



Propositionalism and Questions that do not have Correct Answers

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Abstract

As the label suggests, according to *propositionalism*, each intentional mental state, attitude or event is or involves a relation to a proposition. In this paper, I will discuss a case that seems *prima facie* not to be accountable for by propositionalism. After having presented the case, I will show why it is different from others that have been discussed in the literature as able to show that propositionalism cannot be correct. I will then consider what the propositionalist can say to fix the problem and I will show that no strategy that is genuinely propositionalist seems promising. I will not conclude that propositionalism is doomed. But I will show that if propositionalism can account for our case at all, it can only do so by losing its main appeal, i.e. its elegance and simplicity. But then propositionalism seems to have lost its advantage with respect to its obvious alternative, i.e. a pluralist account according to which mental states, attitudes and events are not all homogeneously relations to propositions, but rather our mental life should be accounted for in terms of a plurality of kinds of relata.

Keywords Propositionalism · Interrogative attitudes · Questions · Wondering · Gappy propositions

As the label suggests, according to *propositionalism*, all intentionality is to be explained in terms of propositions. As Michelle Montague puts it, propositionalism concerns ‘every mental state or event (thought, belief, hope, fear, perception, etc.) that has an object, or is about something, or directed at something’ (2007: 503) and it is the view that each of those states and events is or involves a relation to a proposition. Of course, it would be helpful to know what propositions are and what these relations to propositions amount to. But, as we all learnt from the literature on propositions, these are not pieces of knowledge we have at the moment. We can nonetheless rely on what we know. We know, for example, that propositions are the

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kind of things that are true or false and we can avoid making any further assumption on what propositions are, i.e. on whether they are structured entities, or on whether they are mind- or language-independent. We also know that propositions should not be taken as direct objects of all our mental states, events and attitudes. As Arthur Prior noted long ago (1971: 14–16), one thing is to fear that the cat is on the mat, another is to fear the proposition that the cat is on the mat: Lucy, who just bought a magnificent mat, fears that the cat is on the mat, making a mess, but since she does not suffer from propositional phobia, she is not fearing any proposition. The proposition should then be taken not as the direct object of the attitude, but as the *content* of such attitude (Forbes, 2018: 121; King, 2007: 154; Künné, 2003a: 260). Of course, it would be helpful to know what the relation of *having a proposition as content* amounts to. But, together with propositionalists (Forbes, 2018: 121), we can leave the relation as a primitive. The target of this paper will then simply be the view that each intentional mental state, attitude or event is or involves a relation to a proposition, which is its content.

As Montague maintains, propositionalism is ‘the orthodoxy, the implicit default’ (2007: 505), often endorsed without critical discussion or a particular motivation.¹ But one of the main motivations for propositionalism and the main reason why it would be great if it were true is its elegance and simplicity. First and foremost, simplicity and elegance in terms of kinds of mental relata: according to propositionalism, we can account for all our intentional mental life in terms of propositions. While this is surely appealing, one might wonder why on earth we should expect something as complex as the mind to be explicable in terms of a simple account when it comes to its relata. But there is in fact a second sense in which the account is considered simple and elegant: propositionalism is for example taken to be able to account with elegance and simplicity for many things we are happy to say and conclusions we are happy to infer: we do say things like ‘Long before I knew those things about you I believed them’ (Williamson, 2000: 43) and ‘I will confess something you will find hard to believe’; similarly, from the pieces of knowledge that Mia believes *that Dave is a good friend* and that Laura finds it undeniable *that Dave is a good friend*, we feel entitled to infer that there is something which Mia believes and Laura finds undeniable, i.e. *that Dave is a good friend*. If all mental states, attitudes and events are relations to the same kind of thing, i.e. a proposition, it seems that all this can be straightforwardly accounted for in a simple and elegant way.

Despite its simplicity and elegance, propositionalism has been called into question in various ways. As we will see (Sects. 1, 2), things are not easy, though: all objections raise challenging questions or rely on controversial assumptions that propositionalists can resist. In this paper, I will then present a new case that seems *prima facie* not to be accountable for by propositionalism (Sect. 3). I will then consider what the propositionalist can say to fix the problem and I will show that no strategy that is genuinely propositionalist seems promising (Sects. 4–7). I will not conclude that propositionalism is doomed. But I will show that if propositionalism can account for our case at all, it can only do so by losing its main appeal, i.e. its

¹ See Montague (2007) also for abundant references to who defended or defends such a view.

elegance and simplicity. But then propositionalism seems to have lost its advantage with respect to its obvious alternative. The obvious alternative is a pluralist account, according to which mental states, attitudes and events are not all homogeneously relations to propositions. Rather, our mental life should be accounted for in terms of a plurality of kinds of relations, and, in the case we will be discussing, the relation might be taken to be a *gappy proposition*, which, as we will see, is not a proposition, despite the label.

1 Love, Desires and Knowledge

Appealing as it might be, propositionalism has been called into question in different ways. First, some have held that some mental states and attitudes are directed toward objects like you and me rather than propositions. For example, love does not seem propositional (Grzankowski, 2013, 2016a; Montague, 2007): when you love Mirtha, you do not love *that Mirtha is ...*, you just love Mirtha. But, as it has been said, ‘love’ is ‘the most ambiguous word’, and this was not a Romantic poet, it was Peter Geach (1979: 165)! In fact, propositionalists had scope for replies (Sinhababu, 2015; Kriegel, 2016. See Grzankowski, 2016b for a non-propositionalist rejoinder).

Second, Delia Graff Fara (2013) and William Lycan (2012: 206–208) maintained that propositionalism is unable to account properly for desires because of an issue of grain: following Lycan’s example, suppose you desire to be famous. The propositionalist would suggest that your attitude is a relation to the proposition *that you are famous*. But this, the objection goes, cannot be your desire, because such a desire would be satisfied if you published something which contains ‘a fallacy so incredibly stupid that the news of your gaffe spreads to the entire English-speaking world’ (Lycan, 2012: 206). It seems you can cry: ‘I didn’t mean famous for *that*’, and then it seems that in the circumstances your desire is not satisfied; but then your desire cannot be a relation to the proposition *that you are famous*, as this proposition is indeed true in the circumstances. This objection to propositionalism, intuitive as it might sound, relies on some questionable assumptions on how we should count desires, though: if you desire to become famous thanks to an admirable publication, do you also desire to become famous tout court? For the objection to work, we should answer this question in the negative and this answer is challengeable. Unsurprisingly, propositionalists did in fact challenge it (Braun, 2015).

Third, others have suggested that facts and propositions are entities of different kinds, and that knowledge and belief are not homogeneous, in that we believe propositions, but know facts (Hossack, 2007; Merricks, 2009; Moffett, 2003; Parsons, 1993; Ryle 1929; Vendler, 1980). This line of reasoning clearly obliges us to dig deep into metaphysics to understand what facts are, and it then leaves the propositionalist quite an obvious way out, i.e. to hold that, despite appearances to the

contrary, facts, acts and events are propositions.² Scott Soames, for example, exactly took this way out:

the unreflective opinion that propositions can be neither things we do nor things that happen is not sacrosanct and may itself be due either to a failure to theorize, or to a tendency to do so incorrectly. (2014: 244)

Fourth, many have forcefully argued that knowing-how cannot be accounted for in terms of propositions. But those arguments have been resisted with equal force (Stanley, 2011: chapters 1;7) and, moreover, these arguments, too, rely on controversial notions. Katalin Farkas (2016), to give an example, relies on the extended mind hypothesis and then it is clear that things are not going to be smooth here, either.

Thus, unsurprisingly, arguments to the conclusion that propositionalism is false that stem from considering love, desires or knowledge usually involve understanding many other things, which range from issues in metaphysics to hypotheses in the philosophy of mind, and open issues that are controversial and hard to settle.

2 Wondering

Besides love, desires and knowledge, also curiosity, inquiry and suspension of judgment have been taken into consideration in order to establish whether propositionalism is correct.

Defenders of propositions usually take wondering as having as content the correct answer(s) (Ginzburg & Sag, 2000; Hamblin, 1958; Higginbotham, 1996; Hintikka, 1975; Karttunen, 1977), or the correct answer(s) relative to a world (Groenendijk & Stokhof, 1982; Stanley, 2011: 43), to the question the subject is wondering about. If you wonder what the capital of Peru is, for example, your attitude is taken to have as content the proposition *that Lima is the capital of Peru* (relative to this world), or, to distinguish wondering what the capital of Peru is from wondering whether Lima is the capital of Peru, your wondering what the capital of Peru is, is taken to have as content the proposition (relative to the actual world) *that Lima is what the capital of Peru is* (Stout, 2010).

Many have maintained that this propositionalist account cannot be a correct account of wondering and, similarly, of curiosity and inquiry (Atkins, 2017; Bromberger, 1992; Carruthers, 2018; Friedman, 2013; Whitcomb, 2010. See Archers, 2018; Masny, 2018 for discussion). To use one of Sylvan Bromberger's examples (1992: 27), when Jim wonders why kettles emit a humming noise just before the water begins to boil, enemies of propositionalism hold, there is an answer to the question 'Why do kettles emit a humming noise just before the water begins to boil?', but we should not take it to be the content of the attitude, which should instead be a question. The considerations put forward are sophisticated and various,

² As Kriegel (2016) shows, arguments to the conclusion that some emotional attitudes such as being happy are not propositional, such as those suggested by Montague (2009), similarly rely on some questionable theses on the identity criteria for facts and events.

but, to have a taste, here is why Bromberger think that Jim cannot be taken to be related to an answer:

on that person's views, the question Q admits of a right answer, yet the person can think of no answer, can make up no answer, can generate from his mental repertoire no answer to which given that person's views, there are no decisive objections (1992: 81; see also Friedman, 2013: 162–163).

There is a propositionalist reply to the arguments that these enemies of propositionism put forward, though. A propositionalist can hold that, also in the case of Jim's wondering why kettles emit a humming noise just before the water begins to boil, the proposition that is the correct answer to the question 'Why do kettles emit a humming noise just before the water begins to boil?' is indeed the content of the attitude. But this content might be not transparent to Jim, since it is mediated by the question-like, irreducible to propositions, mode of presentation, way of grasping or apprehending, or guise, something somehow similar to the very question 'Why do kettles emit a humming noise just before the water begins to boil?' (Schaffer, 2007: 394–395).

While nobody ever explained clearly what modes of presentation, ways of grasping or apprehending, or guises are supposed to be, and one feels justified in being suspicious about them, a propositionalist can still exploit them in an attempt at saving her account from cases such as Jim. As long as there is a correct answer to the question the subject is wondering about, propositionalists do have a proposition for the mental event, state or attitude of such a subject.

3 Little Suzy

But what happens when there is no correct answer? This will be the case we will discuss in this paper. To that end, consider Little Suzy. She just got introduced to numbers. She has been told that there is 1, and after 1 there is 2, in the usual way. She can now count up to 10 and she already has some ideas that things do not stop there, but she is uncertain. If asked what follows 15, for example, she does not know what to say. But if asked, she would say that 22 follows 21. She is moreover firm that somewhere things should stop. She is a very smart little woman, eager to understand more, curious about numbers, and at the moment she is wondering what the greatest number is.

This case is quite realistic, as all of us who have been around kids learning maths know, and I then take it that we cannot simply deny that Little Suzy wonders what the greatest number is.³ Now if, as propositionalists say, all our mental states,

³ As Groenendijk & Stokhof note, 'which'-clauses give rise to 'a certain kind of ambiguity, which resembles the familiar *de dicto/de re* ambiguity' (1982: 181–182). Take their example—John knows which girl walks—and the following scenario: just one individual walks, it is a girl; John knows of this individual that she is the one that walks, but fails to believe that she is a girl. As they maintain, in the scenario, their example, read *de re*, is true, but false if read *de dicto*. For the *de dicto* reading to be true, John 'should believe of every individual which is in fact a girl and walks, not only that she walks, but also that she is a girl' (1982: 182). While it is not clear that the ambiguity arises in the case of a clause such as 'what the greatest number is', it does surely arise in the case of the near 'which number is the

attitudes and events are or involve relations to propositions, then there should be a proposition Little Suzy is related to. To the best of my knowledge, no friend of propositionalism has discussed attributions involving questions, such as our ‘What is the greatest number?’, ‘When did I start smoking?’, ‘Who is the president of England?’, ‘Where is Atlantis?’,⁴ which involve a presuppositional failure.⁵ This is surprising. Since these questions involve presuppositional failure, they have no correct answer. As we saw, propositionalists can maintain that neither your wondering what the capital of Peru is nor Jim’s wondering why kettles emit a humming noise just before the water begins to boil shows the falsity of propositionalism. For both ‘What is the capital of Peru?’ and ‘Why do kettles emit a humming noise just before the water begins to boil?’ have correct answers and those answers, maybe under a mode of presentations, maybe relatively to a world, are the propositions you and Jim can be taken to be related to. But, clearly, propositionalists cannot hold that Little Suzy’s wondering has as content the proposition that counts as the correct answer to the question ‘What is the greatest number?’, since there is none and so there is at a first look simply no proposition that can count as the content of the attitude, whether or not such a content would then have to be taken as mediated by a mode of presentation, whatever that might be.

So, in order for propositionalism to be able to account for Little Suzy, the usual strategy cannot be invoked and a proposition that is not the correct answer to the relevant question but that can count as what Little Suzy is related to needs somehow to be found. Is there any that can do the job, i.e. is there anything of the form *that ...* that we can take to be what Little Suzy is related to in wondering what the greatest number is? In what follows, I will consider a number of strategies to account for Little Suzy that might seem, at first, to help propositionalists answer this question. For each, I will show that it is not a strategy the propositionalist can genuinely adopt or that it incurs serious problems.

4 Propositions of the Form *that x is what the Greatest Number is*

When it comes to questions that do not have a correct answer *in the actual world*, it is worth checking other possible worlds and then whether relativizing answers to possible worlds (Groenendijk & Stokhof, 1982; Stanley, 2011: 43) might help. One

Footnote 3 (continued)

greatest’. Employing Groenendijk & Stokhof’s distinction, we can say that our Little Suzy does wonder that *de dicto*, i.e. she wonders which one of those things she thinks about as numbers is the greatest, and this is the wondering we will be focusing on in the paper.

⁴ But in another sense ‘What is the greatest number?’ is importantly different from these other questions, since it concerns a domain of objects which is infinite. As we will see this will become important in Sects. 4 and 5.

⁵ Just like the friends, also the enemies of propositionalism neglected questions with presuppositional failure. Friedman (2017: 315–316) briefly considers cases of presuppositional failure, but for the orthogonal issue of the rationality of inquiring into a question known to have no answer. For discussion, see Archer 2019.

might suggest that Little Suzy can be taken to be related to a proposition of the form *that x is what the greatest number is*, which is the correct answer to the question ‘What is the greatest number?’ *relatively to another possible world*.

Worth checking as they are, possible worlds are not going to help, though. For our question lacks a correct answer *in any possible world*, so relativising things to possible worlds makes no difference.⁶

When it comes to questions that do not have a correct answer *in any possible world*, it is tempting to check beyond what is possible. It is tempting to say that, although the greatest number does not exist and does not possibly exist, it is somehow there in a Meinongian realm. One way propositionalists can try to exploit Meinong in order to account for Little Suzy might be the following: there is the greatest number, it is only that it does not and cannot exist! Thus there is a proposition that is the correct answer to the question ‘What is the greatest number?’, i.e. the proposition that such a Meinongian entity is what the greatest number is, and this is what Little Suzy is related to.

Intriguing as this option might be, first, adopting a Meinongian ontology would be quite a price to pay to save propositionalism, and probably many propositionalists would not be inclined to pay such a price. Moreover, it is far from clear that adopting a Meinongian ontology would help. Even if there is anything like such a proposition made of Meinongian objects, it is not what Little Suzy is wondering. When she wonders what the greatest number is, she wants to know what, *among the existing numbers*, is the greatest and she wonders about those existing numbers, not about non-existing Meinongian ones. What if we should be nominalists about numbers, so that also 22 does not exist? This would not make much of a difference. We still would and have to distinguish numbers such as 22 from Meinongian greatest numbers. However the two categories of numbers are distinguished according to the hard-core nominalist, Little Suzy’s attitude is about numbers of the first category.

An option to stay in our realm is that Little Suzy is related to the proposition *that the greatest number is what the greatest number is*.

But it is clear that this option is a non-starter: Little Lucy is too smart to wonder that.

A better option is to hold that Little Suzy is wondering one of the infinite propositions of the form *that x is what the greatest number is*, where a numeral is substituted for the *x*. This would allow propositionalists to find a proposition also for questions that do not have a correct answer, such as our ‘What is the greatest number?’.

But here the problem is arbitrariness: which one of these propositions, infinite in number? The proposition *that 1'000'000 is what the greatest number is*, the proposition *that 1'000'001 is what the greatest number is*, or the proposition *that 22 is what the greatest number is*? Picking and choosing seems completely arbitrary.

⁶ Thanks to an anonymous referee for suggesting me to discuss relativisations to possible worlds.

5 Infinite Disjunctions (or Sets)

In order to stay in this realm and to solve the problem of arbitrariness, a propositionalist might then suggest that Little Suzy is wondering not about one particular proposition of the form *that x is what the greatest number is* with a numeral substituted for the x , but about the proposition which is the disjunction of all such propositions. Another, probably more appealing, solution in this direction would be to say that Little Suzy is related not the proposition that is the infinite disjunction of propositions of the form *that x is what the greatest number is*, but to the set of all those propositions. But this is not, or at least not immediately a propositionalist solution: sets and propositions are not obviously identical, for example because propositions are true or false, sets are neither. Anyway, with the infinite disjunction (and the set, if it can be taken to be a proposition), arbitrary picking and choosing would be solved.

It is quite difficult, though, to understand what it takes to have as content an infinite disjunction about all numbers (or the set), and all in all the burden would be on propositionalists to explain this to us, and what a burden! Before this question has been answered, one might wonder whether this is a proposal spelled out in enough detail to be assessable at all.

Moreover, clearly, propositionalists should hold that having such an infinite proposition (or set) as content cannot involve actively thinking about every individual number, as we ourselves are unable to do that, let alone Little Suzy. Thus propositionalists would have to allow for subjects to have access to this infinite disjunction (or set) in some other way, maybe via the mediation of some mode of presentation. Now, intuitively, in order to have such an infinite proposition (or set) as mental content, one needs to know something more about numbers than Little Suzy does. Crucially, it seems that one needs to grasp that the disjunction (or the set) is infinite, i.e. that numbers go on ad infinitum, and so that there is no greatest number. Little Suzy actually misses this conceptual resource (Farkas, 2016: 114; Friedman, 2013: 161) and we can even posit that Little Suzy completely lacks the notion of infinity. In the end, if she had such a resource so as to grasp that the disjunction is infinite and then to know that numbers go on ad infinitum, she would actually know that there is no greatest number and, being smart, she would not wonder what the greatest number is.

Maybe, all this can be called into question, but it seems intuitive enough: how can we have a content, which is crucially infinite, if we lack the conceptual resources to understand infinity? Suppose that this can be resisted, by urging that you do not need to have the concept of infinity to grasp something infinite. But what justifies the thesis that Little Suzy's very minimal knowledge of some numbers and some partial knowledge of some basic operations is sufficient to grasp a disjunction (or set) about all numbers? For reasons different from our Little Suzy, Jonathan Schaffer in fact suggests that knowing, for example, what $2 + 2$ makes is knowing a correct answer *under a question-like mode of presentation* (2007: 394–395). The propositionalist can maybe urge that the very question 'What is the greatest number?' is a mode of presentation for such an infinite disjunction

(or set) and, under the mode of presentation, Little Suzy indeed grasps such an infinite disjunction (or set) and then the infinity of numbers.

But no matter what you think about modes of presentation, ways or guises, this option is still problematic. What does ‘under’ mean here?

If it means that the mode of presentation is part of the content of the attitude, then this is not a propositional option. According to propositionalism, all our mental events, states and attitudes homogeneously have propositions as content. But according to this option, Little Suzy is wondering a mode of presentation. Schaffer does not say much about these modes of presentation, but does say that they are not reducible to a proposition (2007: 398). This is not a surprise. If they were, we would be back to our original question: What proposition?

If, on the other hand, the ‘under’ means that the mode of presentation is not part of the content of the attitude, then we incur a different issue. We can wonder about such an infinite disjunction (or set) for various purposes, i.e. under various different modes of presentation. But then we would conflate different states, attitudes and events. Imagine Gödel. Imagine moreover that the infinite disjunction of propositions of the form *that x is what the greatest number is* with a numeral substituted for the *x* is what he could use in a new proof of the incompleteness of arithmetic. Are we sure we want to say that the content of Gödel’s wondering what he could use in the brand new proof is exactly the same as the content of Little Suzy’s attitude, as in accordance with this propositionalist approach to Little Suzy? Is it not much more intuitive to think that Little Suzy will only grasp the infinity of numbers in a few years? Something to explain this intuition away would certainly be needed.

The propositionalist can here protest that the content of Gödel’s wondering is not the infinite disjunction (or set), but the proposition *that such an infinite disjunction (or set) is what can be used in the new proof*, so that his wondering and Little Suzy’s do have different contents. But suppose Gödel now knows what he can use in his new proof and decides to indulge into simply wondering about such an infinite disjunction (or set). Would not this be an act having as content the very content as Little Suzy’s attitude?

Propositionalists could try to urge that the infinite disjunction is the direct object rather than the content of Gödel’s attitude and then Little Suzy’s and Gödel’s attitudes are different, in the same way in which fearing that the cat is on the mat is different from fearing the proposition that the cat is on the mat. But given that there is no particular question Gödel is asking himself about such a disjunction (or set), if the infinite disjunction (or set) is the direct object rather than the content of Gödel’s attitude, what would the propositional content of Gödel’s attitude be? Thus it seems better for propositionalists to maintain that the infinite disjunction (or set) is the content of Gödel’s attitude. But then Gödel’s and Little Suzy’s attitudes are to be taken to have the same content and this does not seem correct: Little Suzy is wondering what the greatest number is, Gödel knows very well that there is no greatest number and is wondering about an infinite disjunction he finds interesting for some reason or other, but certainly does not wonder what the greatest number is. Their mental contents seem different.

In conceding that there is a difference between Little Suzy and Gödel, a propositionalist might try to invoke the *de dicto/de re* distinction and hold that while one

wonders *de re* about the infinite disjunction (or set), the other is wondering *de dicto* about such disjunction (or set).

The main problem for this suggestion of distinguishing Little Suzy's and Gödel's wonderings which have as content the infinite disjunction (or set) in terms of the *de dicto/de re* distinction is that one might protest that the infinite disjunction (or the set) is just not the kind of thing we can be related to *de re*. Those who would reject the possibility of us having any *de re* relation with anything but ourselves would surely urge this, but even if we have a more generous class of objects we can be related to *de re*, the infinite disjunction (or the set) seems not to be the kind of things that can belong to such a class. Relations *de re* seem to involve causality and at bottom somebody directly experiencing the object. As Bach puts it, the experience does not have to be of the very subject who is related to the object *de re*, but intuitively in order for somebody to be related *de re* to something, somebody or other should have experienced it: in order to have a *de re* mental relation with something there should be a connection to the object, where such 'connection is causal-historical, and involves a chain of representations originating with a perception of the object' (2010: 55. See also 41; 59). The infinite disjunction (or set) then does not seem a candidate for a *de re* relation not just for Little Suzy, but for anybody: it is not the kind of thing that can enter into causal chains or that anybody can ever perceive.

A propositionalist might reply that we can surely perceive the infinite disjunction (or set) with our *mental eye*.

But what JC Beall says about the mental eye, although for other purposes and about another infinite sequence, i.e. Yablo's paradox, applies nicely here as well:

If mental eyes can do the trick, then so be it. At this stage, however, nobody has begun to invoke the mental eye defence, let alone explain it sufficiently (Beall, 2001: 186)⁷⁸

In order to differentiate Little Suzy's wondering from Gödel's by working on differentiating the relation, while avoiding the *de dicto/de re* distinction, propositionalists might at this point hold that Gödel is not wondering the proposition, he is rather in an attitude of *wondering-about* with as content the proposition, an attitude to be distinguished from the attitude of *wondering* with as content the same proposition, i.e. the attitude Little Suzy is in. In this way, the propositionalist would have a proposition for Little Suzy, without having conflated attitudes that should be kept apart.

But it is not clear that an account whose main appeal is simplicity and elegance would want to go this way. What is this *wondering-about*, which is something distinct from *wondering*? We should moreover take into account that we also have 'who', 'which', 'where', 'when', 'why', 'how' and it is natural to share Ted Parent's

⁷ It is worth noting that Bach himself confesses to being 'stuck on questions like ... Can we have singular thoughts about properties, kinds, relations, numbers, sets, and other abstract objects?' (2020: 59 and f.21).

⁸ Thanks again to an anonymous referee for suggesting me to discuss whether the *de dicto/de re* distinction can be invoked here by the propositionalist.

frustration who, in trying to list all different interrogative pronouns, decided not to do that on the recognition that

there are a surprising number of wh-words. (And don't forget the use of 'if' as a replacement for 'whether'.) 'Where' especially has a number of variants, since many function-words can be added to it, as in 'wherein', 'whereas', 'wherefore', 'whereby', 'whereabout(s)', etc. Other wh-words have stylized variants like 'whence' and 'whither', plus there are case-marking versions like 'whom' and 'whose'. Many of these also allow the addition of 'ever' as in 'whichever', 'whomever', etc. Even so, there are additional examples that do not fit quite any of these descriptions, such as 'whosoever', 'whatnot', and 'wherewithal'. (2014: 91)

The propositionalist would then presumably need to introduce quite a number of different attitudes and it is not clear what they could say about such distinctions. We all know that it is not clear whether knowing-how is different from knowing-that, but do we really want to distinguish wondering-where from wondering-whence? Even assuming that these distinctions trace real differences, things would have to be spelled out in great detail before somebody who is not already inclined toward propositionalism would be convinced.

6 Quantifiers

If we do not have a particular object in mind and we cannot or do not want to list them all, quantifiers are the resource for us. The Jim of Bromberger's example, for instance, surely thinks that *something* causes kettles to emit a humming noise just before the water begins to boil. Little Suzy does not have a particular number in mind, and it does not seem she can handle all the numbers. The propositionalist might then try to rely on quantifiers.

One option that immediately comes to mind is that Little Suzy (but not Gödel) is related to the proposition that *that there is a greatest number*.

This option is not going to work, though, as it would conflate wondering-what with wondering-whether, as we saw in Sect. 2. Let's assume that the content of Little Suzy's attitude of wondering what the greatest number is really is the proposition *that there is a greatest number*. What is the content of the attitude of wondering *whether* there is a greatest number? Presumably it is again the proposition *that there is a greatest number*. But since it is true that Little Suzy is wondering what the greatest number is, then it would also be true that she is wondering whether there is a greatest number, because both attitudes are relations of wondering to the same proposition. But it is not true that Little Suzy wonders whether there is a greatest number. Ex hypothesi, she actually believes that there is a greatest number, and only because she believes that firmly instead of wondering it, she is wondering which one of the numbers is the greatest.

In fact, not just the proposition *that there is a greatest number*, but also other quantified propositions that might come to mind, such as the proposition *that there is no greatest number* or the proposition *that nothing is the greatest number*, incur

issues similar to those just seen: Little Suzy is wondering what the greatest number is exactly because she believes that there is one and thinks that it is false that there is no greatest number or that none is. She cannot have as content of wondering those propositions, as she believes them to be false, and in fact it is exactly because she believes them to be false instead of wondering about them that she can wonder, as she does, what the greatest number is.

There are four ways in which a propositionalist might try here to resist the line of thought that led us to exclude that quantifiers can help.

The first is to call into question that Little Suzy does not wonder whether there is a greatest number because she actually believes that there is one. While it strikes us as intuitive that in normal cases if you believe something you do not wonder about it, there might be cases, as Friedman stresses, in which one wonders whether p while believing that p :

someone who believed that Joe murdered the doctor, but momentarily forgot that they had that belief might wonder or be curious about who killed her ... when the known or believed answer is hidden from conscious awareness it's easy to imagine subjects wondering or curious about or contemplating the questions those beliefs answer. (2019: 302)

But Little Suzy's case does not seem to fit this description: Little Suzy is completely aware that she believes that there is a greatest number, and still wonders what the greatest number is.

Beyond those put forward by Friedman, Archer also considers other cases where it seems possible to both believe that p and wonder whether p :

(12) I am wondering whether the bank is open, but I *believe* it is.
Statement (12) ... is the sort of thing that would be naturally uttered by someone who believed that the bank was open, but who was less than completely certain. (2018: 600)

Archer's cases crucially involve that the subject believes that p with less than full certainty. Again, this is not the case with Little Suzy: *ex hypothesi*, she is absolutely positive that there is a greatest number.

Moreover, according to the propositional proposal we are considering, you wonder what the greatest number is if and only if you wonder whether there is one, since both would be attitudes of wondering toward the proposition *that there is a greatest number*. Even if Little Suzy's case did in the end fit Friedman's or Archer's descriptions, that would still not mean that we should conflate wondering whether there is a greatest number and wondering what the greatest number is. These seem indeed different attitudes and Little Suzy is exactly a counterexample to the biconditional above,⁹ and then a defence of the thesis that they are instead identical would be needed before this could be considered as a genuine option.

⁹ For other cases against the idea that we can conflate some attitudes-what and attitudes-whether, in particular when it comes to knowledge, see Stout (2010).

There is a second way in which the propositionalist might try to resist the idea that quantifiers are not going to give us a propositional content for Little Suzy. Propositionalists can reject the claim that the content of the attitude of wondering whether there is a greatest number is the proposition *that there is a greatest number*. Rather, they can suggest, the attitude of wondering whether there is a greatest number has as content something along the lines of the proposition *that either there is a greatest number or there is no greatest number*. After all, when we wonder whether dolphins are mammals, for example, we are asking ourselves which of the following is true: dolphins are mammals; dolphins are not mammals. In accordance with this proposal, wondering what the greatest number is and wondering whether there is a greatest number would have different content. Propositionalists would then be able to differentiate the two attitudes, as they should, and Little Suzy would still be able to both believe that there is a greatest number and wonder what the greatest number is.

But there is a serious problem with this option: we can wonder whether there is a greatest number, but we can also have other attitudes about that. For example, after a few years of maths, we can come to know whether there is a greatest number. When we come to know whether there is a greatest number, the content of the piece of knowledge we come to have is certainly not the proposition *that either there is a greatest number or there is no greatest number*. This is not something we need a few years of maths for. In fact, this is something that also smart Little Suzy knows. When we come to know whether there is a greatest number, we come to know that there is no greatest number, i.e. we come to know the correct answer to the question ‘Is there a greatest number?’, we do not come to know an obviously true disjunction.

A propositionalist might here protest that knowledge and wondering are different mental states or events, which always have different propositions as contents. They can add that while the superficial grammar of the sentences we use seem to indicate homogeneity in content and we can have something like ‘Little Suzy was wondering whether there is a greatest number, but she now knows that’, it is not clear that we should trust grammar and take a superficial feature of English to point toward a deep point about the identity of the content of the two attitudes.

Still, since it is so natural to say that you were wondering something and then came to know it, this move seems motivated only by a desire to save propositionalism, and no other justification comes to mind. Moreover, remember what the main appeal of propositionalism is, i.e. its elegance and simplicity: according to propositionalism, we can account for all our mental life in terms of propositions and we can then provide an elegant and simple account of various sentences and inferences. If propositionalists cannot account for these sentences and inferences in a simple and elegant way, or need to hold that we should not trust what these sentences seem to show us, propositionalism loses its main appeal.

A third way in which the propositionalist might try to insist that quantifiers can give us a propositional content for Little Suzy is the following. We relied on the idea that, if the content of Little Suzy’s wondering is the proposition *that there is a greatest number*, then she would also wonder whether there is a greatest number, because both would be cases of the same subject having the same attitude of wondering toward the same proposition *that there is a greatest number*. But a propositionalist

might try here to differentiate *wondering-what* with as content the proposition *that there is a greatest number* from the attitude of *wondering-whether* with as content the same proposition.

We already saw what the main problem with this suggestion is: What is this *wondering-what*, which is something distinct from *wondering-whether*? Again, even assuming that these distinctions trace real differences, things would have to be spelled out in great detail before somebody who is not already inclined toward propositionalism would be convinced.

There is a fourth way in which propositionalists could try to obtain a content for Little Suzy by exploiting quantifiers and working not on the content, but on the attitude. What is wondering? Wondering, a propositionalist might urge, is nothing but a desire to know and she might then try to find a propositional content for Little Suzy by dissecting the attitude of wondering and holding that to wonder is really to have a desire, where desires are themselves propositional attitudes. This analysis of wondering as a desire and of desires as propositional attitudes is controversial, but it does seem at first to help the propositionalist with Little Suzy. According to it, in wondering what the greatest number is, Little Suzy desires to know something. The propositionalist cannot say here that she desires to know what the greatest number is, because this would take us where we started. But by exploiting quantifiers again, something along the following lines seems to work as the propositional content of Suzy's attitude: *that it is true that there is a greatest number and I (Suzy) know its identity*. In this way, the propositionalist does indeed find a proposition for Little Suzy. Moreover, wondering what the greatest number is could be distinguished from wondering whether there is a greatest number, as the latter would be a desire that a different proposition be true: if Suzy were wondering whether there is a greatest number, she would be desiring *that it is true that I (Suzy) know which one of the following disjuncts is true: there is a greatest number or there is no greatest number*.

This propositionalist proposal has some virtues. But, besides relying on controversial analyses of wondering and desires, it also has problems, one due to the content of the piece of knowledge Little Suzy would desire to have, the other due to the idea that Little Suzy would desire to know something. Concerning the content of the piece of knowledge, the issue is again that on this account wondering whether there is a greatest number and knowing whether there is a greatest number seem to turn out to have different propositional contents: the former has as content the proposition *that it is true that I (Suzy) know which one of the following disjuncts is true: there is a greatest number or there is no greatest number*, while the latter presumably has as content something more intuitive and traditional, i.e. the proposition *that there is no greatest number*. As we saw above, the move of urging that knowledge and wondering always have different propositions as contents, seems motivated only by a desire to save propositionalism.

The second problem concerning the very idea that to wonder is to have a propositional desire to know seems even more serious. No matter what we take the piece of knowledge Suzy desires to have to be, if we defend propositionalism and then take wondering to be a desire to know, the desire itself should have a propositional content and then propositionalists are forced to hold that the 'to know' should be unpacked into something along the lines of *that I know ...* where 'I' stands for the

subject of the desire, in our case Little Suzy. Thus according to this proposal, in wondering what the greatest number is, Little Suzy has an attitude whose content has herself as part. This does not seem right: it does not seem that when we wonder about numbers, for example, we are part of the content of our attitude. Numbers are, properties of numbers are, but we are not. It seems indeed possible that Little Suzy is so immersed in her trying to understand maths that she has forgotten about herself. If she is wool-gathering in the realm of numbers, it is still possible that she is wondering what the greatest number is, but she is not desiring that she herself knows something. Maybe wondering is desiring, but wondering cannot be a propositional desire where the proposition has the subject of the desire as a part, as the propositionalist seems forced to maintain.

7 Gaps

There is another resource that propositionals can try to rely on, i.e. gaps and *gappy propositions*, i.e. structured entities parts of which are literally a gap (Kaplan, 1977: 496). A propositionalist can suggest that the content of Little Suzy's attitude is the gappy proposition representable via

<___, being the greatest number> ,

where '___' stands not for an object of any sort, but simply signals a position that would have to be filled but is in fact unfilled, so that the proposition is gappy, unfilled, or structurally challenged.

No matter what you think about gaps, crucially to our purposes, it does not seem that this proposal is genuinely a propositional option. Said differently, despite the names, *gappy propositions* are not propositions and then if they are not, this is not an option that can be taken to save the thesis that all our mental content is propositional.¹⁰ While no developed argument has been put forward to the conclusion that gappy propositions are propositions, various considerations and arguments have been put forward to the conclusion that they are not (Abbott, 2011; Mousavian, 2011: 131–141) and it is enough for us to see one of them, suggested by Seyed Mousavian:

(B1) If gappy propositions are propositions, completely gappy propositions are propositions.

(B2) Completely gappy propositions are propositional structures.

(B3) Propositional structures are not propositions.

Therefore,

¹⁰ It should be noted that the one raised in the text is not an objection to Millians about proper names who endorse gappy propositions. If defenders of Millianism do not endorse the thesis that mental content is all propositional, as they are free to do and as Hodgson has for example recently done (2018), they can hold on to Millianism while holding that some attitudes are not propositional in content.

(B4) Gappy propositions are not propositions. (2011: 136)

Mousavian goes into the details of showing the truth of each premise with different considerations and proofs by reductio. While this is his argument, not ours, so that we refer back to him for the sophisticated details (2011: 136–140), it is clear that the premises are intuitively correct: if it is true that a gap cannot make a difference to something being a proposition, nor can two gaps, and then something representable by

< __, __ >

should be a proposition, as in accordance with (B1). For (B2), we can simply quote this famous passage, in which Russell explains what logical form, or *propositional structure*, to use a more up-to-date terminology, is:

In every proposition and in every inference there is, besides the particular subject-matter concerned, a certain *form*, a way in which the constituents of the proposition or inference are put together ... If ... I take any one of these propositions and replace its constituents, one at a time, by other constituents, the form remains constant, but no constituent remains. Take (say) the series of propositions, “Socrates drank the hemlock,” “Coleridge drank the hemlock,” “Coleridge drank opium,” “Coleridge ate opium.” The form remains unchanged throughout this series, but all the constituents are altered. Thus form is not another constituent, but is the way the constituents are put together. (1914, 34)

Propositional structure is what is common to all the propositions expressed by sentences such as ‘John walks’, ‘John runs’, ‘Amia runs’, and what is common to these propositions if not

< __, __ > ,

i.e. if not the way the constituents are put together, the positions, which then different propositions fill in different ways, if they are not gappy, or leave unfilled, if they are gappy? Also for (B3), we can simply rely on a quotation, again from the Russellian tradition, but this time by Dorothy Wrinch:

A form is a very colourless thing indeed. It is a few blank spaces with a bare logical structure uniting them (1919: 324).

If this is what a form is, it is clear that it cannot be a proposition. Putting the three premises together, we can conclude that gappy propositions are not propositions, as in accordance with (B4). Maybe this and other arguments to the same conclusion that gappy propositions are not propositions can be resisted. But not only do they seem impeccable, it also seems that they do indeed point toward the intuitively correct conclusion. For example, propositions are primarily things that can be true or false, and while we can force gappy propositions to have a certain truth-value (Braun, 2005. See Everett, 2003 for issues), they do not seem intuitively to have one: what is, intuitively, the truth-value of the proposition representable via

< ____, being the greatest number >

? Thus, despite the name *gappy propositions* do not look like propositions, and moreover we do have arguments to the conclusion that they are not, and some of these arguments have nothing to do with truth and falsity, such as the one just sketched. It seems then wise to conclude that gappy propositions are not propositions. Now, if gappy propositions are not propositions, a defender of propositionalism, i.e. the view that all our mental content is propositional, cannot maintain that Little Suzy's attitude has a gappy proposition as content.

Since propositionalism is the view we are considering here, we do not need to consider gappy propositions any further, except to note the fact that both Little Suzy's wondering and your wondering what the capital of Peru is, can be accounted for homogeneously in terms of gappy propositions, as your wondering's content could obviously be taken to be

< ____, being the capital of Peru >. ¹¹

Thus if we abandon propositionalism and allow for example gappy propositions to be among our mental contents, not only can we find a content for Little Suzy, but we can account homogeneously for wonderings concerning questions that have no correct answers and concerning questions that do have correct answers. If, like the propositionalists, we aim at some homogeneity, but, differently from the propositionalists, we are happy with a plurality of mental contents, gappy propositions might indeed be the natural candidates for the relata for all our wonderings.

8 Conclusion

None of the options we saw seems to be really able to help propositionalists in their attempt to account for Little Suzy's wondering what the greatest number is: relativisation to possible worlds, Meinongian objects, disjunctions, sets, modes of presentation, the *de dicto/de re* distinction, quantifiers, desires and gaps each seems either to lead to a non-propositionalist account, or to raise challenging issues, or to make propositionalism lose its main appeal, i.e. its elegance and simplicity. Other more sophisticated propositionalist options might be available. But propositionalists would then need to considerably complicate their account, which would then not be elegant and simple any more. We cannot conclude that propositionalism is doomed. But if it can account for our Little Suzy at all, it can only do so by losing its main appeal, i.e. its elegance and simplicity. Little Suzy then makes it difficult to understand what the advantages of propositionalism would be with regard to its obvious alternative, an account according to which mental states, attitudes and events are not all homogeneously relations to propositions, but rather our mental life should be accounted for in terms of a plurality of kinds of relata, with objects like you and me,

¹¹ Thanks again to an anonymous referee for suggesting me to discuss the Lima case with respect to gappy propositions.

gappy propositions, facts, states of affairs, propositions and maybe still other kinds of objects as possible relata.

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