

Propositions are not Simple

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Some philosophers claim that propositions are *simple*—i.e., lack parts. In this paper, I will argue that this claim is mistaken. I will start with the widely accepted claim that propositions are the objects of beliefs. Then I will argue that the objects of beliefs have parts. Thus, I will conclude that propositions are not simple. My argument for the claim that the objects of beliefs have parts will derive from the fact that beliefs are *productive* and *systematic*. This fact, which I'll flesh out below, lurks in the background of debates about the metaphysics of propositions. But its import for these debates has yet to be fully appreciated. So here I'll bring the point to the fore, and thus make manifest a powerful argument against simple propositions.

Some philosophers claim that propositions are *simple*—i.e., lack parts. In this paper, I will argue that this claim is mistaken. I will start with the widely accepted claim that propositions are the objects of beliefs. Then I will argue that the objects of beliefs have parts. Thus, I will conclude that propositions are not simple.

My argument for the claim that the objects of beliefs have parts will derive from the fact that beliefs are *productive* and *systematic*. This fact, which I'll flesh out below, lurks in the background of debates about the metaphysics of propositions. But its import for these debates has yet to be fully appreciated.¹ So here I'll bring the point to the fore, and thus make manifest a powerful argument against simple propositions.

One advantage of my approach will be that it doesn't rely on any specific, controversial account of the nature of propositions or their parts. Most arguments against simple propositions do. That is, they rely on the merits of a specific account of the nature of propositions. And so they are vulnerable to attack based on objections to those specific accounts. But my argument avoids these vulnerabilities. It allows us to know that propositions have parts, even if we don't know what those parts are. So even if the going accounts of propositions' parts are dissatisfying, or ultimately fail, my argument nonetheless allows us to make progress. For it allows us to know that propositions have parts—that they are not simple.

¹ There are related topics, such as those having to do with the compositionality of meaning, that are front and center in debates about the metaphysics of propositions. But, as will become evident (see §2), my arguments do not require taking any stand on these controversial topics.

1. Propositions and Simplicity

Propositions are bearers of truth and falsity, can be expressed by declarative sentences, and are marked out by that-clauses. Examples include *that dogs bark*, *that pigs fly*, *that Lincoln was the 16th U.S. President*, *that it is raining*, and *that propositions are simple*. Each of these propositions is expressed by natural language sentences such as ‘Dogs bark’ or ‘Pigs fly’. Any given proposition may be expressed by more than one sentence. For example, ‘It is raining’, ‘Es regnet’, and ‘Esta lloviendo’ all express the proposition *that it is raining*.

Some philosophers claim that propositions are abstract, or are the meanings of sentences, or exist necessarily, or essentially represent things as being a certain way, or are the *fundamental* bearers of truth and falsity, or any number of other things. But these matters are controversial, and I’ll take no stand on them here.

Propositions play important theoretical roles in various domains, such as semantics and modality. One such role that is of special importance given my concerns is this: *Propositions are the objects of beliefs*. So, for example, my belief that dogs bark has as its object the proposition *that dogs bark*. And my belief is true if and only if *that dogs bark* is true. A parallel story can be told for any belief. This view about propositions is standard, and all of my opponents (who I know of) in the debate over the simplicity of propositions accept it (see, e.g., Merricks, 2015, p. 26; Bealer, 1998, p. 1; Plantinga, 1976, p. 144). So I will assume it in what follows.

Now, the claim that I will argue against is this:

SIMPLICITY: Necessarily, all propositions are simple.

A proposition is simple if and only if it *lacks parts*. So SIMPLICITY implies that, necessarily, all propositions lack parts. That includes propositions like *that snow is white*, *that snow is white and dogs bark*, and *that Clinton will win the election, or Trump will win and we are doomed*. According to SIMPLICITY, all of these propositions lack parts. So *that snow is white and dogs bark* does not have the propositions *that snow is white* or *that dogs bark* as parts, nor does it have the concepts *snow*, *whiteness*, *dogs*, or *barking* as parts. Nor does it have as parts possible worlds (Lewis, 1986; Stalnaker, 1976), objects and/or properties (Russell, 1903; Soames 2008; Salmon, 1986; King, 2007), or senses (Evans, 1982; McDowell, 1994; Stanley, 2011). Various philosophers defend various claims about what propositions’ parts are.² If SIMPLICITY is true, these claims are all false. For, if SIMPLICITY is true, propositions have no parts.

Defenders of SIMPLICITY include Trenton Merricks (2015), George Bealer (1998), and Alvin Plantinga (1974). And, as these authors point out, SIMPLICITY has virtues. One such virtue is that it avoids certain notorious difficulties having to do with the *unity of the proposition*—that is, with explaining how the parts of a proposition bind together into a single entity (i.e., a proposition). This issue has vexed many (see Gaskin, 2008). But, on SIMPLICITY, propositions don’t have parts. So they aren’t bound together. So a believer in SIMPLICITY does not face any difficulties having to do with the unity of propositions. Another virtue of SIMPLICITY is that it avoids certain objections, raised by Merricks (2015, Ch. 4), having to do with how propositions represent things. Merricks argues that

² I am using ‘part’ broadly to include all of the above entities as well as any other entity that features in an account whereby propositions are complex or have constituent structure. Defenders of SIMPLICITY reject all such views.

propositions represent things as being a certain way, but that they do not—indeed, cannot—do so in virtue of how their parts (and the relations between their parts) represent. Merricks' own view is that propositions *primitively* represent things as being a certain way. But he argues that defenders of complex propositions cannot avail themselves of this option, because doing so would yield an “absolutely unacceptable” coincidence—namely, that any given proposition just happens to have parts that are intuitively correlated with how it primitively represents things as being (p. 204). These difficulties do not arise if one accepts SIMPLICITY (and that propositions primitively represent). Thus, SIMPLICITY allows one to sidestep the above worries about how propositions represent.

So SIMPLICITY has its virtues. But, alas, it is false. So although SIMPLICITY promises certain benefits, they are benefits that we'll have to do without. That's one upshot of my argument against SIMPLICITY, to which I now turn.

2. Productivity and Systematicity

Recall that propositions are the objects of beliefs. This claim is standard, and all of my opponents (who I know of) accept it. So I've assumed it.

Now consider two further features of beliefs. First, beliefs are *productive*. That is, beliefs are such that we are capable of entertaining indefinitely many of them (cf., Fodor, 1998, p. 26; Prinz, 2002, p. 294; Peacocke, 1992, p. 41–46; Aizawa, 2003, Ch. 3). Anyone with a normal conceptual repertoire who can entertain the belief that Sarah is kind is thereby also capable of entertaining the belief that Sarah is *very* kind. Anyone who can entertain the belief that falcons fly can also entertain the beliefs that geese fly, that mosquitos fly, that pigs fly, that houses fly, and so on. We can also entertain new and outlandish beliefs with new contents, such as that Martians wear ugly Christmas sweaters. Again, we are, at least in principle, capable of entertaining indefinitely many beliefs with varying propositional contents. In this way, beliefs are productive.³

Second, beliefs are *systematic*. That is, beliefs are such that our ability to entertain a belief with one propositional content is intrinsically connected to our ability to entertain other beliefs with other propositional contents, so that our ability to entertain the one automatically implies that we can entertain the others (cf., Fodor, 1998, p. 26; Prinz, 2002, p. 294; Camp, 2007, p. 146). For example, if I can entertain the belief that John loves Suzy, then I can entertain the belief that Suzy loves John. Or if I can entertain the belief that the blanket is on top of me, then I can entertain the belief that I am on top of the blanket. In this way, beliefs are systematic.

That beliefs are productive and systematic is, in its essentials, uncontroversial.⁴ Some reject versions of productivity that claim that we can entertain *boundless* or *infinitely many* beliefs (e.g., Ziff, 1974). And some use productivity and systematicity as premises in arguments for controversial conclusions (e.g., Fodor and Pylyshyn, 1988; Pagin,

³ Here and throughout I have chosen to use the (now standard) phrase, ‘beliefs are productive’ rather than, for example, ‘our cognitive capacities with respect to beliefs are productive’. This may sound strange—as if beliefs are *doing* something, like reproducing themselves. Just keep in mind that what I (and others) mean by ‘beliefs are productive’ is exactly what I describe above. A parallel point applies below to ‘beliefs are systematic’.

⁴ See, for example, Chomsky (1968, 1986), Fodor (1987, Appendix), Fodor and Pylyshyn (1988), Peacocke (1992, p. 41–42), Frege (1963), Prinz (2002, Ch. 11), Camp (2007), Carey (2009, p. 494), and Aizawa (2003).

2003). But everyone accepts that we can entertain and form very many new beliefs in the way described above. Indeed, I take productivity and systematicity (in some form) to be undeniable empirical facts about beliefs and our abilities to entertain and form them.

But in order for beliefs to be productive and systematic, their objects—i.e., propositions—must be complex. For beliefs’ productivity and systematicity is explained (at least in part) by our ability to combine and recombine the *parts* of our beliefs’ propositional objects into different propositions that serve as the objects of different beliefs (I take these parts to be *concepts*, but it doesn’t matter what they are for my purposes here). If I can believe that Sarah is very kind, I can thereby believe that Sarah is kind, or that Sarah is very very kind. Why? Because I can add to or subtract from the parts of the proposition *that Sarah is very kind* and then believe the resultant proposition. If I can entertain the belief that John loves Suzy, then I can thereby entertain the belief that Suzy loves John. Why? Because I can recombine the parts of the proposition *that John loves Suzy* into the proposition *that Suzy loves John*. All of this requires that the objects of my beliefs have parts. Thus, the explanation for the productivity and systematicity of beliefs entails that the objects of belief—i.e., propositions—have parts.

Part of what’s being explained here is the fact that, for creatures like us, the ability to entertain one belief *comes with* the ability to entertain other beliefs. If I can entertain one belief, I can entertain many—no *extra* abilities are required. This is precisely what I mean when I say that anyone who can entertain the belief that John loves Suzy can “thereby” or “automatically” entertain the belief that Suzy loves John. This is part of the datum to be explained—it’s part of what it means to say that beliefs are productive and systematic. But now how the above explanation captures this datum is by saying that it’s our ability to grasp the parts of beliefs’ objects, and apply rules of combination on those parts, that enables us to entertain indefinitely many beliefs with distinct propositional objects.⁵ So the abilities in question are (i) the ability to grasp (or understand) the parts of beliefs’ objects, and (ii) the ability to combine and recombine those parts in accordance with rules of combination. If I can do this for one belief, I can do it for many. But, again, this explanation requires that the objects of beliefs—i.e., propositions—have parts.

Here’s an analogy. Suppose I’ve got a bunch of ordinary Legos put together in some particular way. I can take apart and recombine those Legos and thereby make new constructions. On the other hand, if those Legos were fused together such that they couldn’t be broken up into parts, then I wouldn’t be able to make new and different constructions with those Legos. Sure, I could get more Legos. But by having those original Legos fused in their original shape, I wouldn’t *thereby* have the ability to make other constructions. This is analogous to the systematicity of beliefs.⁶ If I believe that John loves Suzy, I am *thereby* capable of believing that Suzy loves John. I don’t need any extra abilities, or

⁵ That’s not to say that this is the *only* way for us to entertain or form new beliefs. After all, I can entertain and form new beliefs via *perception* or *logical inference*, for example. But our possession of these latter capacities does not explain the productivity and systematicity of beliefs. For example, when I transition from entertaining the belief that John loves Suzy to entertaining the belief that Suzy loves John, it needn’t be (and likely isn’t) because I *perceive* Suzy loving John or because I *infer* that Suzy loves John. So the point here is just that what really explains the productivity and systematicity of beliefs is our ability to grasp the parts of beliefs’ objects and apply rules of combination to those parts.

⁶ A Lego analogy to the productivity of beliefs would be a bit different. There the idea would be that each of a person’s concepts corresponds to a kind of Lego that she can use (and duplicate, if she wants) in various ways consistent with rules about how Legos can be put together to build new constructions. In what follows, I will stick with the analogy to systematicity, because it is a little less complicated.

any more raw materials, so to speak. But this is only possible if the object of my belief can be broken up into parts and recombined into another object. Hence, the fact that beliefs are systematic requires that their objects—i.e., propositions—have parts.

Now that's just an *analogy*. We must be cautious with building analogies and metaphors, which are ubiquitous in the literature on productivity and systematicity. Beliefs' objects aren't strewn about construction sites or play rooms. They aren't *literally* bits of plastic that we snap together and apart. Yet, what this metaphor *is* helpful in conveying, and what is essential to the above explanation, is this: We can form many new beliefs, each with its own distinct object, by performing certain mental operations on those objects' parts; specifically, we can in some literal sense *combine* and *recombine* those objects' parts, and thereby entertain indefinitely many new beliefs.⁷ How the metaphysical details of this explanation are spelled out will depend on your view of the nature of beliefs' objects; that is, it will depend on what you think propositions and their parts *are*. For example, if you think propositions are made up of concepts, then you're bound to flesh out the metaphysics somewhat differently than if you think propositions are made up of mind-independent objects or properties. I've promised to remain neutral on these disputes. For my aim is to show that propositions have parts, even if we don't know what those parts are. So here's the upshot: While we must be careful with the building metaphors, what really is essential to the above explanation is that beliefs' objects have combinatorial structure, and thus, have parts of some sort.

In a bit I will consider some potential alternative explanations for beliefs' productivity and systematicity. But right now I just want to emphasize that, not only is the above explanation obvious, natural, intuitively compelling, etc., the crux of that explanation—specifically, the appeal to parts—is, and has always been, absolutely standard in the literature on this topic.⁸ Here is just a small sample. First, Gottlob Frege (1963), who uses 'thought' to refer to the propositional objects of attitudes (such as beliefs), appeals to propositions' parts to explain, not just the productivity of attitudes, but also the productivity of language:

It is astonishing what language can do. With a few syllables it can express an incalculable number of thoughts, so that even a thought grasped by a human being for the very first time can be put into a form of words which will be understood by someone to whom the thought is entirely new. This would be impossible, were we not able to distinguish parts in the thought corresponding to the parts of the sentence, so that the structure of the sentence serves as an image of the structure of the thought (p. 1).

Now Christopher Peacocke (1992), who also uses 'thought' to refer to the propositional objects of attitudes:

⁷ Talk of "combination", "recombination", "combinatorial structure", etc., is standard literal terminology in the literature on this topic. See, for example, Peacocke (1992, p. 41–42), Fodor and Lepore (1992, p. 147), Carey (2009, p. 489–492), Chomsky (1968, p. 177–178), Prinz (2002, p. 12), Frege (1963, p. 1), and Camp (2007).

⁸ Here I am not claiming that there are no controversies surrounding productivity and systematicity having to do with how to explain and understand them, or having to do with what all they entail (especially about our cognitive architecture). There certainly are such controversies, which I'll say more about below. Here I am just saying that certain aspects of the explanation for these phenomena—such as that they are explained (at least in part) through appeal to the parts and relations between parts of the objects of attitudes—is standard in the literature.

The concepts that feature in a given set of thoughts can be recombined to form new thoughts. This recombining is about as general a phenomenon as one can hope to find in the realm of conceptual content. Any theory of conceptual content that aspires to generality must explain the phenomenon (p. 41).⁹

And Jerry Fodor (1987):

There is a (potentially) infinite set of—for example—belief-state types, each with its distinctive intentional object and its distinctive causal role. This is immediately explicable on the assumption that belief states have combinatorial structure; that they are somehow built up out of elements and that the intentional object and causal role of each such state depends on what elements it contains and how they are put together (p. 147).¹⁰

And Jesse Prinz (2002), who, again, uses ‘thought’ to refer to the propositional objects of attitudes:

There appears to be no upper limit on the number of distinct beliefs we can entertain . . . Every day we entertain a breathtaking number of novel thoughts . . . This hyperfertility is achieved using finite means. As finite beings, we have finite minds. Finite minds can only store a limited stock of concepts. Myriad thoughts must somehow be derivable from that limited stock. There is a highly plausible explanation of this. A finite set of concepts can engender a boundless capacity for unique thoughts if those thoughts are derivable by combining concepts compositionally. Concepts are compositional just in case compound concepts (and thoughts) are formed as a function of their constituent concepts together with rules of combination (p. 12; see also Ch. 11).¹¹

These and other authors differ on some of the details—e.g., on what propositions’ parts consist in, or on what productivity and systematicity entail. But they all agree on the *parts* part; that is, they all agree that the productivity and systematicity of beliefs is explained (at least in part) by our ability to combine and recombine the parts of their objects. Again, this is absolutely standard in the literature on this topic.

So, with that, here is my argument against SIMPLICITY:

- (1) Beliefs are productive and systematic.
- (2) If beliefs are productive and systematic, then the objects of beliefs are complex.
- (3) Therefore, the objects of beliefs are complex (1, 2).

⁹ Peacocke (1992) later adds, “The recombining of concepts to form new thoughts has been largely unquestioned in the published literature” (p. 42).

¹⁰ Here Fodor (1987) not only claims that the “intentional object” of beliefs (i.e., propositions) have combinatorial structure; he also claims that belief states *themselves* have such structure (which is a further, more controversial view that he also endorses). As I will emphasize below, this latter claim is one that I will neither rely on nor engage with in this paper. My claim is just that the *objects* of beliefs—i.e., propositions—have combinatorial structure, and thus, have parts.

¹¹ Prinz (2002) goes on, “For example, a compositional system allows one to form the thought that aardvarks are nocturnal by combining one’s aardvark concept with one’s nocturnal concept using the very same combination rule used for forming other thoughts, such as the thought that cows are herbivorous, or that politicians are egomaniacal. Likewise, the very same concepts, aardvark and nocturnal, can be used to form other thoughts in a compositional system, e.g., the thought that aardvarks eat insects and bats are nocturnal. The same rules and the same stock of primitives can be used to form different combinations” (p. 12).

- (4) Propositions are the objects of beliefs.
- (5) Therefore, propositions are complex (3, 4).
- (6) Therefore, SIMPLICITY is false (5).

This argument is valid. (3) and (5) follow from other premises. So defenders of SIMPLICITY must deny (1), (2), or (4). All defenders of SIMPLICITY (who I know of) accept (4), and for good reason. They could deny (1), but to do so would be to deny very basic empirical facts about beliefs. So the best bet for defenders of SIMPLICITY is to deny (2)—that is, to deny the inference from beliefs being productive and systematic to their objects being complex. This would require rejecting the standard explanation of beliefs' productivity and systematicity, which I provided above, and replacing it with an alternative explanation.

How might that go? I will consider various options in a moment. But before I do, I want to flag two debates that sometimes involve discussions of productivity and systematicity, and that may therefore seem to inject (2) or other of my premises with some controversy, but that, in fact, have no bearing whatsoever on my argument. The first is between those who accept, and those who deny, the claim that the meaning of a proposition, sentence, or belief is determined by the meanings of its parts together with how those parts are related.¹² I have not made any claim about how the meaning of anything is determined, and my argument does not depend on any such claim. So-called 'meaning holists', who deny the above claim, can (and should) accept that propositions have parts. They only need to deny that the meanings of those parts (and their relations) alone determine the meanings of the propositions. The second debate I have in mind is between Classical and Connectionist models of cognition. Fodor and Pylyshyn (1988), for example, appeal to productivity and systematicity to argue (against Connectionism) that mental states have a syntactic structure and thus constitute a mental language (this is called 'the language of thought hypothesis'). But this debate is not about whether propositions have parts. As Fodor (1987) puts it,

Everyone [in the debate about the structure of cognition] thinks that the intentional objects of mental states are characteristically complex—in effect, that propositions have parts . . . What's at issue, however, is the internal structure of these functionally individuated states. Aunty thinks they have none; only the intentional objects of mental states are complex. I think they constitute a language; roughly, the syntactic structure of mental states mirrors the semantic relations among their intentional objects (p. 138).

Hence, the debate about the structure of cognition has no bearing on my argument. So there is no refuge here for defenders of SIMPLICITY. In this paper, I do not assert, rely on, or even engage with Fodor's claim that mental states *themselves* have internal structure. I

¹² For an overview of this debate, see Fodor and Lepore (1992, Ch. 1) or Jackman (2014), and for an example of an argument against SIMPLICITY based on these sorts of considerations, see Pagin (2003). Merricks (2015, p. 130–133) and Keller and Keller (2013) consider and reject arguments against SIMPLICITY that appeal to these issues about meaning and compositionality. Specifically, they challenge the inference from the claim that the meanings of natural language sentences are compositional—that is, determined by the meanings of their parts and how their parts are arranged—to the claim that propositions have parts. But my argument does not rely on (or in any way deal with) that inference. And, more generally, my arguments are neutral on how exactly sentences and propositions get their meanings. So Merricks' (2015) and Keller and Keller's (2013) criticisms do not apply to my argument.

only claim (along with both sides of the above debate) that the intentional *objects* of beliefs—i.e., propositions—have parts.

Now back to (2). How might a defender of SIMPLICITY resist the inference from beliefs being productive and systematic to their objects being complex? I will consider four strategies for resisting (2), and show that each fails. In doing so, I aim to leave defenders of SIMPLICITY without a leg to stand on, and to illustrate why (2) is not to be denied.

The first strategy is to explain the productivity and systematicity of beliefs through appeal to *natural language*. Here's the idea. Propositions can be expressed by sentences. For example, *that Sarah is kind* is expressed by the sentence 'Sarah is kind'. Sentences have parts (i.e., words), and natural language is both productive and systematic. One might make use of these facts to explain why beliefs are productive and systematic. For example, one might say that we know 'Sarah is kind' expresses the proposition *that Sarah is kind* (set aside *how* we know this). So when we entertain the belief that Sarah is kind, we know how to express—or think about expressing—the object of that belief in natural language. So we can consider the sentence 'Sarah is kind'; then, since sentences are productive and systematic, we can add a word to our sentence and get 'Sarah is very kind'. Then, since we also know that 'Sarah is very kind' expresses the proposition *that Sarah is very kind* (again, set aside *how* we know), we can entertain a belief with that proposition as its object. A defender of SIMPLICITY might say that this explains why beliefs are productive and systematic. This strategy—which I will call the 'linguistic strategy'—is one way to resist (2).

I have five objections to the linguistic strategy. First, it gets the order of explanation wrong. The reason I can entertain the belief that Sarah is very kind is not because I can first construct the sentence 'Sarah is kind' or 'Sarah is very kind'. Rather, I can construct, consider, and say 'Sarah is very kind' because I can think and believe that Sarah is very kind. In general, I put my thoughts into words; I don't put my words into thoughts.¹³

Second, whether or not the linguistic strategy gets the order of explanation wrong, it's at least true that we don't *need* to express—or consider expressing—propositions in natural language in order to entertain new beliefs. If I believe that Sarah is kind, I don't need to first consider the sentence 'Sarah is kind' or 'Sarah is very kind' in order to entertain the belief that Sarah is very kind. So productivity and systematicity concern abilities that we have and can exercise without that appeal to natural language. Thus, an essential component of the linguistic strategy is in fact unnecessary for productivity and systematicity.

Third, the linguistic strategy doesn't actually explain the productivity and systematicity of beliefs. Productivity implies that anyone who can entertain the belief that Sarah is very kind can *thereby* entertain the belief that she is kind. Systematicity implies that anyone who can entertain the belief that John loves Suzy can *thereby* entertain the belief that Suzy loves John. But none of this is the case—at least not obviously—on the linguistic strategy. On this strategy, the ability to entertain one belief does not *thereby* (or *automatically*) enable or imply that one is able to entertain other beliefs. An extra ability involving natural language is required. Considering the Lego analogy, systematicity as it is standardly explained is analogous to a case in which I have Legos w, x, y, and z, and can thereby build various constructions by assembling those parts in various different

¹³ Here I am not suggesting that a basic linguistic competence is not a necessary condition for belief. Rather, I am suggesting that, given that we each have a basic linguistic competence, we do not in general consider natural language sentences before forming and entertaining new beliefs.

ways. But on the linguistic strategy, systematicity is more like a case in which I have a single partless construction (a simple proposition) that I somehow associate with parts of another kind of thing (natural language) in order to pick out other partless constructions. But notice that, on this picture, having the first construction does not, by itself, give me the means to build anything else. Likewise, on the linguistic strategy, that one can entertain one belief does not automatically imply that one can entertain other beliefs. So this strategy does not explain the productivity and systematicity of beliefs.

A defender of the linguistic strategy might respond to this objection by saying that even the standard explanation of productivity and systematicity implicates an extra ability in transitioning from one belief to another—namely, the ability to combine and recombine propositions' parts. But that's not right. On the standard explanation of productivity and systematicity, this ability is *already implicated* in the ability to entertain the first belief. On that explanation, in order to entertain the belief that John loves Suzy, I already have to have the abilities needed to entertain the belief that Suzy loves John—i.e., the abilities to grasp the proposition's parts and apply rules of combination to those parts. So no *extra* ability is required to entertain the belief that Suzy loves John. In contrast, on the linguistic strategy, an extra ability to associate our beliefs with natural language sentences is required. So it doesn't explain how the ability to entertain one belief *thereby* implies that one can entertain other beliefs. So, again, it doesn't explain the productivity or systematicity of beliefs.

Fourth, the linguistic strategy is in tension with the claim that propositions are the objects of beliefs. If beliefs are productive and systematic only because of how they are related to sentences, which are productive and systematic, then it would seem that sentences, not propositions, are the entities better theoretically suited to play the role of objects of beliefs. And if reference to sentences, not propositions, is what explains beliefs' productivity and systematicity, then it is *simpler* to just say that sentences, not propositions, are the objects of beliefs. Thus, the linguistic strategy is in tension with the claim that propositions are the objects of beliefs.

My fifth objection is brought to mind by the linguistic strategy, but it actually takes the form of an additional argument—an argument by analogy—against SIMPLICITY. It's this: Natural language is productive and systematic. If I can understand one sentence, for example, then I can understand many others. And sentences have parts. Indeed, natural language is productive and systematic in part *because* its expressions (e.g., sentences) have parts. Beliefs are also productive and systematic. If I can believe one proposition, then I can believe many others (or if I can entertain one belief with one propositional object, then I can entertain many other beliefs with other propositional objects). On this point, propositions behave just like sentences. Thus, by analogy, we have reason to conclude that propositions, like sentences, have parts.

Thus, not only does the linguistic strategy fail; in fact, it brings to mind an additional reason to reject SIMPLICITY.

The second strategy for resisting (2) appeals to the *reference* of propositions. Thus, I will call it 'the reference strategy'. Here's the idea. When I entertain the belief that John loves Suzy, for example, I know that the object of my belief—i.e., the proposition *that John loves Suzy*—represents and refers to certain entities: John, Suzy, and loving (again, set aside how I know this). So I can, by attending to what this proposition refers to, consider John, Suzy, and loving. And I can grasp *what* these things *are* and *what it is* for John to bear the loving relation to Suzy. And so I can see that, given what John and

Suzy are, and given what bearing the loving relation is, Suzy could also bear the loving relation to John. So then I can consider the proposition *that Suzy loves John*, and entertain a belief with that proposition as its object. A defender of SIMPLICITY might say that this explains why beliefs are productive and systematic. And this explanation does not require that propositions are complex. So it is a potential way to resist (2).

The reference strategy may avoid my first objection to the linguistic strategy about order of explanation. For it's plausible that we can and often do entertain and form beliefs by first attending to the way the world is. But the reference strategy falls victim to two of my other objections to the linguistic strategy, as well as to a new objection. First, even granting that we often entertain beliefs by first attending to the world, it's not at all obvious that we *need* to do this. If I entertain the belief that John loves Suzy, it's not at all obvious that I *need* to think any more about John, Suzy, or love in order to *merely entertain* the new belief that Suzy loves John. For example, if I am focused on the nature of propositions, and am thinking, not about whether my friends love each other, but about my ability to entertain new beliefs, I may entertain the belief that Suzy loves John in the abstract, without thinking any more about John, Suzy, and love. In the background I know who John and Suzy are, and what love is, but I don't need to think any more about these things in order to *merely entertain* the new belief. Or suppose I'm mulling over the logic of non-symmetric relations. I may note that John's loving Suzy doesn't imply that Suzy loves John, and in the process entertain the belief that Suzy loves John without thinking any more about my friends. These circumstances may be a little unusual. But, regardless, the point is that productivity and systematicity concern abilities that we have and can exercise without attending to the world. So, as with the linguistic strategy, an essential component of the reference strategy is in fact unnecessary for productivity and systematicity.

Second, like the linguistic strategy, the reference strategy fails to explain beliefs' productivity and systematicity. A defender of the reference strategy might maintain that in order to understand a given proposition one must grasp what it refers to. So she might maintain that if I can entertain the belief that Sarah is kind, I can thereby consider Sarah and kindness. But this doesn't yield the result that I can thereby entertain *other beliefs* about Sarah or kindness. An extra ability is still required. I've still got to be able to consider and reason about the way the world is *and then use that reasoning to form new beliefs*. With the Lego analogy, systematicity on the reference strategy is like a case in which I have a single partless construction that I know represents something that I can consider in picking out other, partless constructions. But having that first construction, by itself, does not give me the means to build anything else. Hence, on the reference strategy, that one can entertain or form one belief does not automatically imply that one can entertain or form other beliefs. So this strategy does not explain the productivity or systematicity of beliefs.¹⁴

¹⁴ A defender of the reference strategy might respond that, in order to entertain any beliefs at all, one must be able to reason about the world in a way that would allow one to form new beliefs about the world. But even if it's true that all believers can reason about the world so as to entertain *some* new beliefs, this by itself is insufficient to explain *how many* new beliefs we can form given productivity and systematicity. My being able to reason about the world and entertain the belief that falcons fly may imply that I am able to also entertain the belief that geese fly, that eagles fly, or perhaps even that pigs fly. But my reasoning about the world would not—at least not obviously—thereby put me in a position to entertain the belief that houses fly or that solar systems fly.

The reference strategy also falls prey to a further objection: It cannot explain our ability to entertain new beliefs about *non-existent* things. If I can entertain the belief that Sarah is kind, and I have the concept *ghost*, I can entertain the belief that ghosts are kind. But no amount of attending to *the way the world is* will get me to this belief. For ghosts don't exist. One might amend the reference strategy so that productivity and systematicity are explained by our attending to the way the world is *or could be*. But this amended version of the strategy still can't explain how I can entertain new beliefs about *impossible* things. If I can entertain the belief that Sarah is kind, and I have the concepts *ghost* and *necessary existence*, then I can entertain the belief that necessarily existing ghosts are kind. But no amount of attending to the way the world is or could be will get me to this belief. For necessarily existing ghosts are impossible (if they were possible, they'd exist; but they don't, so they aren't). Thus, the reference strategy fails to explain the full range of new beliefs that I can entertain, given beliefs' productivity and systematicity.

Thus, for these reasons, the reference strategy fails.

A third strategy for resisting (2) is to say that the productivity and systematicity of beliefs is explained by some kind of *conceptual analysis*. I'll call this 'the concept strategy'. The idea is that we analyze the objects of our beliefs (or perhaps entities related to the objects of our beliefs¹⁵) into conceptual elements that we then combine in ways that correspond to other propositions, thereby allowing us to entertain new beliefs with those propositions as objects. So if I believe that John loves Suzy, I can analyze the proposition *that John loves Suzy* into the concepts *John*, *Suzy*, and *love*, then combine those concepts in a way that corresponds to the proposition *that Suzy loves John*. Then I can entertain the belief that Suzy loves John. Now, this does not involve analyzing the objects of our beliefs into *literal* parts. That would be inconsistent with SIMPLICITY. So, on the concept strategy, the way we "carve up" propositions doesn't correspond to any actual joints in nature, so to speak. The carving is at least somewhat arbitrary—it is a mental operation that does a certain job for us, but doesn't mirror the way propositions really are. That way the concept strategy allows one to resist (2), since it doesn't imply that propositions have parts.

This strategy avoids the first two of my above objections—the "order of explanation" and the "don't need to" objections. I grant that we rely on conceptual operations to entertain and form new beliefs, and indeed I grant that we *need* to.¹⁶ However, the concept strategy still falls prey to two of my other objections, as well as to another, new objection. First, the concept strategy fails to explain how beliefs are productive and systematic. Even granting that we rely on various conceptual operations to entertain and form new beliefs, the concept strategy still posits an extra ability: We must be able to somehow

¹⁵ This is how one might go if one thinks that propositions are believed under *guises* (see, e.g., Merricks, 2015, p. 44; Salmon, 1986, p. 109) and wants to exploit this to resist (2). That is, one might say that guises—ways propositions "appear" to us when we believe or entertain them—can be broken up into conceptual elements and then recombined into other guises for other propositions. (Alternatively, one might say that propositions' guises are *sentences*, in which case the linguistic strategy would be the better fit for believers in guises.) At any rate, my objections to the concept strategy (or linguistic strategy) are unaffected by an appeal to guises.

¹⁶ Though arguably we don't need to in the way suggested by the concept strategy. That is, we don't need to combine concepts *and then* associate those concepts with a simple proposition. But this gets to my next objection.

move from entertaining a collection of concepts combined in a certain way to entertaining a simple proposition that is suitably related to those concepts. This move may be an inference, association, or some other mental operation. But, regardless of the details, this picture conflicts with the idea that in entertaining certain beliefs we are *thereby* (or *automatically*) able to entertain other beliefs. Hence, on the concept strategy, that one can entertain one belief does not automatically imply that one can entertain other beliefs. So this strategy does not explain how beliefs are productive or systematic.¹⁷

As for whether the concept strategy is in tension with the claim that propositions are the objects of beliefs: I don't think the claim that we combine and recombine concepts to form new objects of beliefs is at all in tension with the claim that propositions are the objects of beliefs. But that's because I think concepts are propositions' *parts*. So I believe that the productivity and systematicity of beliefs is explained in part by our conceptual operations on propositions. But this explanation is not available to any defender of SIMPLICITY, including a defender of the concept strategy. Indeed, for the defender of SIMPLICITY, the concept strategy *is* in tension with the claim that propositions are the objects of beliefs. If beliefs are productive and systematic only because of how they are related to concepts that can be productively and systematically combined, then it seems that concepts or combinations of concepts, not (simple) propositions, are the entities better theoretically suited to play the role of objects of beliefs. And if reference to concepts, not (simple) propositions, is what explains beliefs' productivity and systematicity, then the *simpler* theory is that combinations of concepts, not propositions, are the objects of beliefs. So the concept strategy, as deployed by a defender of SIMPLICITY, is in tension with the claim that propositions are the objects of beliefs.

I also have a further objection to the concept strategy. It's that it yields some striking—some might say *absolutely unacceptable*—coincidences. For example, it yields the coincidence that the concepts we regularly derive from a given proposition just so happen to reliably correspond to its apparent (but non-existent) parts. I assume that the concepts

¹⁷ A defender of the concept strategy might reply that if one can entertain the belief that John loves Suzy, then no *extra* ability is required to entertain the belief that Suzy loves John, because the act of associating combinations of concepts with a simple proposition (as opposed to just *having* the concepts) is *already required* for entertaining the first belief (or any belief at all). This reply has several problems. First, it's simply not plausible that every time we entertain a new belief we perform an act of association. Sometimes, at least, we just entertain the belief directly. Second, given that combinations of concepts can be deployed to represent things, this reply seems to obviate the need to *also* posit simple propositions as objects of beliefs. Third, it's not clear that an ability to associate one combination of concepts with a simple proposition really would yield an ability to associate other combinations of concepts with other simple propositions. This ability would have to be very *general*—that is, applicable in many cases. But nothing seems to fit this bill, given SIMPLICITY. Defenders of the concept strategy can't appeal to our general ability to use *rules of combination*. For, on SIMPLICITY, propositions are not combinations. They also can't appeal to a general ability to associate concepts with propositions in virtue of our grasping what they are *about*. Even setting aside worries having to do with the reference strategy (which I'll return to later), consider this: The proposition that *John loves Suzy* is about the same things as the concepts *John*, *Suzy*, and *love*; but so is the proposition that *Suzy loves John*. So concepts being about the same things as a proposition does not guarantee that one can associate those concepts with just *that* particular proposition. One might respond that these concepts must be *suitably arranged* to be about the same thing as a unique proposition. But if we must arrange concepts so as to represent things—in what appears to be the exact same way as propositions represent things—then, again, there really is no need to *also* posit simple propositions here. To avoid this, it seems the defender of the concept strategy must say we are able to recognize brute connections between concepts and uniquely corresponding propositions. But then the ability to associate one combination of concepts with one simple proposition would not guarantee that one is able to associate other combinations of concepts with other simple propositions.

we derive from the proposition *that John loves Suzy* are none other than: *John*, *Suzy*, and *love*.¹⁸ But why? Why do we “carve up” *that John loves Suzy* into *John*, *Suzy*, and *love* instead of other concepts? This would make sense if *John*, *Suzy*, and *love* were parts of the proposition *that John loves Suzy*. But the concept strategy says this isn’t so. It says the way we conceptually “carve up” propositions is at least somewhat arbitrary and does not reflect the way propositions really are. So then, again, why do the concepts we regularly derive from propositions just so happen to reliably correspond to their apparent (but non-existent) parts? This is a striking coincidence. Another coincidence on the concept strategy—one that is especially salient here—is that the concepts we regularly derive from a given proposition not only reliably correspond to its apparent (but non-existent) parts; they also reliably correspond to what appear to be different combinations of those apparent (but non-existent) parts in other propositions. How do I go from entertaining the belief that John loves Suzy to entertaining the belief that Suzy loves John? On the concept strategy, I derive *John*, *Suzy*, and *love* from *that John loves Suzy*; then I recombine those concepts in a way that allows me to consider *that Suzy loves John*. But I don’t do this by recombining the proposition’s parts. I just do it. What a striking coincidence! In fact, I’d say it’s an absolutely unacceptable coincidence.

A defender of the concept strategy might respond to this objection by saying that it’s no coincidence that I associate the concepts *John*, *Suzy*, and *love* with the proposition *that John loves Suzy*, because those concepts and that proposition *refer* to, or are *about*, the same things—namely, John, Suzy, and love. This response, which effectively invokes a reference-concept hybrid strategy, relieves the above appearance of coincidence by pointing to an ability to recognize which concepts and (simple) propositions share common referents. The first thing to point out about this hybrid strategy is that it opens up the defender of the concept strategy to all of the problems associated with the reference strategy. Yes, we often entertain and form new beliefs by thinking about the world. But it’s not at all obvious that we *need* to. Plausibly I can transition from entertaining the belief that John loves Suzy to entertaining the belief that Suzy loves John without thinking any more about the world or what the concepts and propositions in question refer to. There’s also the problem of thinking about things that don’t/couldn’t exist, and the point about which view of beliefs’ objects is simpler. And there’s another problem. This hybrid strategy posits yet *another* superfluous step—it requires us to have yet another extra ability—in order to transition from entertaining one belief to entertaining another. On the concept strategy, we entertain a collection of concepts combined in a certain way, and instead of thereby being able to entertain a belief with an object made up out of those concepts, we must first exercise an ability to *associate* those concepts with a simple proposition. That’s already one step too many—one ability we can do without. But with the reference-concept hybrid strategy, there’s yet another step: In order to associate a combination of concepts with a simple proposition, I must *also* be able to attend to the world and notice that those concepts and that proposition are about the same things. This clunky procedure does not make sense of the fact that by entertaining one belief I am thereby (or automatically) able to entertain other beliefs. So the reference-hybrid strategy

¹⁸ Defenders of the concept strategy *should* say this. For suppose they don’t. Suppose they say that we associate *that John loves Suzy* with other concepts—e.g., *dogs* and *barking*. Now consider: How is it that if I can believe that John loves Suzy, I can believe that Suzy loves John? Surely not via associations with *dogs* and *barking*!

is more trouble than it's worth. Even if it relieves the apparent coincidences mentioned above, it does so by introducing a litany of new problems.¹⁹

A fourth and final strategy for resisting (2) is to say that the productivity and systematicity of beliefs is explained by some kind of *intuitive association*. The idea is that we just “see”, as it were, that the proposition *that Sarah is kind* is suitably related to the proposition *that Sarah is very kind*, or that the proposition *that John loves Suzy* is suitably related to the proposition *that Suzy loves John*. So beliefs' productivity and systematicity is explained by our ability to intuitively associate one proposition with others. I'll call this ‘the intuitive association strategy’.

Aside from its general explanatory feebleness, I have two objections to this strategy. First, it doesn't explain productivity or systematicity. On this strategy, the ability to entertain one belief does not *thereby* (or *automatically*) enable, or imply that one is able, to entertain other beliefs with other objects. An extra ability to intuitively associate propositions is required. Thus, this strategy does not explain productivity or systematicity.

Second, this strategy yields unacceptable coincidences. How do I go from entertaining the belief that John loves Suzy to entertaining the belief that Suzy loves John? On the intuitive association strategy, it's by intuitively associating the proposition *that John loves Suzy* with the proposition *that Suzy loves John*. I don't intuitively associate these propositions because they share parts. Nor is it because they are expressed by sentences that share parts, refer to the same entities, or are analyzed using the same concepts. No, on the intuitive association strategy, I just associate these propositions. That's it. Nothing more to say. But then it is a striking coincidence that we regularly and automatically associate propositions like *that John loves Suzy* with propositions like *that Suzy loves John* rather than with propositions like *that John hates Suzy* or even *that dogs bark*. In fact, I'd say this is an absolutely unacceptable coincidence.

So the intuitive association strategy fails as well.

That concludes my survey of strategies for resisting (2). I don't think it can be done. That is, I don't think that there is a plausible way to resist (2). So I conclude that (2) is true. Now, to be fair, I have not exhausted logical space here. There may be other strategies or combinations of strategies that defenders of SIMPLICITY will want to try out. This is relatively unexplored territory. And I welcome further exploration. So defenders of SIMPLICITY may rather see this paper as a *challenge* to explain what seems inexplicable on their view.

But, for what it's worth, I don't see a viable route for defenders of SIMPLICITY. The depth and breadth of problems that beset each of the above SIMPLICITY-friendly strategies are telling. They indicate nothing but dead ends. Even if one barrier can be surmounted, several more block each path. So, again, I don't think there's a plausible way to resist (2). Hence, I conclude that (2) is true. And since all of the other premises of my argument are true, and it is valid, I conclude that SIMPLICITY is false. Propositions have parts. They are not simple.

3. Conclusion

In this paper I have argued that propositions are not simple. Specifically, I have argued that since propositions are the objects of beliefs, and beliefs are productive and systematic, propositions must be complex.

¹⁹ This discussion also speaks to the perils of combining strategies. Doing so may enable one to solve this or that particular problem, but it's also likely to compound preexisting problems and/or introduce new ones.

I have secured this conclusion without taking any stand on what propositions' parts are. So my argument is immune from various objections to specific accounts of the nature of propositions' parts. Even if these accounts are dissatisfying, or ultimately fail, my argument still constitutes progress. For it allows us to see that propositions have parts, whatever those parts may be, and thus, that propositions are not simple.

Many will welcome this conclusion. But it's not all sunshine and roses. Remember, complex propositions engender some serious difficulties having to do with the unity of the proposition. Also, Merricks (2015) raises several problems with the leading accounts of how complex propositions represent things as being a certain way. These are difficulties that SIMPLICITY, if true, would have allowed us to avoid. But SIMPLICITY is not true. So we must look elsewhere if we wish to avoid these difficulties. Or perhaps we will find that we cannot *avoid* them at all, and must face them head on. Regardless, at least we now know that SIMPLICITY is not the answer.

So there's a purely negative upshot here: SIMPLICITY is false; propositions are *not* simple. But there's also a positive upshot: Propositions are complex, and so difficulties concerning the unity and representational powers of propositions must be faced head on rather than dodged. And there's one more thing. I think it's fair to say that metaphysicians who work on propositions have not always paid enough attention to the productivity and systematicity of beliefs, and, more generally, to what philosophers of cognitive science say about how we think and believe. On the other hand, and to be fair, philosophers of cognitive science have not always concerned themselves in great detail with considerations about propositions worthily brought out by metaphysicians. I hope this paper highlights the folly in all of this, and, in some small way, encourages interaction between these parallel streams that share a common end, if not source.²⁰

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