supposed to instantiate the property of truth. If the best cognitive psychology *must* posit internal mental formulae that have truth conditions and are sometimes true, then there is no prospect for a complete future science without truth and truth empiricism ought to be abandoned. I will argue that this is not the case—cognitive psychology is not required to employ a notion of truth.

[16] See: Fodor, J. (1975). The Language of Thought. Harvard University Press. and Fodor J. (2008). Lot 2: The Language of Thought Revisited. Oxford University Press.

The first thing to notice is that the kind of computational psychology that requires a language of thought is not the only research program available in the current science of cognition. Connectionist approaches to cognition model the activities of the brain by describing neural networks and their activation patterns, rather than by postulating a discrete ontology of internal formulae with semantic properties. If theories from the connectionist paradigm ultimately prove to be the better science of cognition, then Fodor's arguments for the imperative inclusion of truth within cognitive psychology will not matter.

But even if the best science ultimately posits the existence of a language of thought and identifies mental processes with computations performed over LOT sentences, these sentences need not be understood as having truth conditions. Computational operations are defined using syntactic properties alone. One can program a computer using only meaningless strings. Likewise, computational models of cognition that postulate a language of thought may treat our mental states as relations to uninterpreted strings whose roles in the cognitive economy are determined by their syntactic properties alone. Since semantic properties can be left out of a computational model altogether, computational models of cognition are not required to make use of a truth property.[17]

1.2.1.1. Concerning Inferential-Role Semantics

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[17] Stephen Stich made this observation in Stich, S. (1983). From Folk Psychology to Cognitive Science. MIT Press.

If this picture is right, then it is possible to develop a model of cognition in which there are internal sentences that have computational roles within the cognitive system but which have no semantic properties. However, some philosophers claim that the computational role of a sentence is sufficient to determine its semantic content. This is the view known as 'inferential-role semantics.'[18] Take an arbitrary symbol $\otimes$. Suppose that the following rules hold: you can infer P from P$\otimes$Q, you can infer Q from P$\otimes$Q, and if you already accept P and you already accept Q, you can infer P$\otimes$Q. These rules suffice to identify the semantic properties of the symbol $\otimes$--it has the same semantics as the word "and." The idea of inferential-role semantics is that, like $\otimes$, all words in a given language get their semantic properties in virtue of the inferences they feature in. Because the truth conditions of sentences are determined by their syntactic structure plus the semantic properties of their basic constituents, inferential-role semantics will assign truth-values to sentences on the basis of the inferences their constituent parts enter into. A proponent of this type of semantics might therefore object to the idea that a model could assign computational roles to sentences without thereby assigning semantic properties, including truth, to those sentences.

In reply to this worry, I should first point out that there has never been much success deriving the semantic properties of any significant fragment of a language from the inferential properties of that fragment alone. We thus have little reason to believe that such a project will be part of any future science. But more importantly, whether or not

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[18] Block, N. (1986). Advertisement for a semantics for psychology. Midwest Studies in Philosophy 10 (1):615-78.

inferential-role semantics appears as part of some future scientific theory is itself an empirical question. As noted in section 1.1, truth empiricism allows that scientific inquiry might convince us that semantic properties like truth supervene on, reduce to, or turn out on *a posteriori* grounds to be identical with some other properties. Inferential-role semantics, if correct, would amount to a scientifically licensed reduction of semantics to syntactic properties. This does not pose a challenge to truth empiricism.

1.2.1.2. Concerning Validity

A more pressing objection to the truth empiricist: if our cognitive psychology is to model our logical abilities, it must provide an explanation of our capacity to recognize valid arguments and employ valid reasoning. But validity is a matter of truth preservation—an argument is valid just in case the truth of the premises guarantees the truth of the conclusion. How then could there be a cognitive psychology that doesn't take account of truth? This objection has more force than the objection from inferential-role semantics, since it purports to show that *any* complete cognitive psychology *must* include a notion of truth.

There are two distinct worries about first-order validity for the truth empiricist. First, how can we explain our ability to recognize first-order valid arguments without positing a notion of truth? Second, how do we explain our ability to reason validly in first-order logic without positing a notion of truth? The truth empiricist's task is to show that it is (or at least might be) possible to explain our ability to sort out valid arguments from invalid arguments without including a truth property as part of the explanation and

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then to show how the arguments we classify as 'valid' are produced by the human cognitive system, again without invoking a notion of truth.

So, is it possible to explain our ability to recognize valid arguments without positing a notion of truth? Although we say that valid arguments are the ones that preserve truth from premises to conclusion, the relation that needs to hold between the set of premises and the conclusion in order for an argument to count as valid—in first order logic—is a syntactic relation. It is necessary and sufficient for an argument to be first-order valid that the conclusion can be derived from the premises via a finite number of applications of inference rules, and these inference rules are defined according to the syntax of the language. The validity of an argument does not depend on the semantics of the sentences involved. It is therefore possible to describe a machine that recognizes first-order valid arguments without invoking a notion of truth.

A truth rationalist might continue to press. There are many syntactically definable inference rules that do *not* preserve truth. The rationalist might demand an explanation of why humans pay special attention to the inference rules that constitute first-order validity rather than some other set of rules that fail to preserve truth. In other words, how can we explain why we treat valid arguments as special without adverting to a notion of truth?

This question poses a problem for the truth empiricist only if there is nothing special about valid arguments that might explain our interest in them aside from the fact that they preserve truth from premises to conclusion. But this is not the case, as valid arguments are useful and interesting for all sorts of reasons. Take, for example, an agent

who accepts the sentences "That fence is electrified" and "If that fence is electrified, then I should avoid touching it" and who also accepts standard first-order inference rules. This agent will derive the sentence "I should avoid touching that fence." Assuming that the fence is in fact electrified, the agent is much better off having made the inference they did. Compare a different agent who starts with the same first two sentences, but who accepts an invalid inference rule: If P then Q, P, therefore Not-Q. This agent will get electrocuted. Clearly, employing the first sort of inference rule is a better strategy. The truth empiricist can reply to the rationalist along these lines, i.e. that our interest in what we typically classify as valid arguments might be best explained ultimately in terms of successful strategies.

Do we need a notion of truth to explain why one strategy is more successful than another? In general this is not the case. In chess, one relatively successful strategy is to trade a knight for a queen whenever possible; a relatively unsuccessful strategy is to trade a queen for a knight whenever possible. The best explanation of the relative strengths of these strategies does not need to mention truth. It only needs to mention the benefits conferred by certain types of behavior under certain types of circumstances. The same might plausibly hold of cognitive strategies. The fact that using valid inference rules contributes to the organism's success under various circumstances might be best explained by mentioning the benefits that tend to be produced by those cognitive behaviors under various kinds of circumstances.

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So there seems to be no special problem for truth empiricism stemming from our ability to recognize valid arguments. What about our ability to reason validly? Can we explain this ability without invoking a notion of truth?

The first thing to note is that our modern conception of a valid argument was not developed with any high degree of precision or perspicuity until Gottlieb Frege wrote the *Begriffsschrift*.[19] The second thing to note is that humans require a great deal of training and instruction to be able to reason validly—this usually involves taking a course at the college level to obtain even a minimal degree of mastery. Far from being part of our nature as rational beings, the human's ability to construct valid arguments is the product of ingenuity and a lot of training at the use of the predicate calculus. If the invention of the predicate calculus and the process of learning how to use it can be implemented on a computer, then these achievements can be modeled in purely syntactic terms. It is surely an open empirical question whether or not this implementation can be achieved, so it is an open empirical question whether truth will feature in the explanation of our ability to reason validly.

The fact that logicians take themselves to be working out the truth-values of sentences is no reason to think that the best explanation of what they are actually doing will mention the notion of truth. Psychoanalysts take themselves to be detecting and relieving conflicts within the subconscious depths of their patients, but of course that is no reason in itself to suppose that people really do suffer from conflicts residing in the

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[19] Frege, G. (1997). Begriffsschrift. A formula language of pure thought modelled on that of arithmetic. In Michael Beaney (ed.), The Frege Reader. Blackwell.

depths of their subconscious. Future psychologists might reject the existence of truth-values just as surely as contemporary psychologists might reject the reality of Freudian neuroses.

What about higher-order inference? Consider the second-order inference from "Derek weighs more than 5 kilograms" and "Melissa weighs more than 5 kilograms" to "There is some property that Derek and Melissa share." We naturally consider this to be a valid inference, but it is a corollary of Gödel's incompleteness theorem that second-order logic does not admit of a complete proof theory. There is no way to give a completely syntactic account of second-order validity. We could characterize the validity of this inference using a model-theoretic definition according to which an inference is valid just in case every model of the premises is a model of the conclusion, but that seems to require introducing a notion of truth-in-a-model. If model theory is the only way to capture higher-order validity, and if our cognitive psychology must explain our judgments of higher-order validity, what can the truth empiricist say?

First, since there are only finitely many second-order inference schemas that we recognize as valid, we can treat these schema as primitive inference rules in our psychology. We can (trivially) specify their syntactic form. Therefore, we can give a fully syntactic account of all of the second-order inference rules we in fact accept.

Alternatively, the truth empiricist can make the case that model theory as it is currently understood can be interpreted without a notion of truth. According to the model-theoretic approach to validity, an inference is valid just in case every model of the premises is a model of the conclusion. What is a model, and what does it mean for

something to be a model of a set of sentences? Usually these notions are understood either in mathematical terms or in terms of a correspondence relation between an organism and its environment broadly construed—i.e. the universe. The mathematical understanding sees models as abstract entities; each model is an ordered pair consisting of a domain—a set of abstract objects—and an interpretation function that maps terms in the language to objects in the domain, n-place predicates to n-tuples of objects in the domain, and which maps function symbols to functions defined in the domain. Truth in a model is defined recursively according to the syntax of the language as a function of the interpretations of the syntactic constituents of well-formed formulas. The correspondence understanding works in just the same way except that the domain of the model consists of objects in the actual universe.

The truth empiricist should point out that these are not the only ways to understand what model-theoretic semantics is about. In the ultimate science of cognition, models might be understood as internal representations, parts of the cognitive economy posited by cognitive psychologists in addition to LOT sentences in order to explain the behaviors of cognitive agents. In principle, the domains of our internal models could be 'generated' by a syntactically specified program in just the same way that a domain of videogame characters can be generated by a set of syntactic strings in the computer programming language. Our LOT sentences can then be 'interpreted' according to these internal models, and this interpretation function can be treated as a syntactic operation performed within the agent itself. The internal models constructed by the agent can be modified according to the sentences they accept. The result is a fully syntactic

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characterization of contemporary model theory for the language of thought, where the 'semantic' interpretation of LOT sentences is given by a syntactic object, a computer generated model, 'inside the head' of the cognitive agent.

What now of the claim that modeling second-order inference will force cognitive psychology to adopt a notion of truth? Consider again our example of a second-order inference. Upon accepting the sentence "Derek weighs more than 5 kilograms," the domain of the agent's internal model acquires a new individual and that individual is included in the 'extension' of the predicate "weighs more than 5 kilograms." Another individual is added upon accepting "Melissa weighs more than 5 kilograms," and that individual is similarly included in the 'extension' of that predicate. These individuals are just entities inside the generated model inside the agent's head. Each of these generation operations, since they can be implemented on a computer, admits of a completely syntactic description. We can also give a completely syntactic description of a program that decides whether any predicate of the system's language of thought has an extension to which both of these two individuals belong. Using this program, the agent's cognitive system checks and affirms that the inference holds. Thus, the judgment of second-order validity can be modeled without invoking a notion of truth. Whether the best cognitive psychology will pursue something like this kind of syntactic explanation is an open empirical question, but clearly there is a possibility that truth will not be essential to the best explanation of second-order inference. Even if something very similar to contemporary model theory is the right way to do semantics, that does not guarantee that truth will feature in any scientific explanations.

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1.2.1.3. Representing the Environment

Even if our inference practices can be modeled without invoking a truth property, how can the cognitive psychologist hope to address the relation between organism and environment without invoking a notion of truth? After all, what good is cognition if the organism is unable to arrive at *true* beliefs about the environment?

Certainly any adequate theory of cognition must explain the relation between organism and environment. Truth empiricism cannot be accepted if that explanation *must* posit the existence of a truth property. I'll argue there is no such requirement. The relation between organism and environment might be best understood in terms of truth, but it also might ultimately be explained some other way. I will describe an alternative to a truth-based understanding according to which the cognitive relations between organism and environment are modeled in terms of Shannon information, and show why such a theory does not need a notion of truth.

Claude Shannon expressly disavows that the theory of information needs a notion of truth in the second paragraph of his famous essay "A Mathematical Theory of Communication."[20] There he writes

> Frequently [messages] have meaning; that is they refer to or are correlated according to some system with certain physical or conceptual entities. These semantic aspects of communication are irrelevant to the engineering problem.[21]

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[20] Shannon, C. (1948) A Mathematical Theory of Communication. *Bell System Technical Journal* **27** (3): 379–423.
[21] Loc. Cit. pp. 379.

Shannon's theory of information is a description of the mathematical properties of systems that are connected in a way that makes it possible to send signals from one system to the other. The states of the systems and the signals that are sent between them are not given semantic interpretations. The theory does not require that the states or the signals have truth-values, truth conditions, or any other semantic content.

The kind of theory I have in mind treats the relation between organism and environment as an instance of what Shannon calls a 'communication system.' The environment is treated as the information source—it generates 'messages' from a stock of possible messages. The possible messages are just possible states of the environment. What it is for the environment to generate a message at a given time is just for it to be in one of its possible states at that time. Messages are generated according to a probability distribution determined by the past and the laws of nature (in the usual way). The stock of possible messages is allowed to be infinite and continuous but can also be modeled as finite and discrete (if, for instance, only a subset of the possible states of the environment are interesting to the cognitive scientist in some context, or if the organism can only detect a finite number of states of the environment). The messages that can be received by the organism are those that can be encoded in some physical medium—a sound wave, a stream of photons, a chemical compound, etc. The physical medium is the channel of the communication system; it carries the signal, which is the output of a function that maps possible messages into possible states of the channel. According to Shannon's template, a signal is encoded in the channel via the operation of a transmitter. In the physical environment, transmitters are the events that produce signals in the appropriate

media, e.g. the event of an array of photons being emitted from the surfaces of objects in the visual field. Transmitters implement or realize the function from messages into states of the channel. The organism's sense organs are the receivers. A receiver performs the inverse operation of the transmitter. A receiver is an implementation of a function from states of the channel into states of the destination organism. The organism must have a distinct state for every distinct message it can receive. By receiving messages, the state of the organism co-varies with the state of the environment.

Starting from this basic framework, the organism's connection to its environment can be investigated as a puzzle about how the organism makes use of various signal-bearing channels to receive messages from the environment, how its sense organs implement a function that inverts the operation of the transmission events, and how it makes use of its own internal states to efficiently encode incoming messages. Shannon identifies the average amount of information generated by the environment as the entropy H of a random variable that ranges over the possible messages that the environment could generate, where each possible message is associated with a probability p_i of its occurring and H is determined by multiplying each p_i by log (p_i) and summing all the products together. H represents the highest average amount of information the organism can receive from the environment. Understanding whether, and how, the organism manages to maximize its information uptake is a reverse engineering problem. Shannon's theory provides the mathematical tools to model the efficiency of the organism's internal 'code' for receiving messages, the amount of noise present in the channel, and many more

aspects of the situation. (This brief summary doesn't even scratch the surface of a full information-theoretic account of the organism-environment relation.)

Most important for our purposes: a theory that describes these various aspects of the organism-environment connection does not need to mention truth or content, even if the organism uses LOT sentences to handle and organize incoming messages from the environment. The organism's LOT sentences will carry information concerning the state of the environment, but those sentences do not need to be assigned semantic contents nor need they ever be counted as true for the theory to deliver informative explanations of what is going on. Moreover, Shannon information relations between organism and environment by themselves are insufficient to ground a theory of content. This fact is clearly articulated by Fred Dretske in his book *Knowledge and the Flow of Information*.[22] The problem is that internal states are promiscuous concerning what they carry information about. Each internal state of the organism carries information about many different incompatible states of the environment at once, in the sense that each internal state is associated with non-zero probabilities of many different incompatible messages. The atomic LOT sentence F*a* in a given cognitive system might carry information about the presence of a stain on the rug, the mood of the agent's mother, the time of day, the fact that the agent's little sister spilled paint, the possibility that the agent's little brother spilled paint, the fact that the agent's cognitive system is functioning properly, the possibility that it's not, and so on and on. The fact that a LOT sentence S in the cognitive economy of an organism carries Shannon information does not entail that S expresses a

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[22] Dretske, F. (1981). Knowledge and the Flow of Information. MIT Press.

proposition. Thus, not only are contents and truth-values not required by a theory that treats the organism-environment relation as a communication system; that relation does not support a reductive analysis of truth or content.

This completes the case in favor of truth empiricism in the cognitive domain. I've argued that there are prospects for constructing psychological theories of rational inference and of our ability to represent the environment without positing a truth property. Since it is an open empirical question whether our best theories in cognitive psychology will follow the approaches I've sketched, it is also an empirical question whether a notion of truth will be part of such theories.

1.2.2. Linguistics without a Truth Property

The other likely place to find a requirement placed on the sciences to include a notion of truth is within the science of linguistics. In this section, I address the question of whether linguistics must posit a truth property. I will argue that it need not.

As in the last section, the first thing to note in connection with this issue is that there are approaches to linguistics that do not invoke a notion of truth. Researchers in Noam Chomsky's minimalist program attempt to give explanations of all linguistic phenomena without doing any semantics at all.[23] There are also versions of process-oriented dynamic semantics where the 'meanings' of declarative sentences are identified as programming statements of an imperative programming language. According to these

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[23] Noam Chomsky (1995). The Minimalist Program. The Mit Press.

theories, declarative sentences instruct the cognitive system to perform an action. A truth property plays no role in either of these approaches. Since it is an open question whether one of these approaches will ultimately be vindicated by empirical evidence, it is also an open empirical question whether truth will appear in our more advanced theories of linguistics.

The truth empiricist can also draw on the arguments given in the previous section to support the claim that linguists are not required to posit truth. Since linguistic behavior is a species of intelligent behavior, it is reasonable to expect that a complete cognitive psychology could in principle provide a complete explanation of linguistic behavior. If the considerations raised in the last section are correct, future cognitive science might not employ a notion of truth. Thus, it is possible that someday linguistics will be reduced to a semantics-free cognitive psychology.

Detractors of truth empiricism might insist that linguistics has a special obligation to account for data about truth, that the existence of true sentences is just part of what the theory is required to explain. The objection goes: linguistics cannot deny the existence of truth any more than meteorology can deny the existence of weather; to do so would be to abandon the science altogether.

I think the analogy between linguistics and meteorology breaks down precisely because weather is directly observable but truth is not. It may be commonsensical that there are true sentences, but this is not because it is immediately apparent that some sentences are true in the same way that it is immediately apparent that there is weather. If you ask a person to say what a cloud is, what rain and wind are, they can just point. If

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you ask a person to say what truth is, they will sputter. They might produce some examples of true sentences, but they cannot demonstrate the truth property itself. This is not the case for all properties; the property of being red can be demonstrated. Unlike clouds and the property of being red, which may be observed, truth is a theoretical property that we assign to thoughts and sentences as part of an explanatory project. Truth is not part of the data to be explained.

One last objection that I will consider comes from Barbara Partee, or at least I thought of it while reading her work on the syntax-semantics interface.[24] Partee discusses what she calls the division of labor between syntax and semantics. A given linguistic puzzle might be intractable as a puzzle as approached by syntacticians, but might be relatively easy to resolve when considered from the point of view of semantics. This situation testifies to the existence of semantic properties, *inter alia* truth, for how else could there be a way of solving linguistic puzzles that resist syntactic analysis?

Although there may be a real issue about whether a given puzzle belongs to syntax or semantics, it seems equally possible that recasting syntactic puzzles as semantic ones might someday be seen as a sort of buck-passing. Provided that there really are semantic properties, it makes sense to assume that some puzzles that appear to be issues in the theory of syntax might turn out to be semantic in nature, and that we could make progress by recognizing such cases and working on them in the appropriate domain. But the fact that people currently take themselves to be solving problems in syntax by giving

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[24] Partee, B. In Press. A brief history of the syntax-semantics interface in Western formal linguistics. *Semantics-Syntax Interface.*

semantic theories does not guarantee that these solutions will hold up when more is understood. It does not give us anything like an *a priori* reason to believe that semantic properties *must* exist. At best, it gives us some evidence that they do exist, but this is compatible with the ultimate rejection of a truth property by linguists when more evidence is accounted for. Thus, the question of truth in linguistics remains open.

1.3. Sociology without a Truth Property

Devitt claims that posting truth helps us make sense of the ways in which members of a society use their symbols. Might it be the case that sociology must make use of a truth property? It seems not.

Sociology textbooks do not typically invoke a notion of truth. There is no explicit use for such a concept in most sociology theories. Theories of social stratification, class, social mobility, sexuality, religion—these do not seem to need to posit a truth property. If any part of social theory must make use of a notion of truth, perhaps it is in the theory of law. Whether or not someone is telling the truth is of critical significance in courtroom settings. However, whatever the proper courtroom behavior is, there should not be a special problem characterizing it in the terms of psychology and linguistics. Assuming that both psychology and linguistics can in principle be pursued without positing the existence of truth, the possibility that legal theory might follow suit is a clear empirical possibility.

Beyond studying the law, why should sociology have special need of such a property? Presumably cognitive psychology will explain why people act the way they do in the presence of certain utterances—e.g. why the people get angry when the president declares war. Linguistics will characterize the languages spoken in various cultures. What in sociology is left to explain that might require truth? I can think of nothing.

This completes the prima facie argument for truth empiricism. It is an open empirical question whether any advanced science will posit the existence of truth, so given a naturalistic approach to ontology, it is an open empirical question whether truth exists. In the next section, I engage with an argument intended to show that this conclusion is incoherent.

Section 2:   Boghossian's *A Priori* Argument for Truth Realism

In the closing paragraph of "The Status of Content," Boghossian summarizes his

argument thus:

> Much as Descartes's *cogito* argument may be understood to have shown that I cannot
> make sense of the suggestion that I do not exist, by showing that the claim that I do exist
> is a presupposition of the most refined attempt to deny that I do; so the present argument
> should be understood as showing that we cannot make sense of the claim that our
> thoughts and utterances do not possess robust truth conditions by showing that the claim
> that they do possess robust truth conditions is a presupposition of the most refined
> attempt to deny that they do.

The truth empiricist must reply. Much as David Hume's empirical search for the

self—the presupposition that such a search could possibly be fruitful—challenged the

conclusion of Descartes's *cogito*, so the doctrine of truth empiricism challenges the

conclusion of Boghossian's argument. If the existence and nature of truth are to be

treated as open empirical questions, then it must be possible for science to reveal that no

thought and no utterance has the property of being true.[25] Boghossian's argument

opposes this possibility by purporting to show that some sentences must have 'robust'

(not merely deflationary) truth conditions, from which it follows that some sentences are

true and that the predicate "is true" denotes a property. In this section, I critically engage

Boghossian's argument and show that it falls well short of deciding the issue against truth

empiricism.

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[25] We may suppose that thoughts and utterances may be counted among the entities
recognized by our best sciences even in the absence of a notion of truth; such entities
would presumably be typed according to their syntactic structure, their causal powers, or
some other non-semantic property.

Boghossian begins his argument for the existence of robust truth conditions with a consideration about what is necessary for an "irrealist conception of a given region of discourse." In order to deny that anything is F, Boghossian tells us, we must hold one of two positions:

ERROR: The predicate "F" denotes a property that nothing instantiates.

FAILURE: The predicate "F" fails to denote a property.

I pause to register the fact that, by setting up the debate over the existence of truth within the framework of the linguistic turn, Boghossian has already taken the high ground. By accepting that ERROR and FAILURE exhaust the options for the truth empiricist, we are agreeing to debate the existence of truth by debating about the extension of the predicate "is true." We are agreeing to presuppose that a debate over what exists is really a debate within semantics. This is precisely the thesis that Michael Devitt urges us to resist on truth empiricist grounds! Moreover, the notion of a predicate's extension is part of semantics and is very closely related to the notion of a truth-value. An atomic sentence Fx is true iff the object picked out by x is in the extension of the predicate F. The intelligibility of the notion of an extension in the absence of truth is questionable. This close connection between extension and truth might reasonably lead us to suspect that a question or two has been begged from the outset. I will return to these considerations after dealing with Boghossian's argument on its own terms.

Suppose for now that one who denies the existence of Fs must be an ERROR theorist or a FAILURE theorist concerning the predicate "F." Boghossian argues that

neither of these are consistent options when it comes to denying the existence of non-deflationary truth conditions, so non-deflationary truth conditions must exist. A direct corollary of his *a priori* argument is that some sentences are true.

Boghossian's argument against the ERROR theorist is relatively straightforward. If you are an ERROR theorist about truth conditions, then you hold that for all P the predicate "has truth condition P" denotes a property which nothing instantiates.[26] The extension of "has truth condition P" is therefore empty, so all atomic sentences of the form "x has truth condition P" must be false. By the disquotational property of the truth predicate, "x has truth condition P" is true iff x has truth condition P. It follows that no sentence has a truth condition.[27] But sentences can only be false if they have truth conditions, so according to the ERROR theorist, no sentences are false. Therefore, the ERROR theorist must hold that all sentences of the form "x has truth condition P" are false and also not false. This is a contradiction, so the ERROR theory about truth conditions can't be right.[28]

The argument is contentious at least in its use of the 'disquotational property of the truth predicate,' which presupposes that bivalence holds for every sentence in the

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[26] P is a substitutional variable that ranges over sentences. Following Boghossian, I freely make use of substitutional quantification throughout.

[28] Technically, it is not a contradiction unless we add the claim that sentences of the relevant form exist. If there are no sentences of the form "x has truth condition P," then the ERROR theorist is not committed to anything being both false and not false. To deny that there are such sentences would be bizarre (by our current lights, at any rate) but the logical possibility is left open.

language. An irrealist following Michael Dummett would reject this assumption,[29] and therefore would reject Boghossian's argument at this point.

So, some sentence of the form "x has truth condition P" must be true, unless (for all P) the predicate "has truth condition P" fails to denote a property, in which case all such sentences will lack a truth-value entirely. Therefore, we know *a priori* that some truth exists (something is true) unless FAILURE is the correct account of the predicate "has truth condition P." Boghossian's next argument aims to show that accepting FAILURE also involves accepting a contradiction. This argument is significantly more complex.

Boghossian begins with the observation that (according to our most widely accepted truth-conditional semantic theories!) if a predicate F fails to denote a property, then any atomic sentence F*x* will fail to have any truth conditions. A FAILURE theorist about truth conditions says that the predicate "has truth condition P" fails to denote a property, and so must be committed to

LACK: All atomic sentences of the form "S has truth condition P" lack truth conditions.

Boghossian also argues that if the predicate "has truth condition P" fails to denote a property, then so too must the predicate "true" fail to denote a property. He says: "[Since] the truth value of a sentence is fully determined by its truth conditions and the relevant worldly facts…there is no way…that a sentence's possessing a truth value could be a thoroughly factual matter ("true" does express a property) if there is non-factuality in

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[29] Michael Dummett (1973). The Philosophical Basis of Intuitionistic Logic. In , Truth and Other Enigmas. Duckworth. 215--247.

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one of its determinants ("has truth condition p" does not express a property)."[30] The idea

here is that if there are no truth conditions, there is no way for a sentence to be true.

Hence, according to Boghossian, a FAILURE theorist is also committed to

> **TRUELESS**:   "true" does not denote a property.

So FAILURE-type irrealism about truth conditions supposedly entails both

LACK and TRUELESS. But, Boghossian claims, LACK and TRUELESS are

incompatible: LACK implies the negation of TRUELESS. Thus, FAILURE implies a

contradiction: "true" does and does not denote a property. Together with the result of the

earlier argument, this entails that there must be some true sentence of the form "x has

truth condition P."

Why should we think that LACK implies the negation of TRUELESS?

Boghossian argues from the following three claims:

> **NONFACTUAL**:   LACK constitutes non-factualism about a certain
> domain of discourse, viz. sentences that ascribe
> truth conditions.
>
> **DEFLATED**:   TRUELESS entails some deflationary account of
> truth.
>
> **PANFACTUALISM**:   Deflationary accounts of truth are incompatible with
> non-factualism about any domain of discourse.

Boghossian defines non-factualism about a given domain of discourse D as the

claim that sentences in D lack truth conditions. A domain of discourse is a collection of

sentences that all use some definitive predicate(s). For instance, you might define the

domain of moral discourse as the collection of sentences that are constituted in part by

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[30] Boghossian, op. cit. pp. 175, parentheses in original.

the predicate "is good." LACK is the claim that sentences in the domain of discourse

defined by predicates of the form "has truth condition P" lack truth conditions; so

NONFACTUAL is guaranteed by definition.

Thus, whether FAILURE really implies a contradiction depends on the status of

DEFLATED and PANFACTUALISM. Granting the rest of Boghossian's argument

(including his controversial starting point), the viability of truth empiricism depends on

the plausibility of rejecting either one or both of DEFLATED and PANFACTUALISM.

I will argue against both of these claims in a moment, but first I pause to flag a

serious error in Boghossian's argument against content irrealism. The error is not

directly of use to the truth empiricist, but it is devastating to Boghossian's claim to have

shown that irrealism about truth conditions is incoherent. The problem concerns the

argument deriving TRUELESS from the claim that the predicate "has truth condition P"

fails to denote a property. This argument fails unless one is already committed to the

idea that a true sentence necessarily possesses an additional aspect beyond its truth, a

content that determines its truth-value under various possible circumstances. But the idea

that a true sentence must have some additional property—some content—in order for it to

be true is not compulsory. A proponent of extensional logic in the mold of Quine readily

rejects the idea that sentences are to be associated with functions from conditions (e.g.

states of affairs, situations, possibilities, etc.) to truth-values, yet such a Quinean need not

accept that "true" fails to have an extension. The extensionalist may count sentences as

true and false but reject proprietary truth *conditions* as creatures of darkness. A Quinean

extensionalist might be happy say that a true sentence is a member of the class of all true

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sentences, and thus happy to count all true sentences as the non-proprietary truth conditions of any true sentence. The creature of darkness is a special property of a sentence that gives it distinct truth conditions from every other true sentence, and the Quinean extensionalist denies that these special properties exist. Along related lines, another kind of Quinean might hold that the only bearers of truth—the only things "is true" may be correctly predicated of—are whole theories. Such a Quinean might reject the claim that sentences have truth conditions, yet maintain that many theories are true. These two Quinean positions show that it is logically possible to accept LACK without accepting TRUELESS. Therefore, it is possible to maintain that there is a property of truth without accepting that there are such things as truth conditions. As Boghossian takes care to insist, "the essential *core* of the ordinary notion of content does consist simply in the idea of a truth condition [.]" Hence, the fact that he fails to show a contradiction in the prospect of abandoning our commitment to truth conditions leaves the status of content very much up in the air.

However, these considerations do not alleviate the concerns of the truth empiricist who wants to argue that TRUELESS is not ruled out *a priori*. The truth empiricist must show that there is no contradiction implicit in accepting that "true" fails to denote a property. Moreover, if sentences do have truth conditions, then some sentence of the form "S has truth condition P" will be true, so the truth empiricist must also accept that LACK is consistent with TRUELESS. So Boghossian's argument must be confronted; the truth empiricist must rule out either DEFLATED or PANFACTUALISM.

I will argue that both may be rejected. I will begin with a discussion of PANFACTUALISM. According to PANFACTUALISM, deflationary theories of truth are incompatible with non-factualism about any domain of discourse. Why should this be so?

Deflationary theories of truth are so-called because they eschew the need for a theory of truth that includes more than the set of T-sentences for a given language. T-sentences are sentences formed by substituting sentences from a certain class, known as the 'substitution class,' for the letter S in the schema: "S" is true if and only if S. The deflationist thinks nothing else is required to grasp the notion of truth beyond accepting the correct set of T-sentences. The theory of truth just is the correct set of T-sentences. Which set of T-sentences is the correct one? The correct set includes all and only the T-sentences formed by substituting the meaningful declarative sentences of the language under investigation. Hence, the theory of truth for English should include **"Snow is white" is true iff snow is white**, but not **"Is snow white?" is true iff is snow white?** since that sentence is not declarative, and not **"The nothing noths" is true iff the nothing noths** because that sentence is not meaningful.

Why should deflationary theories of truth rule out every form of non-factualism? Recall that non-factualism about domain D is defined as the claim that sentences of D lack truth-conditions. Boghossian claims that deflationary theories of truth automatically assign truth-conditions to every meaningful declarative sentence. Every sentence "S" in every domain of discourse is to be understood as having a truth condition given by: "S" is true iff S. There cannot be a domain of discourse the sentences of which lack truth

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conditions. Therefore, Boghossian concludes, deflationary theories entail that non-factualism cannot be correct for any domain of discourse.

The problem with this argument is that deflationary theories (as characterized) rely on an unanalyzed and unexplained notion of 'meaningfulness.'[31] Since only the meaningful declarative sentences of a language are included in the substitution class that defines the correct set of T-sentences for the truth theory of that language, only *meaningful* declarative sentences are automatically assigned truth conditions by the deflationary theory. It is thus open to the non-factualist about truth conditions to claim that sentences employing predicates of the form "has truth condition P" are not meaningful, and do not feature in any of the language's truth-definitive T-sentences. Deflationary truth theorists who are proponents of other brands of non-factualism can claim that sentences in the domain they suspect of being non-factual are also meaningless. For example, Boghossian accuses A. J. Ayer of endorsing this inconsistency. Ayer holds both a deflationary theory of truth and endorses non-factualism about the predicate "good," so according to Boghossian, Ayer must be inconsistent. But Ayer also endorses an empiricist criterion of significance that is explicitly meant to count moral claims as meaningless, so presumably Ayer would deny that sentences employing the predicate "good" should feature in the theory of truth.

One would surely expect a proponent of a FAILURE theory of the predicate "has truth conditions" to treat sentences composed of that predicate as meaningless. In order to block this reply, Boghossian would need to add a claim to the effect that sentences

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[31] Boghossian calls it 'significance.'

using predicates of the form "has truth condition P" are meaningful, but given the connection between being meaningful and having truth conditions, this additional claim might properly be ignored as question-begging. Thus, the truth empiricist is warranted in rejecting PANFACTUALISM.

The truth empiricist can also rule out DEFLATED. Boghossian claims that accepting TRUELESS forces one to accept a deflationary theory of truth, but why should that be so? According to the truth empiricist, it is an open question whether even the T-sentences will be part of our best scientific theories. From the empiricist point of view, the possibility that there is no truth is akin to the possibility that there is no phlogiston. We don't need a deflationary theory of phlogiston; we don't need *any* theory of phlogiston. Likewise, the truth empiricist thinks that we might not need any theory of truth. It is therefore not the case that denying the existence of truth commits us to a deflationary theory of truth, so DEFLATED may be rejected too.

At this point, it should be clear that Boghossian's argument fails on its own terms. What about Boghossian's starting position? Must the truth empiricist agree that the only viable options for a truth irrealist are ERROR and FAILURE? I think not.

Recall, Boghossian thinks that a debate over the existence of Fs must be understood as a debate about the extension of the predicate "F." Framing the debate about truth conditions in this way leads us close to contradiction (although, as we saw, there is really no contradiction involved in denying that "has truth condition P" has an extension), but must the debate be conducted in terms of predicate extensions? In our discussion of DEFLATED, we touched on the possibility of casting the issue in a

different light. If we accept ontological naturalism—the claim that we are ontologically committed to all and only those entities posited by our best scientific theories—then a debate about Fs can take the form of a debate about scientific theories. If Theory 1 posits Fs and Theory 2 does not, then whether we accept the existence of Fs depends just on which theory we accept. If this is how we understand questions about the existence and nature of truth, the threat of paradox is completely removed. Or is it?

2.1. **Is Truth Empiricism Paradoxical in Some Other Way?**

If it is not paradoxical to debate the nature of truth by debating over scientific theories, then it must be felicitous for a scientist to announce that, according to our best theories, there is no truth property. But is this felicitous? When asked, "What about the existence of truth?" perhaps scientist tends to reply, "I have no need of that hypothesis." Does such a theory lead to paradox? Doesn't it entail, for example, that this sentence is not true?

Suppose a far-out quantum physicist says: "There are no sentences. The only things that exists are quantum fields." At first glance, this appears to be a contradiction. But there is no contradiction in the claim itself. The claim doesn't entail that there are sentences. The theory itself entails that there are *no* sentences. It doesn't matter to the physicist that we would describe the situation as one in which someone just uttered a sentence, since they reject our theory of what has just happened. If we wanted to argue that the physicist should accept our theory, we would have to confront them with evidence to the effect that there are sentences. But suppose their theory accounts for all

of the evidence we present, and suppose that it makes all sorts of important predictions and gives many explanations that are not available via the theory that posits sentences. The physicist would reject our theory for the same reasons they accept the only-quantum-fields theory.

The situation is similar in the case of the scientist who announces that there is no truth property. Presumably by their lights there is no paradox in this statement—perhaps they even dropped the truth property from their theory precisely to deal with the Liar sentence. The fact that we want to describe the world using the word "true" does not move the scientist. They have their reasons for rejecting our theory. The fact that we would describe them as saying something paradoxical is not a reason for them to abandon their theory—from their point of view, we are confused. The truth empiricist can point to this kind of description to defuse the worry that debating the existence of truth is paradoxical.

Another paradoxical situation: if evidence is that which empirically supports the truth of a claim, how can there be empirical evidence for truth nihilism? The truth empiricist may grant that evidence might be that which empirically supports the truth of a claim, but the empiricist should deny that we know this on *a priori* grounds. Whether there is an important connection between evidence and truth is an empirical question, due in part to the fact that the existence of truth is a question to be decided on the basis of evidence. It might turn out that the best theory of evidence invokes a notion of truth, but it might also turn out otherwise.

The truth rationalist might continue to press: but isn't truth the aim of science? Don't we employ the scientific method so as to arrive at true beliefs about the universe? The empiricist responds along similar lines. Whether science aims at truth is itself an empirical question.

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