Filozofia Nauki
Rok XXIV, 2016, Nr 2(94)

Borys Jastrzębski

The Number of Moons Is Not a Number
Towards a Comprehensive Linguistic Approach to Frege's Commitment Puzzle*

Frege noticed a puzzle, afterwards called the Commitment Puzzle, which seems to show that a paraphrase of a supposedly ontologically innocent sentence about uncontroversial, everyday things may require the existence of abstracts.[1] To introduce the problem, Frege (1884) considered the following two sentences:

(F1) Jupiter has four moons.

(F2) The number of moons of Jupiter is four.

It is intuitively correct to infer (F2) from (F1) or even to treat them as equivalent. Yet the relationship between these sentences (when assumed) is unsettling on the linguistic and metaphysical levels. Especially because:

(i) (F1) is *prima facie* about a planet and its satellites, whilst (F2) is *prima facie* about a number. It is problematic because no reference to numbers is made in (F1), whereas (F2) appears to involve a reference to a number.

---

* I would like to thank Katharina Felka, Steven Yablo, and Robert Schwartzkopff for helpful discussions during the Hamburg Summer School 2015 that made me think about these issues, Tadeusz Ciecierski and Katarzyna Kuś for their insightful comments and assistance with revising the paper, and Joanna Odrowąż-Sypniewska and Wojtek Rostworowski for their patient reading and encouragement. The research was partly funded by the Institute of Philosophy, University of Warsaw, to which I am also grateful.

[1] I accept Hofweber's (2007: 1) understanding of *innocent statement* as "a simple everyday statement that apparently has nothing to do with metaphysics".

(ii) (F1) and (F2) use the same words in different syntactic positions and thus as different types of expressions: "four" in (F1) is a determiner, in (F2) it seems to be a name for a number (Hofweber 2007: 8; 2014: 1, Felka 2014: 262). There is nothing surprising in one word having two different meanings. But since (F2) seems to be derivable from (F1), we would expect the words they use to be of the same semantic kind. If number words really have two so different functions, then this fact should be explained, since they are usually thought to be far from ambiguous (Brogaard 2007: 1). This problem is sometimes referred to as Frege's Other Puzzle (Hofweber 2005a, Brogaard 2007: 18, Felka 2014: 262; the term was coined by Hofweber).

The most disturbing of them, however, is the metaphysical problem. As Schiffer (1987: 51) put it: how can we get something from nothing with these trivial inferences? How is it possible that for basic sentences like:

(1) Tommy is a soldier,
(2) I bought one bottle of milk,

we can instantaneously come up with a number of sentences that seem truth-conditionally equivalent, like:

(3) Tommy has the property of being a soldier,
(4) That Tommy is a soldier is true,
(5) The number of bottles of milk I bought is one,
(6) A bottle of milk has the property of being bought by me,

even though they apparently concern entities of an entirely different kind and of a much more controversial status? We call such sentences, oddly rich in unsuspected metaphysical content, *ontologically* or *metaphysically loaded counterparts* (Hofweber 2007: 1).

Even with substantial philosophical training, it is difficult to doubt that innocent statements, like (F1), (1), and (2), are equivalent to their ontologically loaded counterparts, in this case (F2), (3)-(4), and (5)-(6), respectively. In any normal context, if (1) is true, then (3) is true as well. And if (3), then definitely (1). It would be really challenging to imagine a world in which something is an *x* without having the property of being that *x*, or a countable multitude without a number that could be associated with its cardinality, or the other way round.[2] For most people validity of these inferences in English is a fact, unquestionable to a competent speaker. The remaining philosophical task is to describe the mechanisms that make it plausible as well as its function in the world and communication.

---

[2] "Having a property" is used here in its natural meaning, with no special ontological connotations intended. For more on the possible function of such uses, see Hofweber (2007) and section 1 below.

1. THE FOCUS-CONSTRUCTION APPROACH

1.1. Summary of Hofweber's focus-construction approach

Thomas Hofweber (2005b, 2007) proposed a new, purely linguistic approach to the Commitment Puzzle. He argued that nominalizations in the loaded counterparts constitute constructions that exert focus effect on the nominalized part (Hofweber 2014: 1). The result is similar to putting phonetic stress on the relevant part of the innocent statement. For instance, uttering:

(F1) Jupiter has FOUR moons.

(where capital letters represent phonetic stress) is like saying:

(F2) The number of moons of Jupiter is four.

This is a syntactic (or structural, and thus independent of pragmatics) way to highlight one of possible uses of the sentence, which makes it easier to distinguish familiar information from the new content appearing in a conversation (Hofweber 2007: 12-13). Focus constructions do not change the content of a sentence, thus they do not bring new commitments. Instead, they let us say the same thing another way, more appropriate in a conversation. Consider Hofweber's own example:[3]

(7) Johan likes FOOTBALL.

(7) is equivalent to a cleft construction (cleft constructions provide syntactical focus as well):

(8) It is football that Johan likes,

while:

(9) JOHAN likes football

is equivalent to

(10) It is Johan that likes football.

These pairs can be appropriate answers to different questions. For instance, (9) and (10) would not be appropriate answers to a question about Johan's hobby:

(11) What does Johan like?

However, they would fit perfectly as an answer to:

(12) Who likes football?

---

[3] I slightly altered the example from (Hofweber 2007: 11).

Hofweber (2007: 17) explains this difference by observing that focus gives special status to a certain part of a sentence, thus contrasting this part with alternatives of the relevant kind. For example, in the case of (11) and answers (7) and (8), we might consider a variety of activities Johan enjoys, whereas in the case of (12) and answers (9) and (10), we are concerned with the group of people who like football. In fact, all the answers state the same thing but are appropriate in different contexts. And this is why it is justified in the light of Grice's maxims to have two or more different expressions for the same content. It guarantees conciseness and relevance of utterances in the course of a conversation.[4]

Also, Hofweber (2005b: 1; 2007: 15-22) noted that the structural focus effect does not occur in identity statements. The reason for this is that identity statements are symmetrical in form, organised around some sort of declaration of equality. One half of the identity might be pragmatically (e.g. phonetically) stressed for conversational convenience, and indeed it usually is (Hofweber 2007: 15). But structural focus of one part of an equation would simply make no sense. To support his claim, Hofweber (2007: 28-29) considers the following example:

(13) Who is Tully?
(14) Who is Cicero?
(15) Cicero is Tully.

(15) can be uttered as an answer to both (13) and (14) as long as sentence stress is properly altered.

(15a**)** CICERO is Tully.
(15b**)** Cicero is TULLY.

In Hofweber's own words:

> Examples like [(15)] suggest that what the topic and the focus is in an identity statement is simply a result of intonation. It seems that the term in pre-copula position as well as the one in the post-copula position can be either one of these, with proper intonation. Thus the syntactic structure of the sentence does not determine a particular focus, and thus there is no structural focus effect (Hofweber 2007: 29-30).[5]

---

[4] Interest in pragmatic relevance and Gricean maxims in Hofweber's account serves also as a powerful counterargument against standard pragmatic solutions based on the conviction that (F1) says exactly the same thing and in the same way as (F2). Such a conviction violates the basic pragmatic principle of maximum simplicity of an utterance. If there is no communicative difference between (F1) and (F2), why would anyone ever choose (F2), given that it is more complicated? Cf. Hofweber 2007: 15-16 for more on this topic.

[5] Hofweber says "intonation" but in fact he means "sentence stress". I will use the latter term instead.

It is not entirely clear why Hofweber would not accept paraphrases of (15) containing structural focus to make congruent answers stressing one of the sides independently from sentence stress:

(16) It is Cicero that Tully is,
(17) It is Tully that Cicero is.

After all, (i) their asserted content is identical to (15), and (ii) the only thing that changes is that one side has been given a special status by using the same mechanism of substitution of phonetic stress by a cleft construction that was permitted in sentences (7)-(12). Presumably, he would not treat (16) and (17) as identity statements at all but rather as predicate attributions, as in the case of (Hofweber 2007: 31-32):

(18) Wagner is the composer of *Tannhäuser*,

and as opposed to (Hofweber 2007: 32):

(19) The composer of *Tannhäuser* is Wagner.

Hofweber believes (19) to be a genuine identity statement, not exerting any syntactically generated focus. Imbalance of (19) that seems to point at *the composer of Tannhäuser*, he says, happens because the pre-copula is simply very long and complicated (Hofweber 2007: 31).

> For a sentence to be a congruent answer to [*Who is Wagner?*], it has to have Wagner as its topic, since Wagner is the topic of the question. Usually, in English at least, the topic is in subject position, but it does not have to be in that position. The topic can be in post-copula position, as in the examples above, but for that to be possible it has to be phonetically marked as the topic. *But when the pre-copula material is long and complicated, as in* [(19)]*, it is hard to get the reading where Wagner is topic, since it is so late in the sentence, and thus we naturally take the pre-copula term to be the topic* (Hofweber 2007: 31, my emphasis).

Apparently, length and complexity of the pre-copular term are not, according to Hofweber, structural features of the sentence, but purely contingent, if not pragmatic, matters. This point was highly criticised in responses to his view.

Finally, how is it possible that there is a structural focus effect in (F2) if identity statements cannot have them? Obviously, Hofweber concludes, (F2) is not an identity statement at all, and *four* is not a name. Instead, the number word serving its natural role as a determiner has been *moved and extracted* from its canonical position as part of the syntactic manipulation that generates the focus effect (Hofweber 2007, 2014). But it did not change its function in the course of the extraction. Thus Hofweber's approach confirms that (F1) is truth-conditionally equivalent to (F2) (even though not always congruent in the same conversational situations) and at the same time denies that we get something from nothing or any extraordinary commitment at all. We do not get anything new because all that the supposedly loaded counterpart does is stressing part of the sentence by means of a syntactical construction. It does

not introduce any additional content. (F2) is a trivial pleonastic paraphrase of (F1) with slightly different communicative functions.

Hofweber's view brings novelty into the investigations about the Commitment Puzzle. It was the first approach that would focus on natural language and conversation, thus steering clear of ontological strategies of naive paraphrastic solutions (Alston 1958). It concentrates on linguistic practice and employs specialized linguistic methods to deconstruct sentences we find natural in order to account for them when they appear in the Puzzle. Hofweber came up with a promising idea that the loaded counterparts need not be identity statements and that number words in (F1) and (F2) are not necessarily singular referring terms. These two topics have dominated recent discussion in the field.

1.2. Brogaard's remark

Berit Brogaard's main doubt about Hofweber's argument concerns copular sentences. She points out that it is simply not true that copular sentences, including identity statements, can never convey any structural focus effect (Brogaard 2005: 5). A focus effect can be detected by comparing two sentences. If both of them communicate the same information but in a different way without extra phonetic stress, then a structural focus effect occurs. We determine who is who thanks to our linguistic competence. Now, let us take another look at (18) and (19).

(18) Wagner is the composer of *Tannhäuser*.
(19) The composer of *Tannhäuser* is Wagner.

(18) is definitely an identity statement in which the word *is* works like the equality sign. So when we swap the pre- and post-copular expressions, the result will also be an identity statement. Since identity statements are symmetrical, positions of the compared elements have no influence on the meaning of the sentence. Therefore, the new identity statement (19) communicates the same information as (18). And yet it does so differently. This can be verified by testing the above sentences as answers in question-and-answer contexts, as Hofweber does. Thus one of the sentences must have a structural focus effect. Let us sum up Brogaard's argument in points:

(P1) The copular sentence (18) conveys the same information as the copular sentence (and identity statement) (19).

(P2) For some question *Q*, (18) is an appropriate answer to *Q* while (19) is not, or vice versa.

(P3) From (P1) and (P2): (18) and (19) convey the same information in two different ways.

(P4) No phonetic stress is put on any of the parts of (18) and (19).

(C) From (P3) and (P4): (18) or (19) has structural focus effect.[6]

Hofweber (2007: sections 4.2-5.1) responds to this objection in a twofold manner. First, the fact that there is a focus effect in an identity statement does not prove that it is a *structural* focus effect. Hofweber himself agrees that an identity statement can have focus, like one due to the sentence stress. Apparently, there is another non-structural way to achieve this result. In the case of (19), the focus effect is caused by the extraordinary length of the pre-copular term. According to Hofweber, there is nothing structural about it.

The second argument is more spectacular. This time it is about (18). Hofweber notes that question-and-answer contexts are very specific. Straightforward inferences that lead to a conclusion about whether a sentence is an identity statement or not in a question-and-answer context can be treacherous. Consider the following example (Hofweber 2007: 20):

(20) What has Wagner ever done?

Hofweber agrees that (18) is a congruent answer, and (19) is not. But he also observes that this fact stands in need of further explanation. How could an identity statement be an appropriate answer to a question about what someone did?

> An identity statement seems to tell us who he is, but not what he did. In fact, this is where the difference in the two answers lies. [(19)] is not a congruent answer since it is an identity statement, and thus doesn't address the question. But [(18)] is a proper answer in part because it is in fact not an identity statement when used as an answer to the question (Hofweber 2007: 20).

What is it then? When used as an answer to (20), (18) seems to say something about what Wagner did. So it is about an activity or a property he has. Since the property in question is in a way *tied* to the activity of composing *Tannhäuser*, the answer is appropriate. In fact, (18) is a subject-predicate sentence, not an identity statement. Thus even if we reject the "too-long" explanation, we need not accept the conclusion that identity statements may have structural focus effect. (F2) is therefore innocent.

Of course, this line of defence looks suspicious. Hofweber dismisses the ontological commitment to numbers and abstracts just because part of a sentence is too long — and if we do not like the idea, we are told to treat a sentence that is a pretty straightforward identity statement as a predicate construction. The problem of identity statements and their structural-focus capabilities is widely discussed by Hofweber's enthusiasts and critics in equal measure.

---

[6] In fact, Brogaard (2007: 5) is convinced that it is (18) that has structural focus effect. She infers this from the appropriateness of answers without further explanation.

1.3. Balcerak Jackson's criticism

Most of Brendan Balcerak Jackson's objections come from a misunderstanding about the nature of extraction used by Hofweber to move the determiner *four* to an unnatural position in (F2) (Balcerak Jackson 2013: 451-454, Hofweber 2014). However, some of them do stand.

Balcerak Jackson notes a puzzling omission in Hofweber's considerations about the transition from (F1) to (F2). Apparently, the only problematic, potentially loaded expression in (F2) that Hofweber tries to account for is the number word *four*. But what about the definite description *the number of moons of Jupiter*? This nominalization looks like a perfect candidate for generating metaphysical commitment. Balcerak Jackson believes that according to Hofweber the above description just fills the empty space left in (F2) after the extraction of the determiner *four*. And then he opposes that view with a couple of additional cases supposed to show that definite descriptions thus generated would not always fit in the gap left by the extracted determiner.

(21a) Jupiter most likely has four moons.
(21b) The most likely number of moons of Jupiter is four.
(22a) Jupiter is expected to have four moons.
(22b) The expected number of moons of Jupiter is four.
(23a) Jupiter has four moons in its orbit.
(23b) The number of moons in Jupiter's orbit is four.

Balcerak Jackson notes that in the above cases the definite descriptions in (b)-sentences were not created only by inserting *the number of* straightforwardly into the post-extraction gap. If there is a process that accounts for that transition, it needs to be described and argued for. What Hofweber provides us with, however, is a merely metaphorical image of rearranging expressions (Balcerak Jackson 2014: 453). Furthermore, it should be noticed that the noun phrase itself accommodates to the meaning of the sentence, thus it is not a purely syntactic phenomenon that is at work here.[7]

Again, we could paraphrase those extras away but because of Alston's objection to the paraphrastic solutions it would not account for the (a) to (b) transformations anyway. Therefore, Hofweber should explain how it happens and what the actual nature of extraction is. Otherwise, from a neutral perspective, it is more reasonable to accept definite descriptions in (b)s and (F2) as referring terms. Consequently, (F1) and (F2) would not be semantically equivalent. This is a problem that will remain

---

[7] It has to be asked, though, why not move those suspicious parts out of the main sentence and treat them as purely stylistically motivated ways of saying:

(21a') Most likely, Jupiter has four moons.
(21b') Most likely, the number of moons of Jupiter is four, etc.

and make Felka (2014) conclude that there is in fact an ontological commitment, just in a different spot than it is usually suspected.

There is another point Balcerak Jackson makes, far more controversial this time. He claims that we should be able to see that (F1) and (F2) are not equivalent in terms of truth conditions without all that syntactical talk whatsoever. In fact, it is so simply because (F1) and (F2) say respectively:

(F1') Jupiter has at least four moons.

(F2') The number of moons of Jupiter is exactly four.

To support his claim, Balcerak Jackson (2013: 458) provides two examples of pair sentences:

(24) Jupiter has four moons. In fact, it's sixty-two.
(25) The number of moons of Jupiter is four. In fact, it's sixty-two.

In (24) the second sentence is acceptable because it specifies how many more moons above four Jupiter actually has. The same sentence, however, is incompatible with (F2). At best, it could only be understood as a way to take back what was already stated.

Still, this approach is highly counterintuitive. There is no reason to think that the second sentence in (24) is not in fact a retraction, just as it is in (25). Actually, it is a more natural reading of (24). Think about a tax collector asking how many sheep you have. The more sheep, the higher the tax is. Now, if you reply:

(26) I have three sheep,

and further control detects that there are around ten times more wandering all over your pastures, there is no way you evade jail with a declaration that you in fact never lied. If you try saying:

(27) I have at least three sheep,

the tax collector immediately calls the police. Or just asks you to specify the number, if she's nice enough.

To make the initial sentence in (24) mean what Balcerak Jackson intends, we would have to place some kind of stress on *has* to show that an alternative was considered in which Jupiter did not have at least four moons. For instance:

(28a) [Person A:] I've always known Jupiter does not even have four moons!
(28b) [Person B:] Jupiter HAS four moons, man. In fact, it's sixty-two.

All of the above shows that our assumption that (F1) is truth-conditionally equivalent to (F2) cannot be that easily discarded.

Still, Balcerak Jackson's analysis uncovered the weak spot of Hofweber's position. Even though it is not as easy to prove as he thought, there are in fact some syn-

tactic reasons to believe that (F2) is an ordinary identity statement that commits us ontologically. To share the anti-Fregean view on numbers, Hofweber's enthusiasts have to deal with those objections first.

2. FELKA'S FIX

2.1. Copular sentences and focus constructions

In response to objections to the focus-construction approach, Katharina Felka proposed another linguistic argument for "No Identity", i.e. the thesis that (F2) is not an identity statement. It goes as follows.

Felka (2014) starts with a linguistic classification of copular sentences. She distinguishes identity statements, predications, specificational sentences, and identificational sentences. There are some intuitive ways to tell them apart. Identity statements are about functional equality of two names or descriptions. All that they say is that we can have different names for the same thing. Predications are, roughly, about objects and their properties; they predicate a property of a person or thing. Specificational sentences specify what something is, they pick out a person or thing that satisfies a more detailed description. Finally, identificational sentences introduce names for things or let us pick them out from among other objects. Felka (2014: 267-268) gives the following examples:

(29) The evening star is the morning star.
(30) Otto Preminger is the director of *Anatomy of Murder*.
(31) The director of *Anatomy of Murder* is Otto Preminger.
(32) The man who helps us on Fridays is Otto.

(29) is an identity statement, (30) a predication, (31) a specificational sentence, and (32) an identificational sentence.

Intuition and presupposed conversational roles of categories of copular sentences are not the only way to tell them apart. Some of them also have their specific characteristics. For instance, specificational sentences have structural focus. And as Felka (2014: 269-270) shows in the course of several congruence tests, no other type of copular sentences exhibits focus independent from sentence stress. This feature is important for Hofweber's considerations about focus constructions as a remedy against the Fregean or deflationist views on the Commitment Puzzle. For, if it were true that specificational sentences are the only ones to have a structural focus effect, and that identity statements cannot be specificational sentences, then Hofweber's view that (F2) is not an identity statement would be correct. Obviously, whether those categories intersect or not remains debatable (cf. e.g. Mikkelsen 2011). This is why we need a separate argument to support the view that no specificational sentence might at the same time be an identity statement. And Felka came up with such an argument.

2.2. Specificational sentences and identity statements

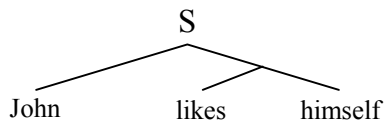
Traditionally, it was believed that specificational sentences show so-called connectivity effects (e.g. cf. Higgins 1979). It means that specificational sentences include elements in either pre- or post-copular part that behave as if they were syntactically bound by an element in the other part. For instance, take the sentence from (Felka 2014: 271):

(33) John likes himself.

Himself seems syntactically bound by *John*. Now, according to the linguistic Binding Theory, such effects may happen exclusively if the binding elements c-command each other. This is how Felka explains the notion of c-commanding:

> **(C-command)** A phrase α c-commands a phrase β if and only if the first branching node dominating α also dominates β (and neither α nor β dominates the other) (Felka 2014: 271).

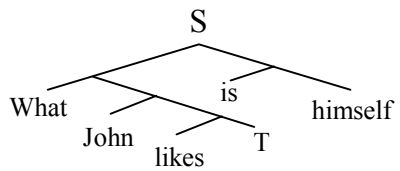
Those rules concern parts of a simplified syntactic tree of a sentence, e.g.:



John c-commands *himself* because they have the same parent and do not dominate each other, i.e. they are on the same level of the graph. Specificational sentences have the same effect as the non-copular sentence (33). Therefore, sentences like:

(34) What John likes is himself

have the same connectivity effects, and in (34) *John* binds *himself* just as well. However, if we regard (34) as an identity statement and not a specificational sentence, its syntactic tree would have changed in a way that does not account for those effects, namely:



In this structure, *John* does not c-command *himself*.

> Hence, if [sentences like (34)] were typical identity statements, then the expressions would not stand in the correct syntactic relation for binding to take place. But since *himself* is a bound pronoun in [(34)], specificational sentences like [(34)] are not identity statements (Felka 2014: 272).

Therefore, assuming that specificational sentences should be given a uniform analysis, and provided that (F2) is a specificational sentence due to its structural focus effects (as tested by Felka 2014: 270), we can conclude that (F2) is not an identity statement — even though it does not show any connectivity effects, because it has no pronouns. But does that mean Hofweber was right? Felka agrees with No Identity, but not so much with the rest of his conclusions. Most notably, she does not agree with Hofweber's verdict about the ontological commitments. In order to arrive at a conclusion about ontological commitments, Felka needs to reflect upon the role and proper analysis of putative referring terms *four* and *the number of moons of Jupiter*. For that purpose, she employs another linguistic method for the analysis of specificational sentences, the Question-In-Disguise theory.

2.3. Question-In-Disguise and ontological commitments

The Question-In-Disguise theory, or QID, says that specificational sentences are in fact disguised question-answer pairs. The pre-copular term is a question squeezed into the sentence indirectly, whereas the post-copula is an elliptical answer to that question (Felka 2014: 273). For instance:

(35) How sharks kill is by tearing their victims apart

should be interpreted as follows:

(35*) [How sharks kill~~?~~] is [~~Sharks kill~~ by tearing their victims apart].

Now, Felka's idea is that (F2) is also a disguised question-answer pair of this kind. If so, (F2) would look like this:

(F2*) [~~What~~ the number of moons of Jupiter ~~is?~~] is [~~Jupiter has~~ four ~~moons~~].

If this is the correct analysis of (F2), then Frege's Other Puzzle is solved. Just as Hofweber suspected, *four* is not a name for a number, but simply a determiner left from the answer shortened to fit in the question-answer pair of a specificational sentence. QID analysis even explains the focus effect of specificational sentences, since answers deemed not congruent by Hofweber and Felka turn out to have wrong syntactic structure to fit in the QID analysis (Felka 2014: 274).

However, Felka's QID argument does not solve the difficulty raised by Brogaard, i.e. what about *the number of moons of Jupiter*? Felka has no answer that would be satisfactory to an anti-deflationist like Hofweber. She must conclude that even though (F2) is not an identity statement and that *four* in (F2) is not a singular referring term, *the number of moons of Jupiter* still commits us to numbers (Felka 2014: 280).

2.4. Moltmann's other QID

A promising solution has been developed by Friederike Moltmann (2013: 280). She takes a broader version of QID, one that treats the indirect and elliptical character of questions and answers in purely semantic terms. It means that questions and answers relevant to a given specificational sentence can have a different syntactic structure in a QID analysis than it seems based on mere observation of the analysed sentence. What impact does it have on the Commitment Puzzle?

According to Moltmann, the QID analysis of (F2) should involve a different question, since the one proposed by Felka is not direct enough. The actual question is *How many moons Jupiter has?* So the appropriate QID form of (F2) is

(F2**) [How many moons Jupiter has~~?~~] is [~~Jupiter has~~ four ~~moons~~].

Moltmann's view is tempting, since it would solve all our problems with ontological commitments in the Puzzle with purely linguistic methods. The last suspicious referring term would be eliminated. For the argument to be valid, however, we would need a separate reason for the nominalization that takes place between the allegedly correct version (F2**) and the one employed in the original formulation of the Puzzle. Also, as Felka (2014: 280) points out, Moltmann would have to account for her broad vision of QID in a way that excludes Felka's more conservative view. Otherwise, if both views are acceptable, we get but Alston's case of two possible paraphrases for QID analysis. Without such an argument to exclude Felka's QID, ontological commitment stays anyway until other linguistic methods or, as Felka suggests, metaphysics explain it.

3. BALCERAK JACKSON'S BRACKETING/INDIFFERENCE APPROACH

As we have seen, the purely linguistic focus-construction approach to the Commitment Puzzle has difficulties in explaining away at least one referring term in (F2). However, some philosophers suspect that there is no reason to delve into all those syntactic considerations whatsoever. They believe there is another, simpler, purely pragmatic way of accounting for unexpected reference in (F2). Now, I will take a brief look at such a pragmatic approach to the Puzzle.

Balcerak Jackson's pragmatic approach does not go far from his remark (which I discussed in section 2.2) that (F1) and (F2) in fact have different truth conditions, and thus are not semantically equivalent — which makes the Commitment Puzzle disappear. He merely supports it with some more evidence against the focus-construction approach and argues that such a strictly linguistic approach is unnecessary.

Balcerak Jackson notes that Hofweber's solution to the Puzzle is but the result of incorrect reasoning that makes us infer from different communicative functions of (F1) and (F2) that they have the same truth conditions.

> If we take for granted that [(F1)] and [(F2)] *are* semantically equivalent, then the syntactic differences between them might well contribute to an explanation of the difference between them in terms of question/answer congruence effects. But noting that there are such differences does not lend any weight to the hypothesis that they are semantically equivalent sentences that merely differ in syntactic structure. Thus the congruence data provides no grounds for the [Hofweber's focus-construction] view over the fictionalist view (Balcerak Jackson 2013: 456).

Moreover, congruence effects data do not allow us to decide whether supposedly equivalent (F1) and (F2) have innocent or ontologically loaded truth conditions. All that remains among the assumptions, not conclusions, of the focus-construction approach. So the question is: if they are so different, why do we treat those sentences as equivalent anyway? To answer it, Balcerak Jackson offers a milder version of fictionalism (meaning that his view explains numbers away as useful social or conversational fictions[8]) based on *bracketing*.

Bracketing allows us to ignore some contexts of a sentence or circumstances that it could entail. Whether sentences like (F1) and (F2) are strictly equivalent or not might not matter to us in most cases. We treat them as *closely enough* equivalent and that suffices in most ordinary conversational contexts. Furthermore, this process has much to do with the phenomenon of the so-called indifference or non-commitment. Balcerak Jackson quotes Matti Eklund in this regard:

> with respect to much that we say or imply, we do not commit ourselves either to its literal truth or to its truth in any fiction; we are, simply, non-committed (Eklund 2005: 558).[9]

Thus, when we assert something, we do not really rule out all alternatives that might be present in the sentence. We only care about certain alternatives relevant to the situation. For instance, someone making an observation in a conversation about the extremely low percentage of Canadians in the room might say:

(36) The man drinking water is Canadian.

By saying so, she does not really care whether the liquid in the man's glass is really water. The only alternatives important for the conversation thus ruled out concern the man not being Canadian. The speaker did not intend to make any remark about the contents of the man's glass. She did not commit herself to the reference of that description. Consequently, (F2) can be treated as an utterance that rules out alternative numbers of moons of Jupiter — it denies that there are more or less than four moons of Jupiter (and says nothing about the corresponding numbers themselves). Therefore, even though (F2) contains referring terms, the speaker is by no means committed to anything apart from the moons she intends to talk about.

The bracketing/indifference approach, once accepted, succeeds at explaining other versions of the Commitment Puzzle as well. It scales so nicely because it is in-

---

[8] For more on contemporary fictionalism, cf. Yablo 2006.

[9] This is also what Husserl (1973) called non-positing nominal acts (investigation 5).

dependent of syntactical and semantical reflections about the role of referring terms and determiners, types of copular sentences, etc. Also, it has a major advantage over the fictionalist account: bracketing/indifference certainly occurs in ordinary conversations. The question is whether in the case of ontological commitments it works the way Balcerak Jackson envisaged it.

Unfortunately, this approach lacks methods and potential evidence to test its statements, and thus cannot be definitively falsified. That makes it suspicious, since personal preferences play major role in deciding whether to accept it or not. Linguistic approaches, be it focus-construction or not, can be confronted with abundance of available material. This testability makes them more convincing and reliable.

Finally, the indifference approach relies on context. It has to include conversational circumstances every single time bracketing is to be used. It means that in order to accept his analysis of (F2) as universal, Balcerak Jackson has to agree that it is true for all possible contexts. This is a very serious limitation since it requires unlimited knowledge not just about the world but also about the past and future. A successful bracketing theory would need to deal with these extensive requirements.

4. UNEXPECTED HELP FROM BIRO

Originally, John Biro's considerations did not concern the Commitment Puzzle. His paper (Biro 2010) is about Quine's argument against modal contexts and why it is not sound. However, his detailed analyses of the description *the number of planets* and its behaviour perfectly address the problem left by the focus-construction approaches of Hofweber and Felka. Quine's argument runs as follows:

(Q) (P1) Necessarily, 9 is greater than 7.
(P2) The number of planets = 9.
(C) Necessarily, the number of planets is greater than 7.

> Since [(Q.C)] is obviously false (we do not think that the number of planets *must* be nine), we must conclude that modal contexts are not well behaved in that they do not allow the substitution *salva veritate* of co-referring expressions. They are referentially opaque (and a symptom of a suspect underlying metaphysics) (Biro 2010: 623).

Now, having mentioned different ways to oppose Quine's argument, Biro chooses to focus on the line of reasoning already well known to us. He will (i) defend the position that (Q.P2) is not an identity statement, *the number of planets* is not a definite description, and thus the inference is prevented, (ii) discuss a more traditional position in which (Q.P2) is an identity statement but the argument does not succeed anyway.

First of all, when we utter sentences about numbers, we do not mean that two things are identical. This is why the following statement sounds so odd:

(37) The number of moons of Jupiter is identical with four.

It also explains why it is so easy to get rid of the assumed identity statement and replace it with an ordinary predication that says that being four in number is a property of the moons of Jupiter.

(38) The moons of Jupiter are four in number.
(39) The moons of Jupiter number four.
(40) Four numbers the moons of Jupiter.

And that is the real logical form of (F2). As Biro (2010: 626) put it: being nine in number is not the same thing as being the number nine. It is the very same process of asserting that something has a property that happens in many everyday sentences, (F1) included.

Second, Biro gives more evidence to show that treating *the number of planets* as a singular referring noun phrase generates utter nonsense. Consider:

(41) The number of planets is of great interest to astronomers.
(42) The number of planets is still a matter of debate.
(43) The number of planets was, until recently, believed to be nine.

In any of those sentences, when *the number of planets* is regarded as a singular referring term, then we must accept sentences like:

(41*) Nine is of great interest to astronomers.
(42*) Nine is still a matter of debate.
(43*) Nine was, until recently, believed to be nine.

He also pinpoints some cases where *the number of xs* does not refer to any particular number at all.

(44) The number of students at the University of Florida is about 45,000.
(45) The number of foreclosures grew by 50% last year.
(46) The number of divorces in the US far exceeds that in most other countries.

The alleged definite description seems to say simply *how many* or *that many*. This is a most interesting feature, as it unexpectedly gives (F2) connectivity effects that would let Felka claim that (F2) is not an identity statement directly, without the need to resort to the notion of uniform explanation of specificational sentences.

Third, treating *the number of planets* as a referring expression makes *number nine*'s meaning hazy. E.g. in a quiz situation, as shown by Biro:

Quiz-master: What is the number of planets?
Contestant #1: Eight!
Contestant #2: Nine!

What do those answers mean if *the number of planets* is really a number? We would need to treat them as some kind of identity statements of those two numbers. So

Contestant #1 should mean that 8=8 and Contestant #2 that 9=8. The first answer is not absurd, just not very informative, but the second is just pure nonsense.

Biro admits there are circumstances in which *the number of planets* can indeed be a definite description, e.g.:

(47) The number of planets is my favourite number.

But is not the case of (F2). Note that (47) may just as well be reformulated to:

(48) The number that is the number of planets is my favourite number.

So (i) it does not tell us anything about *the number of planets* and (ii) it can be remade as a mere predication again.

CONCLUSIONS

Thomas Hofweber introduced the idea that (F2) might not be an identity statement. He suggested that (F2) shows structural focus effects, and so it conveys the same content as (F1), just in a different way. Thus, (F2) would be merely a pleonastic paraphrase of (F1) with identical truth conditions and the same syntactical roles for its elements. Were it correct, it would solve both the Commitment Puzzle and Frege's Other Puzzle.

However, Hofweber's account was contested. Berit Brogaard claims that there are identity statements that show focus effects independent from sentence stress. Hofweber responds that either (i) they are not in fact identity statements; they turn into predications when used as answers to questions presented by Brogaard, or (ii) it is not a structural focus effect: the stress is caused by the extraordinarily long pre-copular term. Yet his evidence has not been too convincing.

Brendan Balcerak Jackson questioned the equivalence of (F1) and (F2) on the grounds of intuitive meaning. Also, he pointed out that Hofweber's focus-construction approach does not address the problem of the other (than *four*) assumed referring term, i.e. *the number of moons of Jupiter*.

Katharina Felka proposed her own explanation of focus effects in (F2). She claimed that they could be accounted for within the specificational subclass of copular sentences. Then she argued that specificational sentences cannot at the same time be identity statements, thus concluding that (F2) is not an identity statement. Further on Felka used the Question-In-Disguise method to show that *four* is in fact part of an elliptical answer to the disguised question about the number of moons of Jupiter, providing evidence for the linguistic solution of Frege's Other Puzzle. She concluded by admitting that the linguistic approach cannot account for the other alleged singular referring term, namely *the number of moons of Jupiter*. Friederike Moltmann offered an alternative interpretation of (F2) within a slightly different theory of QID. However, her position needs further evidence in order to be functional.

As an alternative to the focus-construction approach, Balcerak Jackson proposed a purely pragmatic answer to the Commitment Puzzle. He claims that (F2) is an identity statement, and so it contains two singular referring terms that in literal reading seem to commit us to abstracts in a most unexpected way. However, in fact the commitment does not occur. The referring expressions are used in a special non-committing manner that serves as a background for the actual phenomenon of ruling out alternatives in conversational contexts. His approach, interesting though it is, depends on subjective assessment of evidence, and so it is not testable or as reliable as the linguistic approaches. Furthermore, it requires assessment of the context for every single occurrence of bracketing. Accordingly, a universal analysis of (F2) would require unlimited knowledge about the world in the past and in the future.

Finally, I presented John Biro's thoughts on the definite description *the number of planets* and proposed to consider additional evidence against the claim that (F2) is an identity statement and that *the number of moons of Jupiter* in (F2) is a referring expression. Biro argued that it is more plausible to interpret (F2) as a numbering predication than as an identity statement. Also, he pointed out that *the number of planets* viewed as a referring expression leads to nonsensical results. I conclude by pointing out that it is precisely the situation of *the number of moons of Jupiter* in (F2).

These findings patch the focus-construction approach exactly at the weak spots detected by Brogaard, Balcerak Jackson, and Felka. The other supposed referring term, *the number of moons of Jupiter*, has been accounted for. Its explanation gave (F2) connectivity effects and thus confirmed Felka's argumentation for No Identity. Biro's remarks have also undermined Brogaard's objections to Hofweber's claim that identity statements cannot show structural focus effects. This linguistic approach seems to account for all the problems surrounding Frege's biconditional. It explains away the ontological commitment and dissolves Frege's Other Puzzle.

REFERENCES

Alston W. P. (1958), *Ontological Commitments*, „Philosophical Studies" 9(1-2), 8-17.

Balcerak Jackson B. (2013), *Defusing Easy Arguments for Numbers*, „Linguistics and Philosophy" 36(1), 447-461.

Balcerak Jackson B. (2014), *What Does Displacement Explain, and What Do Congruence Effects Show?*, „Linguistics and Philosophy" 37(3), 269-274.

Biro J. (2010), *The Number of Planets is Not a Number*, „Analysis" 70(4), 622-631.

Brogaard B. (2007), *Number Words and Ontological Commitments*, „Philosophical Quarterly" 57(226), 1-20.

Eklund M. (2005), *Fiction, Indifference, and Ontology*, „Philosophy and Phenomenological Research" 71(3), 557-579.

Felka K. (2014), *Number Words and Reference to Numbers*, „Philosophical Studies" 168(1), 261-282.

Frege G. (1884), *Die Grundlagen der Arithmetik. Eine logisch mathematische Untersuchung über den Begriff der Zahl*, Breslau: Wilhelm Koebner.

Higgins R. F. (1979), *The Pseudo-cleft Construction in English*, New York, NY: Garland.

Hofweber T. (2005a), *Number Determiners, Numbers, and Arithmetic*, „Philosophical Review" 114(2), 179-225.

Hofweber T. (2005b), *A Puzzle about Ontology*, „Noûs" 39(2), 265-283.

Hofweber T. (2007), *Innocent Statements and Their Metaphysically Loaded Counterparts,* „Philosophers' Imprint" 7(1), 1-33.

Hofweber T. (2014), *Extraction, Displacement and Focus. A Reply to Balcerak Jackson,* „Linguistics and Philosophy" 37(3), 263-267.

Husserl E. (1973), *Logical Investigations*, London: Routledge.

Mikkelsen L. (2011), *Copular Clauses* [in:] *Semantics. An International Handbook of Natural Language Meaning*, vol. 2, C. Maienborn, K. von Heusinger, P. Portner (eds.), Berlin: Mouton de Gruyter, 1805-1829.

Moltmann F. (2013), *Reference to Numbers in Natural Language*, „Philosophical Studies" 162(3), 499-536.

Schiffer S. (1987), *Remnants of Meaning*, Cambridge, MA: MIT Press.

Yablo S. (2006), *The Myth of the Seven* [in:] *Fictionalist Approaches to Metaphysics*, M. Kalderon (ed.), Oxford: Clarendon Press.