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LINGVISTIK OCH VETENSKAPSTEORI**

WHAT IS A NEUTRAL CRITERION OF ONTOLOGICAL COMMITMENT?

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Abstract

In this paper I raise the question of what counts as a neutral criterion of ontological commitment. I claim that the neutrality of a criterion should be measured by the neutrality of the method it provides for determining ontological commitment. Explicit criteria provide methods for determining ontological commitment while implicit criteria do not, and therefore competing explicit criteria may be compared and evaluated on the basis of neutrality while implicit criteria may not. Further, I suggest that the question of neutrality for explicit criteria is a question of topic-neutrality. In the light of these claims, I argue that the reason that Armstrong (2004) gives for his proposal to replace Quine's criterion with a truthmaker criterion fails.

1 Introduction

In this paper[1] I raise the question of what counts as a neutral criterion of ontological commitment. The habit of investigating the ontological commitments of a discourse is due to W. V. O. Quine, who coined the term in his (1948) and proposed a criterion of ontological commitment[2]. A criterion of ontological commitment is a criterion of what there is according to a theory[3]. The problem is that it is not straightforward what it means that something exists according to a theory since there is no straightforward construal of the notion "according to". To be useful in situations of theory-choice and philosophical debate, a criterion must be ontologically neutral. It should not impose ontological assumptions upon the theory under consideration, i.e. it should not sneak in any commitments from the outside and not rule out any commitments that a theory might harbor. As Philip Bricker figuratively puts it, a criterion is neutral when it "lets the theory speak for itself" (Bricker, 2014). I claim that only explicit criteria of ontological commitment are able to achieve neutrality while implicit criteria are not. The explicit commitments of a theory are what the theory says there is while implicit commitments are defined by Stephan Krämer (2014) simply as non-explicit commitment. Howard Peacock (2011) characterizes implicit commitment as "the entities that must be reckoned among the ontological cost of a theory." (Peacock 2011, 84). To ask about the ontological cost of a theory is to ask what there is, given that the theory is true. Peacock uses the phrase "ontic preconditions" to describe the entities that are among the ontological cost of

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[1] This is a Master's Essay submitted in 2017 at University of Gothenburg under the supervision of Anna-Sofia Maurin.

[2] The theme is developed already in Quine (1939), where Quine discusses what entities there are from the point of view of a given language and delivers what is to become the slogan for his criterion: "To be is to be the value of a variable" (Quine 1939, 199).

[3] I adopt Krämer's (2014) use of the term "theory". By "theory" I mean any set of sentences of some interpreted language. This includes a sentence's singleton. It is assumed that the commitments of a sentence are identical to the commitments of its singleton. In contrast to common use of the term in logic, to count as a theory here a set of sentences does not have to be closed under logical consequence (i.e. include all its logical consequences as members).

a theory. Presumably there are theories in which the explicit commitments and the ontic preconditions are the same, but there are also theories in which the ontic preconditions seem to exceed the explicit commitments. The distinction between the explicit and the implicit commitments of a theory is a distinction between the existential claims of a theory and the existential presuppositions of a theory. An explicit criterion is hence a criterion of what a theory claims there is and an implicit criterion is a criterion of what there must be given that a theory is true. All an explicit criterion needs to do is to isolate the existential claims of a theory. It is an intelligible question whether a procedure for doing that can be pursued independently of ontological assumptions. It seems plausible that questions of neutrality for such a procedure depends on answers to the questions of how to define and demarcate topic-neutrality. This is discussed further in section three.

Implicit criteria give perhaps more interesting and intuitive construals of the notion of "according to", but I will argue that they are unable to say what a specific theory is committed to prior to the settlement of controversial metaphysical disputes. This is because implicit criteria are criteria that account for commitment that exceeds explicit commitment, and to account for that they need to capture the commitments that are entailed by the theory (entailment-based criteria), or they need to find out what entities makes the theory true (truthmaker criteria). In these cases the verdicts of the criterion depends on the notion of entailment employed or the account of truthmaking employed. Conflicting notions of entailment will give conflicting verdicts and conflicting accounts of truthmaking will give conflicting verdicts. Given a notion of entailment or truthmaking, the questions remains what the entailments of specific theories are and what the truthmakers for specific theories are. These questions seem to depend on assumptions about what exists and about what depends on what. There seems to be no procedure for determining the implicit commitments of a theory

independently of controversial metaphysical issues. This is discussed further in section two. D. M. Armstrong is explicit that his proposed truthmaker criterion of ontological commitment is "no easy and automatic road to the truth in such matters", and that "the hunt for truthmakers is as controversial and difficult as the enterprise of metaphysics". (Armstrong 2004, 23). This limits the utility of truthmaker criteria. They are hostages to the same ontological disputes that a criterion of ontological commitment is supposed to clarify. Armstrong claims that a truthmaker criterion is ontologically neutral since it allows any part of a sentence to contribute to its ontological cost. However, neutrality in this sense comes at the expense of the utility of the criterion. For a criterion to usefully play the roles that the notion of ontological commitment is supposed to play, I argue that it must be neutral in the sense that there is no room for disagreement about the verdicts of a given criterion. (Although there may be disagreement regarding which criterion to adopt in the first place). It seems to be the case that only explicit criteria can be neutral in this sense. Therefore an implicit criterion cannot be rationally preferable to another implicit criterion or to an explicit criterion on the basis that it is more neutral than the other. Armstrong (2004) argues that Quine's criterion is biased and proposes that a truthmaker criterion should replace Quine's criterion, suggesting that a truthmaker criterion is more neutral. (Armstrong 2004, 23-4). Since the truthmaker criterion is implicit it cannot be advocated on the basis of neutrality, in the sense of neutrality that is of relevance for a criterion if it is to be useful. Hence I claim that the charge against Quine's criterion fails to provide a reason for preferring the truthmaker criterion.

2 The roles of a criterion

A clear account of the distinction between explicit and implicit ontological commitment is crucial for the claims I make about neutrality with respect to explicit and implicit criteria and the claims I make about Armstrong's charges against Quine's criterion. Before explicating and discussing the distinction in detail in section three and four there are some general issues regarding the notion of ontological commitment that must be discussed, mainly regarding the roles that a criterion of ontological commitment is intended to play.

Quine provides various differing formulations of his criterion in his various works, but the core of the criterion is the semantic notion of values of variables. The criterion ascribes commitment to the entities that must be counted among the values of the bound variables of a theory:

> [A] theory is committed to those and only those entities to which the bound variables of the theory must be capable of referring in order that the affirmations made in the theory be true. (Quine 1948, 13-14).

It has been proven difficult to give viable construals of this criterion and competing criteria have been proposed to replace it, including Armstrong's truthmaker criterion. In order to be able to discuss the merits of various criteria of ontological commitment, whether this or that criterion is better or worse than some other, we need a sense of what we might expect it to do, of what kinds of situations a criterion should be expected to be useful in. There are two distinct roles for a criterion of ontological commitment to play, one is in situations of

comparison and evaluation of rival theories and the other is in situations of metaphysical debates. (Scheffler and Chomsky 1958, 82). These are situations in which Quine's criterion has been used.[4] Bricker (2014) calls them the foundational role and the polemical role, and I will use these names for them here. In situations of theory-choice a criterion is supposed to measure the ontological cost of theories. By doing that, it is supposed to provide a partial foundation for theory-choice. That is why it is called the foundational role. Ontological cost is relevant for theory-choice given Occam's Razor, the widely held assumption that ontological parsimony is a theoretical virtue. To be useful for assessment of the respective ontological cost of two competing theories, a criterion must not presuppose the truth of one of them. If the criterion presupposes the truth of an ontological theory it cannot compare the theory with other theories in a non-question-begging way. When the cost exceeds the explicit commitments, this seems to be impossible to do for some theories. Ontological disagreement turns into disagreement about the verdicts of the criterion of ontological commitment. To avoid this a criterion must be applicable in an automatic way in the sense that there is no room for disagreement about the verdicts given agreement on the criterion itself. It seems that this is only possible for explicit criteria.

In polemical situations, i.e. in situations of ontological disputes, a criterion is supposed to play a clarifying role by offering a common platform for the disputants and by providing rules for when a debate is over. In the following quotation Krämer (2014) gives a scenario that illustrates this role:

> Suppose you are engaged in an ontological dispute concerning numbers. You
> favour a number-free ontology, your opponent does not. Both of you are trying to

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[4] A paradigmatic example of the second kind of use of the criterion is Church (1958).

convince the other of their own position. The debate risks pointlessness absent a

rule accepted by both disputants stating at which point the game is over - stating,

that is, when one counts as having given up one's number-containing, or number-

free ontology. (Krämer 2014, 35).

Just as in the foundational role, for a criterion to set the rules for when a debate is over, it

must applicable in such a way that one is able to just *read off* the commitments of a sentence.

In this trivial sense it must be neutral: once the rules are accepted there should be nothing to

argue about regarding the result of the application of the rules. This trivial form of neutrality

seems to be a necessary requirement but not a sufficient condition for the non-trivial

neutrality that is discussed here (not imposing ontological assumptions on theories). More is

required for the non-trivial neutrality, presumably topic-neutral expressions of existence.

Quine intended for his criterion to play both the foundational role and the polemical role,

although he recognized that the prospects for the polemical role are limited, since the criterion

is only applicable to statements in what Quine considers to be the canonical notation: austere

first-order predicate logic.[5] Commitment can only be forced on someone if their statements

are couched in canonical notation, but if we paraphrase someone's statements in canonical

notation he may "protest that the unwelcome commitments which we impute to him depend

on unintended interpretations of his statements" (Quine 1953, 105). Quine's criterion is

intended to tell us what a regimented sentence is committed to, but it is not intended to tell us

how to regiment a sentence.[6] Still, we may invite contestants to provide regimented

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[5] It is austere because it lacks individual constants, i.e. expressions that play the roles of names. It is also
extensional, which means that it does not allow intensional operators, such as the modal operators "Possibly" and
"Necessarily". Quine's canonical notation does however include identity.

[6] For difficulties that arise in this extended use of the criterion where ordinary language sentences are translated
to canonical notation, see for example Alston (1958).

paraphrases that they find acceptable of their theories, and then compare the cost of these regimented theories.

Frank Jackson (1989) distinguishes between three separate questions regarding ontological commitment. One question is how to c*haracterize* or elucidate the notion. Implicit criteria should perhaps be understood as elucidations of the notion of "according to". A second separate issue is how to *tell* what the ontological commitments of a specific theory are. Explicit criteria provide ways to tell what at least some of the commitments of a specific theory are. And thirdly, there is the issue of how to *force* a defender of some specific theory to concede that the theory has some particular ontological commitments. (Jackson 1989, 192). Arguably, if we have a way of telling what the ontological commitments of a theory are then the way to force another ontologist to recognize the commitments of her theory would simply be to apply the test. To be able to play its roles in situations of theory-choice and debate, a criterion must provide a method for telling what the ontological commitments of specific theories are.

3 Explicit commitment

As mentioned, I claim that the question of what counts as a neutral explicit criterion is substantive while the question of what counts as a neutral implicit criterion is not. The explications of explicit commitment and implicit commitment in the following two sections are intended to show why that is the case. Krämer (2014, 21) gives the following definition of explicit ontological commitment:

(Df. EOC) A theory T is explicitly ontologically committed to Fs $\leftrightarrow$ $_{df.}$:

T includes some sentence that means *there are Fs.*[7]

To include a sentence that means *there are Fs* is clearly sufficient for commitment to Fs. But it is not a necessary condition for commitment to Fs, as I will show. Therefore there is a need for implicit commitment. Krämer (Ibid.) gives the following definition of implicit ontological commitment (Df. IOC):

(Df. IOC) A theory T is implicitly ontologically committed to Fs $\leftrightarrow$ $_{df.}$:

T is ontologically committed to Fs $\wedge$

T is not explicitly ontologically committed to Fs.

Let's begin with explicit commitment. (Df. EOC) defines what explicit commitment consists in but it does not provide a method for discerning explicit commitments for specific sentences or theories. To know whether a sentence of a given language is explicitly committed we need to know which of the expressions of the language that express existence. We need to specify when a sentence means *there are Fs*. In Quine's preferred notation of name-free first-order predicate logic,[8] the only referential expression is the first-order existential quantifier, " $\exists x$ ". But does the existential quantifier[9] express the notion of existence that a serious ontologist has

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[7] A sentence s is included or contained in a theory T iff s is a member of T.
[8] It is name-free since it does not include individual constants in its vocabulary.
[9] Hereafter, when I speak of simply the existential quantifier I mean the first-order existential quantifier.

in mind? (Assuming that there is one or any such notion). According to Quine the answer is trivially yes, since this is the only expression of existence in his preferred language. The assumption that the existential quantifier does express the ontologically important notion of existence is a major Quinean assumption, that Krämer (2014) calls 'Expression of Existence' (EE):

(EE) The first-order existential quantifier '$\exists x$', on its standard interpretation, expresses the ontologically important notion of existence. (Krämer 2014, 22).

It should be stressed that with (EE), in Quine's name-free notation, there are no means to refer to entities in a way that is not ontologically committing. With (Df. EOC) together with (EE) we have a criterion of explicit commitment, and it is an "automatic road" to the explicit commitments of first-order theories. If we accept (Df. EOC) and (EE) together with the austere first-order language that Quine prescribes, then there is no room for disagreement regarding its verdicts. In this sense it can be applied automatically. A theory that contains the sentence '$\exists x\ Fx$' contains a sentence that means *there are Fs*. Therefore, the theory is explicitly committed to Fs. End of story.

Even though this criterion does not mention the semantic notion of values, given the inclusion of the Quinean stipulation of (EE) I believe that it is motivated to call this the Quinean explicit criterion of ontological commitment (QEOC):

(QEOC) A theory *T* is explicitly ontologically committed to *F*s iff

T includes the sentence ' $\exists$x Fx'.

In some other formulations of Quine's, it seems plausible[10] to construe his characterization of the notion of ontological commitment as an implicit criterion where the implicit commitment is construed as logical implication. For example here:

> [T]he ontology of a theory is a question of what the assertions say or imply that there is. (Quine 1951b, 14).

A seemingly plausible way to construe this as a criterion would be to combine (QEOC) with an implicit criterion that is implicit in the sense that it includes the explicit assertions of existence in the sentences that are logically entailed by the theory. And logical entailment would mean narrow logical implication: truth preservation in virtue of logical form, i.e. truth preservation under any reinterpretation of the non-logical vocabulary (Jackson 1989, 193). It would be a criterion of the commitments of deductively closed theories, which is how the term "theory" is commonly used in logic, contrary to the liberal use here where any set of sentences written down in a book or paper counts as theory. The difference between (QEOC) and this criterion is simply that this criterion ascribes commitment to sentences that are logical consequences of the sentences that are members of the theory. According to the definitions given by Krämer, it is a case of implicit commitment. However, a criterion of such commitment seems to leave no room for disagreement about the verdicts given the inference

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[10] This is argued in Jackson (1989, 192-3).

rules of the language of regimentation. This would require that the criterion specifies a language with a deductive system that all theories must be couched in, in order for the criterion to be applicable.

Leaving logical implication aside, the combination of (Df. ELC) and (EE) is enough to tell what theories couched in canonical notation say that there is. A theory is explicitly committed to a kind of entity if it includes a sentence that means that there is some entity of that kind, and by stipulating (EE) we know when a sentence in Quine's canonical notation means that there is some entity of some kind. To assess the commitments of a sentence in some other language, we must paraphrase the presumably existentially loaded idioms of that language into a first-order quantificational notation.

An explicit criterion may differ from (QEOC) by stipulating a view about ontologically important existence-expressions that differs from the Quinean view (EE). This might require a more permissive language of regimentation. For example, Frederique Janssen-Lauret (2016) proposes a criterion that applies to an expanded language that permits the use of constants. In his criterion, also individual constants express existence. And for example a Meinongian may complain that the use of (EE) overgenerates commitment and object that the existential quantifier[11] in fact is not ontologically loaded. She might propose that it should be the task of an existence predicate to express existence. In this case the same notation may be used although without (EE) and with the stipulation of an ontologically loaded predicate for existence. Yet another option might be to give the job of expressing the ontologically important existence to a reality operator: "In reality, it is the case that". This route brings a distinction between fundamental and derivative existence into the picture, a distinction that I will not discuss in this paper.

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[11] Meinongians might protest against the name existential quantifier and insist on calling it the particular quantifier, in contrast to the universal quantifier. See Priest (2008). It could also be insisted that it should be read "For some" instead of "There is" or "There exists".

As long as an explicit criterion has specified a language and the ontologically important expressions of existence in that language, they are automatically applicable in the sense that the commitments of theories can be straightforwardly read off from the theory by isolating the expressions of existence. In this trivial sense all explicit criteria are neutral. I claim that it seems plausible that competing explicit criteria can be assessed for their neutrality in a non-trivial sense too. The language of regimentation that the criterion applies to, and its stipulated expression of existence, should be neutral about what there is, i.e. it should consist only of topic-neutral expressions. Topic-neutrality is a term introduced by Gilbert Ryle for expressions or notions that are not about anything specific: "Intuitively, a 'topic-neutral' notion is a notion which may occur in propositions about any topic or subject-matter whatever." (Batchelor 2011, 1). The logical constants are the paradigmatic examples of topic-neutral expressions. A non-topic-neutral language might sneak in unwelcome ontological commitments or rule out sought-after commitments. However, the point of a criterion is to discern all assertions of existence without prohibiting any specific assertions about what there is. Put in quantificational terms, in the ideal notation for a criterion "there is neither any sort of thing that may not be quantified over, nor any sort that must be quantified over." (Boolos 1975, 517).[12] The point is to prevent that commitments are sneaked in or ruled out. Given that the question of how to define and demarcate topic-neutrality is a substantive question, the question of neutrality in an explicit criterion is a substantive question too. If there is a demarcation of topic-neutral expressions from non-topic neutral expressions, then a neutral criterion is a criterion that allows only topic-neutral expressions of existence. And if topic-

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[12] It is not uncontroversial that this quantificational view is the most plausible view of what it means to be *about* something. The assumption behind the view of logical constants as paradigmatically topic-neutral is that the subject-matter of a science is identified with the range of the quantifiers in the statements of that science. On this view of subject-matter, arithmetic is about numbers. But as Boolos (1975) suggests, arithmetic could be regarded as being *about* addition as well. And on this view logic is perhaps not so topic-neutral: "it can easily be said to be about the notions of negation, conjunction, identity, and the notions expressed by 'all' and 'some', among others..." (Boolos 1975, 517).

neutrality is a matter of degree, a criterion is as neutral as possible if it only allows the most topic-neutral expression of existence.

In conclusion, by a stipulation about which linguistic expressions mean that there is something (in an ontologically important way), we get a criterion that is automatically applicable in the sense that there is no room for disagreement about the verdicts of the criterion, given agreement on the criterion itself. An example of such a criterion is (QEOC). As an explicit criterion, (QEOC) may be argued against on the basis that it is not neutral, i.e. biased, and it may be argued that it is preferable to some other explicit criterion on the basis that it is more neutral. All explicit criteria are neutral in the trivial sense that the commitments can be read off automatically. And to be neutral in the non-trivial sense is for the criterion to stipulate expressions of the ontologically important notion of existence that are topic-neutral or as topic-neutral as possible.

4 Implicit commitment

According to for example a Meinongian the explicit criterion based on (EE) is too freehanded with its commitments, it overgenerates commitment. But a more commonplace and obvious critique of explicit criteria is that they are too tightfisted, that they undergenerate commitment. If the ontological cost of a theory exceeds the explicit assertions of existence in the theory, then an explicit criterion is inapt to play the intended foundational role of measuring the ontological cost of theories. This is why there is a need to consider implicit ontological commitment. Consider again the definition of implicit commitment given by Krämer (2014, 21):

(Df. IOC) A theory T is implicitly ontologically committed to Fs $\leftrightarrow$ df.:

        T is ontologically committed to Fs $\wedge$

        T is not explicitly ontologically committed to Fs.

 When is a theory committed to Fs even though it is not explicitly committed? By answering never, one ends up with a characterization of ontological commitment that construes "according to" in an intuitively very implausible way.[13] Peacock (2011) remarks that the "ontological cost might be more than what is suggested by the explicitly existential sentences incorporated within statements of the theory" (Peacock 2011, 81). I have already discussed criteria that capture existential consequences of a theory when the consequence relation is understood as narrowly logical implication. But it has been convincingly argued that logical implication in many cases is unable to capture the presumed ontological cost of a theory, and that some wider notion of entailment is required. (See Jackson 1989; Michael 2008; Peacock 2011). Peacock gives several examples of the ontological cost exceeding the explicit commitment. Here is one of them: Take the theory (T), and another theory (MT) (Peacock calls the second one a meta-theory):

(MT) Theory (T) is true.

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[13] Although we will have to live with this unintuitive notion if we wish to achieve neutrality.

One might think that (MT) is the same theory as (T), but Peacock points out that someone may accept (MT) while being ignorant of sentences in (T). This indicates that they are different theories. The example Peacock gives is someone believing that everything the Pope say is true. They may believe this while being ignorant of many of the things the Pope actually says (Peacock 2011, 82). Similarly one may believe that everything in the Bible is true while not being acquainted with every sentence in the Bible, or believe that everything in a physics textbook is true while not being acquainted with every sentence in the textbook. If (T) is the Bible, (T) contains ordinary language sentences with quantificational structures that plausibly can be regimented "$\exists x$ (x is God $\wedge$ $\forall y$ (y is God $\rightarrow$ y = x)$)$". Plausibly, (MT) should be committed to God as well. And if T is a physics textbook it might include a sentence that can plausibly be regimented as "$\exists x$ x is an electron". In this case (MT) should plausibly be committed to electrons because according to (T) there are electrons and according to (MT), (T) is true. But on the explicit account, (MT) is not committed to electrons. This is one of several examples given by Peacock of when explicit commitment gives implausible results. Krämer (2014) gives even simpler examples of when the ontological cost exceeds the explicit commitment. Here's a quick look at two of them.

First, consider the theory {"$\exists x$ x is a vixen"}. This theory is explicitly committed to vixens, i.e. female foxes. And surely, if there are vixens then there are foxes. However, the theory is not explicitly committed to foxes. It seems bizarre to say that it is not the case that according to the theory there are foxes. And second, consider the theory {"$\exists x$ x is composite object"}. It should surely be considered committed to proper parts. Yet the theory is not explicitly committed to proper parts. It seems equally unintuitive as in the last case to say that it is not the case that according to the theory there are proper parts. So clearly there are cases when a theory is not explicitly committed to *F*s but it nevertheless seems correct to say that

according to the theory, there are *F*s. How do we then account for the phrase "according to" in these cases? A plausible answer seems to lie in the notion of entailment:

> In all these cases in which it seems very plausible to ascribe an implicit commitment, it is also very plausible to say of the theories in question that they *entail* that things of the relevant kinds exist. (Krämer 2014, 52).

As Krämer remarks it seems plausible to account for implicit commitment in terms of entailment. But it is not the only way since another way to account for implicit commitment is by truthmaking, and truthmaker accounts of implicit commitment are not entailment-based in the sense that Krämer uses the term 'entailment-based' (Krämer, 54). In his use of the term it is not sufficient for a criterion to invoke or give some important role to entailment (as truthmaker criteria does) to count as entailment-based. To count as entailment-based a criterion must give the specific role to the notion of entailment that is identified in the following definition of a criterion of Ontological Commitment by Entailment (OCE):

(OCE) A theory *T* is ontologically committed to *F*s iff *T* entails that there are Fs. (Krämer 2014, 53).

Besides entailment-based criteria there are two kinds of implicit criteria that are not entailment-based: those that give another role to entailment than the one specified in (OCE)

and those that do not give a role to entailment. (Krämer, 54). The question for an entailment-based criterion is how narrow a notion of entailment to adopt. As mentioned, it has been argued that logical implication[14] is too narrow a notion of entailment to properly characterize the notion of ontological commitment. And indeed the examples given above of cases where an explicit criterion fails to capture the ontological cost of a theory, also applies to criteria that measure the explicit commitments of the sentences that are logically implied by the theory. The challenge for a defender of an entailment account is then to find a viable account of entailment that is wider than logical implication. For various reasons the wider modal account of entailment will not do either. Here is the modal criterion of ontological commitment (OCM) in Krämer's (2014) formulation:

(OCM) A theory T is ontologically committed to Fs iff

       necessarily, if T is true (on its actual interpretation), then there are Fs.

A problem for this criterion is that according to the modal account of entailment, necessarily true propositions are entailed by any proposition and necessary falsehoods entails any proposition. If it is necessarily true that Fs exists, then the modal entailment criterion gives the verdict that any theory is committed to Fs. And necessarily false theories are maximally committed, they are committed to Fs for any arbitrary "F". (Krämer 2014, 55). As Jackson points out, the problem is not that these familiar results are counter-intuitive but that they make nonsense of the way we use ontological commitment for discriminating in acceptability among theories. (Jackson 1989, 194). Jackson proposes a solution that would allow us to

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[14] Truth-preservation under all reinterpretations of the non-logical vocabulary.

discriminate among theories. However, I will leave that problem aside and focus on a problem closer to the question of neutrality. The problem to be discussed is the problem that (OCM) cannot reach a decision about the commitments of metaphysical theories prior to reaching a decision about which theory is true. (Peacock 2011, 93). And for a criterion to assume the truth of an ontological theory that is under consideration is clearly to sneak in ontological assumption. Krämer illustrates the problem with an example involving two competing metaphysical theories T_{UM} (Universalism, Modal) and T_{NM} (Nihilism, Modal). T_{UM} includes as members the sentences "there are at least two objects" and "necessarily, any two objects compose a further object". T_{NM} includes as members the two sentences "there are at least two objects" and "necessarily, no two objects compose a further object". (Krämer 2014, 55). Suppose that we have a preference for desert landscapes, and as a guide to theory-choice we wish to compare these theories for their ontological parsimony. In our reasoning about the merits of T_{UM} and T_{NM} it would be question-begging to employ as premises claims that would straightforwardly entail the truth or falsehood of one of them. But in order to compare them neutrally we must consider both of them to be possible. The problem is that the claims that "T_{UM} is possibly true" and "T_{NM} is possibly true" are themselves question-begging, for if T_{UM} is merely possibly true, then it is possible that there are two objects that do not compose, so it is not necessary that any two objects compose, so T_{UM} is false. And if T_{NM} is merely possibly true, then it is possible that there are two objects that do compose, so it is not necessary that no two objects compose, so T_{NM} is false. (Krämer 2014, 56).

To apply the modal entailment criterion (OCM) we need to take a stance on questions of modality, in this example the stance that all theories under consideration are possibly true. By taking this stance we may assume that the truth of one of the theories under consideration. And if we are neutral on these questions or suspend our question-begging beliefs, then we do

not "have enough left to work out which is more parsimonious" (Krämer 2014, 57). A criterion that requires an extensional paraphrase of the modal idioms would not be better off with regard to neutrality, since it would require quantifying over controversial entities like possible worlds. What about the truthmaker criterion? Krämer does not discuss truthmaker criteria, but they seem at least in Armstrong's version to be faced with the same problems as the entailment-based criteria. In Armstrong's view truthmakers necessitate their truths, so when he writes that "To postulate certain truthmakers for certain truths is to admit those truthmakers to one's ontology" (Armstrong 2004, 23), it may plausibly be formulated as a truthmaker criterion (OCT) in the following way:

(OCT) A theory *T* is ontologically committed to *F*s iff

       necessarily, if *T* is true then *F*s are among the truthmakers of *T*.

Given the account here of truthmaking as truth necessitation it is obvious that this truthmaker criterion faces the same problem as (OCM) when it comes to comparison between theories that include modal operators.

   Where does this leave us with regard to the distinction between explicit and implicit commitment? According to Krämer's initial definitions, a theory is explicitly committed to *F*s iff it includes a sentence that means *there are F*s. And a theory is implicitly committed to *F*s simply iff it is committed to *F*s and is not explicitly committed to *F*s. The implicit commitment is plausibly cashed out as the entailments of a theory, but to capture the capture the ontological cost the notion of entailment must be wider than logical implication. It is not enough for *T* to include a sentence that means *there are F*s or logically imply a sentence that

means *there are Fs*. An entailment-based criterion must employ a wider notion of entailment. There is a need for a wider notion of entailment, but it is disputed what the nature of entailment is. However, given the widely accepted modal account of entailment, entailment-based criteria cannot be non-question-beggingly applied to theories that include modal operators. An alternative implicit criterion proposed by Armstrong (2004) is the truthmaker criterion, here construed as (OCT), but it runs into the same problems as entailment-based criteria.

5 Armstrong's charge

In this section I take a closer look at Armstrong's charge against Quine's criterion. Armstrong claims that Quine's criterion does not provide a neutral ground for ontological disputants, but that it in fact has an inbuilt bias. This is because of what Armstrong calls Quine's "extraordinary doctrine that predicates involve no ontological commitment" (Armstrong 1980, 104-5). The charge is targeted at the Quinean assumption that:

> the mere presence of a predicate 'F' in a first-order sentence such as '$\exists x\, Fx$' does not render the sentence ontologically committed to a corresponding object such as the property F-hood, or the set of Fs. (Krämer 2014, 22).[15]

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[15] Armstrong discusses this assumption in (Armstrong 1980, 105; Armstrong 1989, 89; Armstrong 1997, 114; Armstrong 2004, 23-24).

While Quineans may contend that Quine's criterion offers a neutral ground where ontologists can make their positions explicit in a manner agreeable to both parties, according to Armstrong the criterion constructed by Quine has "stacked the ontological deck against predicates as opposed to subject terms" (Armstrong 2004, 23). The ontological importance of a bias against predicates and in favor of subject terms is that predicates are associated with properties and classes. Armstrong suggests that with a truthmaker criterion we could "consider the ontological implications of [subject terms and predicate terms] in an unbiased way" (Armstrong 2004, 24). But to leave it open to ontological disputants to consider the ontological implications of subject terms and predicate terms, is to allow ontological disputes to reappear as disagreement about the verdicts of the criterion. As shown in section four, such a criterion fails to play its foundational and polemical roles. Therefore, this notion of neutrality is not relevant for the evaluation of competing criteria with respect to their utility, and the charge based on it is not a viable reason for replacing Quine's criterion with (OCT).

Also, a friend of the Quinean criterion may reply that nothing in the criterion rules out commitment to properties or classes. For example, universals can be accounted for as values of first-order variables if we introduce a universal predicate and a two-place instantiation predicate.[16] But if we for the sake of argument say that Quine's criterion fails to be neutral, what would a legitimate competitor look like? For a criterion to play its role of clarifying debates by providing rules for when a debate is over, it must stipulate an expression or expressions of the ontologically important notion of existence, and all and only uses of that expression or those expressions should render commitment. There seems to be various options if one wishes to construct a criterion that includes predicates among the ontologically loaded expressions. Even if we stick to a criterion that looks for commitments in the values of

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[16] Quine gives instructions for how he believe a defender of universals may commit to universals: "We can very easily involve ourselves in ontological commitment by saying, for example, that *there is something* (bound variable) which red houses and sunsets have in common ..." (Quine 1948, 12).

bound variables in a regimented theory, there is the option of bindable predicate variables in second-order logic. The status of second-order logic is however heavily disputed: some argue that that second-order quantifications are no more ontologically committing than first-order quantifications, while other argue that second-order quantifiers do carry different commitment.[17] If the first view turned out to be right, this would of course not be an option. But it was precisely because Quine believed that second-order logic is not ontologically neutral that he excluded second-order logic from the canonical notation for his criterion of ontological commitment. Quine famously regarded second-order logic as mathematics in disguise, as "set theory in sheep's clothing" (Quine 1970, 66). The reason for not regarding it as logic is that it according to him is not topic-neutral. According to him the first-order existential quantifier "$\exists x$" is topic-neutral while the second-order existential quantifier "$\exists X$" in itself is committed to sets. This is because the predicate variable that the second-order quantifier binds is taken to range over the power set of the domain of discourse. According to Quine this means that it is committed to universals. As Rayo and Yablo (2001) points out, what Quine meant by the claim that second-order logic is set theory in sheep's clothing could not have been that the semantics of second-order logic is set-theoretical since also the semantics of first-order logic is set-theoretical. And Quine certainly did not consider first-order logic to be set theory in disguise. The problem is that according to Quine the second-order quantifiers are first-order quantifiers stipulated to range over sets. According to his own view on commitment, second-order logic is committed to sets and practitioners of the logic inherits the commitments. (Rayo and Yablo 2001, 75). So according to Quine, by allowing bindable second-order variables we allow a referential expression that sneaks in existential

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[17] For example Boolos (1984) defends the first view and for example Krämer (2014) defends the second view.

commitment to sets. A believer in sets should make her belief explicit with the resources of first-order logic.

Also for the reason of maintaining neutrality, Jonathan Schaffer (2008) suggests on the contrary that we should allow higher-order quantification in a quantificational criterion. This is in direct relation to Armstrong's claim that Quine's criterion is biased because it does not ascribe any ontological seriousness to predicates. Schaffer remarks that a "reason given for preferring the truthmaker view is the idea that the quantifier view builds in biases by construction" (Schaffer 2008, 9). He dismisses the argument in two sentences: "As to the [...] argument that the quantifier view is biased against predicates, I am happy to allow higher-order quantification. At least, nothing in the quantifier view per se requires restriction to first-order quantifiers." (Ibid.). It is noteworthy that Quine excludes second-order quantifiers because he believes that a criterion that allow quantification over predicate variables is not ontologically neutral while Schaffer (2008) proposes a criterion that allows second-order quantifiers precisely because he seems to consider it plausible that prohibiting quantification over predicate variables is not ontologically neutral. Two opposite claims, motivated by the same reasons. Considered as a competition between two explicit criteria it seem to be a substantive question to ask whether a criterion that allows second-order quantification is more ontologically neutral than a criterion that forbids second-order quantification, and vice versa.

We may think of a criterion that stipulates that all predicates are ontologically loaded, that the use of them automatically convicts one of commitment to some extra-linguistic correlate, presumably properties. We may call this second stipulation 'Expression of Existence by Predicates (EEP):

(EEP) Predicates express the ontologically important notion of existence.

(Df. EOC) together with (EEP) would then be an explicit criterion: a predicate-referential explicit criterion of ontological commitment (PEOC): A theory is explicitly committed to *F*s iff it includes a sentence that uses the predicate *F*. Of course this criteiron would sneak in unwelcome commitment. It would for example reintroduce the problem of non-being that lead Quine to exclude individual constants from his language of regimentation, since it would be impossible to say that there are no *F*s without thereby committing oneself to *F*s.

As we have seen, Armstrong's critique of Quine's criterion is that predicates by construction harbor no ontological commitment. In an explicit criterion the ontologically important expressions of existence must be stipulated, and it would obviously not be ontologically neutral to hide commitment to sets in second-order variables (given that they are committed to sets) or stipulate that all predicates are existentially loaded. Obviously this is not what Armstrong has in mind either. He proposes that we should equally consider the ontological implications of both subject terms and predicate terms, not that we should stipulate that predicate terms are ontologically committing. But to get a neutrally applicable method for discerning commitments the expressions of existence must be determined. To consider the ontological implications of subject terms and predicate terms equally is not a method for discerning ontological commitment, and therefore cannot be neutral in the sense that is relevant for the utility of criteria. Ontologically neutral discernings of the ontological commitments of theories can be expected of explicit criteria, and they are achieved if the criterion stipulates a topic-neutral expression of existence or one that is as topic-neutral as possible. But to consider ontological implications without stipulating expressions of existence takes us away from the terra firma of explicit commitment and into the conflict-ridden world of implicit commitment where there seems to be no hope of a neutrally applicable criteria.

6 Conclusion

I have claimed that a requirement for neutrality in a criterion of ontological commitment is that it can be applied by all parties of an ontological debate without room for disagreement about the verdicts, and that only explicit criteria can be expected to achieve this since the verdicts of implicit criteria are dependent on the settlement of controversial metaphysical debates. Further I have suggested that the condition for an explicit criterion to be neutral should be that it stipulates topic-neutral expressions of existence. Based on these general claims, I have argued that the argument Armstrong (2004) gives for replacing Quine's criterion with a truthmaker criterion fails. Regardless of the legitimacy of the charge that Quine's criterion fails to be neutral, it does not provide a reason for replacing it with Armstrong's implicit truthmaker criterion since the truthmaker criterion cannot be evaluated based on the same standards of neutrality.

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