

What Do the Folk Think about Composition and Does it Matter?

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Intuitively, a hammer head and the handle to which it is firmly affixed compose something. Intuitively, there is nothing composed of your pinky and the moon. Theories of composition are sometimes rejected on the grounds that they conflict with intuitions like these. For example, nihilism—the thesis that there are no composites—is widely rejected on such grounds.

Parties to these debates commonly frame these sorts of objections in ways that suggest that the intuitions at issue are those of non-philosophers, or “the folk.”¹ This looks to make it an empirical question whether a given theory is at odds with the relevant intuitions. David Rose and Jonathan Schaffer (2017) have taken up the empirical question of what intuitions the folk have about composition, and they present some results that purport to show that teleological thinking has a substantial influence on folk intuitions. They take these results to impugn those intuitions, which in turn is meant to show that intuitions about when composition occurs can pose no threat to philosophical theories of composition. If they are right about this, much work in material-object metaphysics is undermined, including our own attempts to defend a conservative metaphysics of material objects on the basis of intuitions about composition.²

Here is how we understand their argument:

The Influence Thesis: Whether some objects have a collective function has a substantial influence on folk intuitions about whether those objects compose something.

The Debunking Thesis: If so, then we should not rely on folk intuitions about whether some objects compose something.

The Liberation Thesis: If so, then we should not reject theories of composition on the basis of intuitions about whether some objects compose something.

Conclusion: So, we should not reject theories of composition on the basis of intuitions about whether some objects compose something.

The Influence Thesis is meant to be supported by a series of survey results. The Debunking Thesis is meant to be supported by the contention that the folk's teleological thinking is largely "unscientific" and "illegitimate." Finally, the Liberation Thesis is motivated by the thought that folk intuitions are the only intuitions that could serve as reasons for rejecting theories of composition. The obvious alternative would be to rely on the intuitions of experts, but Rose and Schaffer contend that, because there is so little consensus among metaphysicians, no intuitions have a claim to being *the* intuitions of experts.

After reviewing the aforementioned survey results in section 1, we raise some concerns about each of the premises. In section 2, we challenge the Influence Thesis, by calling attention to competing explanations of Rose and Schaffer's results. In section 3, we challenge the Debunking Thesis by questioning whether the putative teleological influences involve an objectionable kind of teleology. In section 4, we challenge the Liberation Thesis, by showing how one can reject theories of composition on the basis of intuitions without relying either on folk intuitions or "the expertise defense." Finally, in section 5, we offer some reflections on the place of experimental philosophy in metaphysics. The upshot will be a vindication of intuition-based approaches to material-object metaphysics.

1. Four studies

We will now briefly summarize the four studies that Rose and Schaffer offer in support of the Influence Thesis (see 2017: 147–158). In all four, participants are presented with a case involving a plurality of things and are asked to provide an answer between 1 and 7, where 7 indicates complete agreement that those things compose something.³

In the first study, participants are presented with a case in which two politicians are shaking hands. Given just that information, the mean response is 2.48 (SD = 1.84). When the vignette goes on to say that, by shaking hands, they are serving the function of posing for a sculptor, the mean response is 4.86

(SD = 1.60). We'll call these cases $\text{HANDSHAKE}_{\text{NF}}$ ('NF' for 'no function') and $\text{HANDSHAKE}_{\text{F}}$ ('F' for 'function') respectively.

In the second study, participants are presented with a case in which a researcher glues together two previously unheard of objects ("gollywags"). Given just that information ($\text{GOLLYWAG}_{\text{NF}}$), the mean response is 3.85 (SD = 1.94). When the vignette goes on to say that they provide excellent back support after being glued together and placed on a chair ($\text{GOLLYWAG}_{\text{F}}$), the mean response is 5.15 (SD = 1.99).

In the third study, participants are presented with a case in which two mice are glued together. Given just that information (MICE_{NF}), the mean response is 3.0 (SD = 1.73). When the vignette goes on to say that the mice are better and faster at detecting explosives when glued together (MICE_{F}), the mean response is 4.7 (SD = 1.15).

In the fourth study, participants are presented with a case in which an avalanche leaves some rocks scattered across someone's lawn. Given just that information ($\text{AVALANCHE}_{\text{NF}}$), the mean response is 3.05 (SD = 1.34). When the vignette goes on to say that the homeowner decides to leave them there because they make the lawn beautiful ($\text{AVALANCHE}_{\text{AF}}$, for 'accorded function'), the mean response is 5.05 (SD = 1.77). When the vignette instead goes on to say that he *rearranges* the rocks in a way that makes the lawn beautiful ($\text{AVALANCHE}_{\text{DF}}$, for 'designed function'), the mean response is 5.84 (SD = 1.52).

In all four cases, the added information plainly has a substantial influence on the prompted answers. The Influence Thesis provides a natural account of these results. The thesis draws further support from additional psychological research attesting to people's general teleological tendencies (see 2017: 141–147).

Nevertheless, we are not convinced. In the following section, we explore some competing explanations of their results, which we find sufficiently plausible to cast significant doubt on the Influence Thesis.

2. The Influence Thesis

2.1 Creative intentions

The with-function and no-function cases differ with respect to the apparent presence of functions. But there is a further difference between the with-function and the no-function cases that underwrites a plausible, alternative account of participants' intuitions, which we will call *the creative intentions account*.

To get the idea, let us begin by distinguishing between two ways of thinking about a given thing: (i) as having a function and (ii) as being the product of intentions to make something of a specific kind. To be sure, these two ways of thinking about a thing are closely connected. If one regards an object as having been made with an intention that it be a certain kind of thing, it will often be natural to regard it as serving some function, and vice versa. Can these come apart? We think so. For example, suppose that a child were to stack her stuffed animals in a particular way with the intention of making what she calls an “animal pyramid.” If asked what it is for, she replies, “It’s not *for* anything!” We would say that, in that case, the animal pyramid is the product of creative intentions but has no function. But, really, it’s neither here nor there whether we’re right about this or whether the folk would share our judgment. All that matters is that these are two different *ways of thinking* about a thing. Even if they turn out to be coextensive, they nevertheless underwrite importantly different hypotheses about what exactly is accounting for the differences in intuitions.⁴

According to the creative intentions account, what accounts for the differences in intuitions is that participants are thinking of the with-function cases as involving the relevant creative intentions. (On this view, thoughts of function, whether or not participants have them, do not explain the differences in intuitions.) And indeed, all of the with-function cases, but none of the no-function cases, do involve sortal-specific creative intentions. In HANDSHAKE_F , the sculptor and politicians intend to make a model. In GOLLYWAG_F , the researcher intends to make a back support. In MICE_F , the researcher intends to make a bomb detector. In AVALANCHE_{DF} , the homeowner intends to make a rock garden.⁵ By contrast, HANDSHAKE_{NF} and AVALANCHE_{NF} involve no creative intentions whatsoever. In GOLLYWAG_{NF} and MICE_{NF} , the characters in the vignettes do take themselves to have created something, but there is no indication either that there was any particular kind of thing that they were trying to make, or even that they had creative intentions at the time that they were gluing the relevant objects together.

Moreover, our creative intentions account of Rose and Schaffer’s results fits well with Paul Bloom’s (1996) intentional-historical account of folk intuitions about artifacts. According to this account, we will tend to have the intuition that an object belongs to a given artifactual kind K when we infer (or are informed) that it exists as a result of an intention to make a K .⁶ Indeed, Bloom (1996: section 2) specifically argues that the psychological evidence favors this sort of account over a teleological account, citing numerous cases in which subjects classify things as belonging to a given kind even when they lack the characteristic functions of that kind, and vice versa.

Finally, suppose that Rose and Schaffer are right to suggest that teleological influences are illicit (more on this below). In that case, the creative intentions account looks to be more charitable than their teleological account, for the latter would then be ascribing to the folk the deeply misguided view that collectively having a function is relevant to whether some things compose something. The creative intentions account, by contrast, ascribes to them the view that the presence of creative intentions is relevant to whether some things compose something. This *prima facie* plausible view has been championed by numerous metaphysicians, who will think that the folk are on to something if indeed the intuitions are being influenced by the presence of such creative intentions.⁷

Some will no doubt disagree with us here: they will maintain that what was going on inside someone's head cannot be relevant to whether some things compose something.⁸ Suppose they are right. In that case, if the folk's intuitions are influenced by the mere presence or absence of creative intentions, then they are making an error that is just as ripe for debunking as the error that the teleological account attributes to them. Settling this dispute obviously lies beyond the scope of this chapter. But it is a dispute that would have to be settled before we could tell whether the creative intentions account could ground a debunking argument against folk intuitions.

2.2 Answers without intuitions

Even if we were to grant that Rose and Schaffer's results demonstrate the influence of teleology on participants' answers to survey questions, we would still worry that the answers do not express intuitions. It may be that participants are giving these answers without having any intuition one way or the other, or it may even be that they are giving these answers despite having intuitions to the contrary. Either way, the prompted answers would not be expressions of folk intuitions about composition.⁹

There is *prima facie* reason to think that this really is what is going on. We find it extremely plausible—partly because of our own experiences in the classroom—that participants who have no prior experience with philosophy will be confused about how to engage with philosophical questions about composition. And the data in several of the studies bear this out. For instance, in *HANDSHAKE_F*, over half of participants gave answers of 3, 4, or 5 on a seven-point scale, which plausibly indicates some uncertainty.¹⁰ In *AVANLANCHE_{NF}*, nearly 40 percent gave such answers.¹¹ This is not at all what one would expect if

participants were simply having and reporting intuitions that composition does not occur or that it does occur.

But if they are not reporting their intuitions, then what are they doing? A natural answer is that they are thinking through the cases and reporting their considered judgments, perhaps after talking themselves out of their intuitive reactions. For instance, as Simon Cullen (2010) has observed, the use of such scales can sometimes exacerbate the problem of answers deviating from intuitions:

Respondents might interpret the presence of a Likert scale as indicating that researchers regard a question as being somewhat complex. When the question appears at first blush exceedingly obvious . . . this might prompt subjects to search for unintended subtleties . . . [W]hen asked a seemingly obvious question, people look for an alternative interpretation, one to which they can provide an intelligent response. (291–292)

For another illustration of how participants might talk themselves out of reporting their intuitions, take *HANDSHAKE_F*. In the vignette, Rose and Schaffer have two characters, Liz and Andy, arguing about whether the hand-shaking politicians compose something. Liz insists that they do, while Andy insists that they don't. Perhaps, like the two of us, participants begin with the intuition that the politicians do not compose anything. But they then start thinking about Liz's stated reason for saying that composition does occur—namely, that the politicians function as a model. This strikes them as a pretty good reason, perhaps in light of further reflection on other paradigm cases of composition (tables, chairs, cars). By contrast, Andy's reason for thinking the politicians don't compose anything falls flat. (He says that merely coming into contact doesn't suffice for composition. But the politicians aren't merely in contact; their hands are clasped together, not so unlike the parts of tables, chairs, and cars.) Participants then indicate more agreement with Liz than with Andy because they take Liz to have given a better argument, not because they have the intuition that the politicians compose something.

To be sure, this hypothetical reconstruction of participants' reasoning still involves a teleological influence, insofar as participants are moved by Liz's reasons. So we are not right here disagreeing with Rose and Schaffer's claim that participants give the answers they do "partly on the basis of considering when that plurality serves a purpose" (2017: 147). Indeed, we are suggesting that their answers may well be based on such considerations *as opposed to* being based on intuitions.

Some may object that it is bad enough if the *answers* are influenced by teleology. But in fact this will not do for Rose and Schaffer's purposes. Their ultimate

goal is to impugn the reliance on intuitions about composition in metaphysics. If all they can impugn is the teleological *reasoning* that informs the folk's answers, then metaphysicians are in the clear so long as they avoid being led away from their own intuitions by such teleological reasoning (more on this in section 4).¹²

2.3 Imaginative variation

Our third worry is that there is every reason to expect that, in some of the studies, different participants are picturing utterly different things. To see what we have in mind, contrast a prompt that reads, "I glued some objects together. Do they compose something?" with one that reads, "I glued some boards together so that I could use them to float from one island to the next. Do they compose something?" The second prompt leads us to imagine a raft of some kind. The first leaves it entirely open as to how we are to imagine the case—perhaps it was an earthworm glued to the end of a blade of grass. Depending on how participants imagine the first case, there are any number of non-teleological differences between the cases that could explain a difference in the responses.

Likewise, there can be no expectation that participants given GOLLYWAG_{NF} are picturing even roughly the same thing as participants given GOLLYWAG_F. In GOLLYWAG_{NF}, participants are given no guidance whatsoever either about what gollywags look like (only "nobody has ever [before] seen or heard of such a thing" (2017: 150–151)) or the way in which they are glued together. Participants could be picturing just about anything—perhaps two alien creatures glued together at the tips of some of their antennae. In GOLLYWAG_F, by contrast, their imaginative freedom is far more constrained, insofar as they must be picturing something seat-like that can be placed on a chair and sat on comfortably.¹³ Similarly, in MICE_{NF}, participants are given no guidance about how the mice are glued together—perhaps one's tail has been glued to the other's belly and they are flailing around chaotically. In MICE_F, by contrast, they are presumably glued side by side and running together like a single eight-legged creature. As in the raft example, given the inevitable imaginative variation, there are any number of non-teleological differences in how participants imagine the cases that could be accounting for the different responses.¹⁴

2.4 Suggestive wording

Finally, a concern about the wording of some of the vignettes. In HANDSHAKE_F, participants are told that the politicians "will be providing a model for the

sculpture.” Significantly, these words are not put in the mouths of the characters in the vignettes (Liz and Andy). Rather, it is the questioners themselves using the singular ‘a model’. This may lead participants to infer that the questioners themselves take the politicians to compose a model, thereby encouraging participants to meet the questioners’ expectations by answering in the affirmative. Similarly, in GOLLYWAG_F, the questioners say in their own voice that the researcher “places the Gollywag-Supporter on his desk chair.” It is not unlikely that participants were influenced by the questioners’ use of the singular ‘the Gollywag-Supporter.’¹⁵

2.5 The way forward

We have raised a variety of concerns about the different studies. With Handshake, we raised concerns about the debating characters and the use of the singular ‘a model’. With Gollywag, we were concerned about the use of ‘the Gollywag-Supporter’, and in both Gollywag and Mice we were concerned about imaginative variation. Finally, in all cases, we were concerned that participants’ answers do not express intuitions and that the results were better explained by the presence of creative intentions than by the (apparent) presence of collective functions.

Let us end on a constructive note, indicating how our concerns might be addressed in future psychological work on folk intuitions about composition. First, if the same vignettes are used in future work, ‘providing a model for’ could be replaced with ‘posing for’, and ‘the Gollywag-Supporter’ could be replaced with ‘the superglued gollywags’, to address the indicated problems of suggestive wording. Second, worries about imaginative variation can largely be dealt with by presenting participants with images of the objects under discussion, to help ensure that they are picturing the same thing across the different versions of the vignettes. Third, one can test the hypothesis that it is the differences in creative intentions that are influencing participants’ intuitions, as opposed to teleological differences, by examining cases involving artifacts that aren’t for anything. One might, for instance, use the aforementioned case of the child who stacks her stuffed animals with the intention of making an “animal pyramid.” When asked what animal pyramids are for, she replies (in one version) that they are not *for* anything or (in another) that they are for scaring off the boogeyman.

Ensuring that prompted answers express intuitions will likely be more difficult, and we do not ourselves see clearly how to achieve this. Dropping the debating characters that appear in some of the vignettes, and asking more directly

whether composition occurs, would begin to address some of the concerns we raised in section 2.2. However, there would still remain the more general worry that the questions are so bizarre that participants won't know what to do with them, and that their answers do not express anything that anybody would want to call "intuitions." Perhaps participants can be eased into questions of composition by training them with some clear cases, in something like the following way. They are shown an image of a hammer and told "there is a single thing composed of all the things in this picture, since there is something composed of the handle and head." They are then shown a picture of a dog standing by a tree and are told "there is no single thing composed of all the things in this picture, since there is nothing composed of the tree and the dog." Participants can then be shown further images—with captions giving teleological or non-teleological descriptions—and asked to rate their agreement with the claim that there is a single thing composed of all the things in the image.¹⁶ Admittedly, this sort of training procedure still won't address many other reasons for worrying that participants' answers do not express their intuitions, and indeed it may introduce new problems.¹⁷

3. The Debunking Thesis

We have thus far been challenging the Influence Thesis, according to which there are substantial teleological influences on folk intuitions about composition. We turn now to the Debunking Thesis, according to which we should not rely on folk intuitions about composition if the Influence Thesis is true.

The idea behind the Debunking Thesis is that there is something deeply problematic about teleology. But if teleology is wrong, we don't want to be right. Lots of things obviously *do* have functions—artifacts, if nothing else. There is nothing unscientific, illegitimate, or "benighted" about the idea that umbrellas are for blocking the rain. If it were only legitimate teleology of this sort that had an influence on folk intuitions, we would have little reason to accept the Debunking Thesis.

What reason, then, is there to accept the Debunking Thesis? In their defense of the thesis, Rose and Schaffer present psychological evidence indicating that the folk have a tendency to engage in clearly illegitimate teleological thinking, extending well beyond the realm of human artifacts. For instance, they point to studies suggesting that children are willing to give teleological accounts of just about anything: pointy rocks are for scratching itches, clouds are for raining, and

lions are “for going to the zoo” (2017: 143). Additional evidence suggests that the effect persists into adulthood, particularly in conditions of cognitive strain (2017: 144–145).

We of course agree that these are misattributions of function and purpose. Perhaps all non-artifactual teleology is illegitimate. Nevertheless, we do not see how this is relevant to the cases at hand. In all of the with-function cases, if the candidate composers do indeed compose something, what they compose is an artifact: a model for a sculpture, a back support, a bomb detector, or a rock garden.¹⁸

For these reasons, Rose and Schaffer’s studies should not convince us that folk intuitions *about composition* involve an unacceptably promiscuous application of teleological concepts. Still, they might try to motivate the Debunking Thesis by claiming that the aforementioned promiscuity reveals a misunderstanding of function, and that, given this misunderstanding, the influence of teleology on folk intuitions is always illicit.

What exactly is the misunderstanding supposed to be? Rose and Schaffer insist that the folk are “teleomentalists,” by which we understand them to mean that the folk take functions always to be rooted in intentions or other mental states. Perhaps what they have in mind is that, according to the folk’s understanding of function, whenever things have functions, there must be agents who bestow those functions upon them. Rose and Schaffer (2017: 145) point to evidence that the folk are deeply inclined to believe that animals have the functional parts they do (e.g., giraffes’ long necks) because “nature” intended for them to have those functions. This, we agree, would be a mistake. But it is utterly plausible that human artifacts have the functions that they do as a result of intentions. We don’t see anything wrong with teleomentalism (so understood) as long as it is restricted to the realm of artifacts. And, since the studies all involve both artifacts *and* agents to bestow functions upon them—the sculptor, the researchers, the homeowner—there is nothing problematic about this sort of teleomentalistic understanding of the cases at hand.

Alternatively, perhaps what Rose and Schaffer have in mind in calling the folk “teleomentalists” is that the folk attribute agential characteristics to the *bearers* of function. On this view, when the folk claim that an umbrella is for blocking rain, they bizarrely think that *the umbrella* intends to block the rain. We find it very hard to believe that the folk think about artifacts in this way. Rose and Schaffer may suggest that the view draws some support from people’s general willingness to take up “the intentional stance”—as when subjects describe moving geometric figures on a screen as “trying to escape” (2017: 146)—though we

are skeptical.¹⁹ In any case, this still falls short of establishing the Debunking Thesis. For the folk would still be correct in thinking that the items in question have the functions they do—even if they're wrong about the source of the functions—in which case it's unproblematic that (correct) teleological judgments are influencing their intuitions about composition.

We have just been considering two ways in which the folk might be thought to misunderstand teleological concepts, as always involving agential bestowers or as always involving agential bearers. A more radical approach to motivating the Debunking Thesis is to claim, not that the folk misunderstand teleological concepts, but rather that, in thinking of teleology in these ways, they correctly understand their own, defective teleological concepts, which do not apply to anything at all. By 'function,' the idea goes, we "serious theorists" express the concept $\text{function}_{\text{lite}}$, and indeed some things do have $\text{functions}_{\text{lite}}$. The folk, on the other hand, express the concept $\text{function}_{\text{heavy}}$, and are mistaken even when they say "umbrellas have functions," for they are wrongly saying that umbrellas have $\text{functions}_{\text{heavy}}$. But we find it completely implausible—on well-known externalist grounds (see Burge 1979)—that the folk mean something different from us by 'function' ('purpose,' 'for'), even if their understanding of teleological concepts is substantially different from ours.

Here is one final way that Rose and Schaffer might try to explain the badness of the folk's teleological tendencies. They might say that the relevant problem is the folk's tendency to give teleological *explanations*. While there may be nothing wrong in saying that a particular pointy rock is for scratching itches (e.g., if you have been using it as an itch-scratcher), there is something wrong with supposing that it is pointy *because* it is for scratching itches. Be that as it may, there are cases in which teleological explanations are entirely unproblematic: there is nothing unscientific about explaining what makes this or that object an umbrella partly in terms of the fact that it functions as an umbrella. So the mere fact that teleology plays an explanatory role in the folk's thinking is not itself problematic.

Rose and Schaffer might concede that teleological explanations are *sometimes* correct but insist that teleological explanations of *why composition occurs* are never correct. And, for what it's worth, we would agree with that.²⁰ This is in part because we think that there are counterexamples to teleological accounts of composition (see section 4), and in part because we think that there are more promising explanations of why composition occurs when it does.²¹ Nevertheless, even granting that teleological explanations of composition are wrongheaded, this is not enough to secure the Debunking Thesis. For that, we would need evidence, not just that folk intuitions are *in some way* influenced by the perceived

presence of teleology, but, more specifically, that they are influenced by dubious teleological explanations. However, the studies do not seem to support anything as specific as that.

In conclusion: The Debunking Thesis rests on the idea that folk intuitions about composition involve a teleological mistake. We have argued that Rose and Schaffer have failed to identify any mistake that the folk are making and that is plausibly responsible for their (allegedly) teleologically-influenced intuitions. The folk may indeed be influenced by the assumption that there is teleology in the realm of human artifacts, but this is no mistake. And they may indeed have mistaken teleological assumptions about the non-artifactual realm, but we have no reason to think that those mistakes underwrite their intuitions about Rose and Schaffer's artifactual cases. We see no good reason to accept the Debunking Thesis.

4. The Liberation Thesis

We have raised some doubts about both the Influence Thesis and the Debunking Thesis. But suppose these are true and that folk intuitions about composition cannot be trusted on account of illicit teleological influences. What does this tell us about the metaphysics of composition? Rose and Schaffer contend that, in undermining the folk intuitions, they have thereby liberated theories of composition from any pressure to conform to intuitions.

The Liberation Thesis: If we should not rely on folk intuitions about whether some objects compose something, then we should not reject theories of composition on the basis of intuitions about whether some objects compose something.

The liberation from intuitions about composition is meant to be total: metaphysicians working on theories of composition are supposed to be liberated, not only from folk intuitions about when composition occurs, but from *anyone's* intuitions about when composition occurs.

Why accept the Liberation Thesis? Even supposing that folk intuitions have successfully been debunked, why can't a philosopher rely on his or her own intuitions? For instance, we (Chad and Dan) reject nihilism on the basis of the intuition that atoms arranged dogwise compose something. We do not accept that they compose something on the basis of folk intuitions (i.e., the intuitions of non-philosophers). Rather, each of us, neither of whom is any longer a member

of the folk, accepts it on the basis of his own intuition that atoms arranged dog-wise compose something. Other philosophers may accept it on the basis of the intuitions that they speculatively attribute to the folk. So much the worse for them.

Some may object that it is unrealistically optimistic to suppose that our intuitions, unlike those of virtually everyone else on the planet, have somehow escaped the nearly ubiquitous influence of teleology. But, setting aside our concerns from section 2, Rose and Schaffer's results would seem to provide excellent reason for thinking that we do not have the teleologically-infused intuitions that they attribute to the folk. We have a clear intuition that the politicians do not compose anything in HANDSHAKE_F . We have an intuition that the mice do not compose anything when you glue them together in MICE_F . We have an intuition that no new object comes into existence when the homeowner sees the rocks in AVALANCHE_{AF} and realizes that they make his lawn beautiful. We don't share the folk's alleged intuitions about these cases, which is reason to think that we are immune, or at least resistant, to teleological influences.²²

Additional evidence of our immunity to teleological influences appears in our intuitive reactions to anti-teleological arguments in the literature. Consider the following simple teleological account of composition: some x s compose something iff the x s together serve some function. We take this view to have been soundly refuted by H. Scott Hestevold:

Consider a counterexample ... which will provide a case in which two objects together serve the requisite purposive function and yet there is no object strictly made up of those two things. The purposive function of two-way communication is served by the two-way radio located at the flight-control center at Cape Kennedy and by the two-way radio located in a space capsule orbiting on the other side of the Earth. Although the [proposed conditions for composition are] satisfied in this situation, the two things [do not compose anything].²³

Hestevold's counterexample evokes in us (Chad and Dan) an utterly compelling intuition: that the radios do not compose anything. The counterexamples are even clearer in the other direction. Atoms arranged pebblewise typically do not together serve any function. But we have the intuition that they do compose something, namely, a pebble. Once again, we have somehow escaped the alleged influence of teleology.

Recognizing that we do not share the folk's intuitions about cases like HANDSHAKE_F and MICE_F may give rise to another objection, namely, that intuitional disagreement with the folk is a defeater for our own intuitive beliefs. In

response, we are happy to grant (at least for the sake of argument) that intuitional disagreement is typically a defeater, and even that folk intuitions typically trump philosophers' intuitions. But, in the present context, where we are supposing that the folk's intuitions have indeed been debunked, diverging from their intuitions cannot be cause for concern.

To be clear, we don't here take ourselves to be invoking the so-called expertise defense.²⁴ We're not saying that the intuitions of trained philosophers are generally of higher quality than those of the untrained folk. Nor are we saying that our training is in this case responsible for our resistance to the teleological influences.²⁵ We are not offering any hypothesis about the source of our resistance. For all we have said here, this may just be a selection effect: we have managed to become professional philosophers because we lack the teleological tendencies, not the other way around. Once again, all we are saying is that, in cases in which folk intuitions have been debunked, failing to share the folk's intuitions isn't a defeater.

Finally, one might object that differences among *metaphysicians'* intuitions about when composition occurs makes our reliance on our own intuitions problematic.²⁶ Again, we agree that intuitional disagreement can in principle be problematic. But do metaphysicians have different intuitions about composition? To be sure, plenty of them would give different *answers* from us about whether composition occurs in this or that case. But there is good reason to doubt that intuitions about when composition occurs motivate their answers. For one thing, these philosophers have been very explicit about why they give the answers that they do: because accepting that composition sometimes occurs leads to violations of anti-colocation principles, or because accepting composition in some cases but not others leads to vague existence or intolerable arbitrariness.²⁷ This suggests that their answers to questions about when composition occurs are based not on competing intuitions—the intuition that my pinky and the moon *do* compose something or the intuition that a hammer head and handle *don't* compose anything—but rather on philosophical arguments.²⁸

Of course, the fact that they argue for their answers doesn't mean that they don't *also* have intuitions directly in support of those answers. But if they truly did have such intuitions, one would expect to find them treating their views as natural, intuitive starting points. What one finds, however, are concessions that their views are odd or incredible. Sometimes, these concessions are supplemented by attempts to impugn the intuitions that tell against their views. Other times, they are supplemented with attempts to show that we have somehow misunderstood or misdescribed the intuitions that seem to tell against their views.²⁹

The fact that they go to such lengths to impugn or explain away the intuitions strongly suggests that they share our intuitions and accept the views they do *despite* having the intuitions.³⁰

5. Experimental philosophy and its place in metaphysics

We have cast doubt on the Influence Thesis: there is reason to think that something other than teleology is influencing participants' answers and reason to suspect that the answers don't express intuitions at all. We have challenged the Debunking Thesis by arguing that, to the extent that folk intuitions have been shown to be influenced by teleology, it is not teleology of the bad sort but rather the completely innocuous sort that we expect to find in the world of artifacts. Finally, we have challenged the Liberation Thesis by showing that one can reasonably rely on intuitions about composition without having to rely on the intuitions of non-philosophers.

Let us close with a brief word about how we see the role of experimental philosophy in the metaphysics of composition. First, an analogy: You believe that it is 4:15 because you check your phone and seem to see '4:15' displayed on the screen. You are justified in believing that it is 4:15 on that basis, and you are justified despite not having checked in with your neighbor or an optometrist or a psychiatrist. Of course, there are things you can learn from these people that would undermine your justification. If your neighbor's phone says that it is 4:51, or if an optometrist tells you that your eyes are playing tricks on you, or if a psychiatrist says that you are completely delusional and do not even own a phone, it is probably time to suspend belief. The point is that, although these investigations can in principle undermine belief, you can be justified in believing that it is 4:15 without undertaking them.

Similarly, we think that each metaphysician's primary evidence for assessing theories of composition is her own intuitions. She does not, for example, need to base her belief that nihilism is false on any empirical hypothesis about what intuitions the folk have. Nor is there any problem with basing one's beliefs on one's own intuitions without first checking what intuitions the folk or other philosophers have.³¹

This is not to deny that revelations about the intuitions of the folk or other philosophers *can* affect our justificatory status. As mentioned earlier, intuitional disagreement can sometimes undermine our intuitive beliefs. Indeed, experimental philosophy can in principle undermine our intuitive beliefs in just the

way Rose and Schaffer think: by revealing that they are influenced by factors that by our own lights are irrelevant.³² But so can finding out that you have taken a pill that disrupts your ability to think clearly about composition. Our point is that you do not first have to investigate and rule out all of these in-principle defeaters in order to be justified in forming beliefs about composition on the basis of your own intuitions.³³

Notes

- 1 See, for example, Sanford (1993: 220) on “naive, commonsense, folk mereology,” Markosian (1998: 211) on “standard, pre-philosophical intuitions,” Thomasson (2007: 128) on “our pretheoretic sense of what objects there are,” Korman (2009) on “pretheoretical beliefs,” Hirsch (2011: 182) on “pre-philosophical assertions of commonsense,” and Kriegel (2011: 198) on “folk’s intuitive verdicts.”
- 2 See Carmichael (2015) and Korman (2015).
- 3 In some cases, participants are directly asked the extent to which they agree that the objects compose something. In others, the vignettes feature two characters disagreeing about whether composition occurs, and participants are asked which of the two characters they agree with (e.g., on a scale with 1 marked ‘Smith is right’, 4 marked ‘Neither is right’, and 7 marked ‘Jones is right’).
- 4 Even enemies of teleology should acknowledge the difference, since they won’t want to think of anything as *having a function*, but they will presumably agree that some things are *the products of creative intentions*.
- 5 Even AVALANCHE_{AF} involves something like, but not exactly like, sortal-specific creative intentions. No one, in this case, sets out to *make* a rock garden, but there at least is an intention *that it be* a rock garden. This may help explain why subjects lean more toward pro-composition judgments in AVALANCHE_{AF} than in AVALANCHE_{NF}.
- 6 Bloom (1996: 10) suggests an additional requirement that one *successfully* bestow upon the object features characteristic of the intended kind; cf. Thomasson (2003: 598). This may help explain the different judgments in Rose and Schaffer’s rope cases (2017: 162–163). Though the differences may be better explained in some of the ways we described in section 2.2 and section 2.3.
- 7 See Thomasson (2003: section 3.1), Wasserman (2004: 700), Korman (2010: section 7, 2015: ch. 8.4), and Evnine (2013); cf. Baker (2000: 38–39, 2007: 11–13). The view that the presence of creative intentions is relevant to which objects there are can be motivated by reflection on cases like the following. When a sculptor deliberately chisels a hunk of stone into some statuesque shape, a statue comes into existence. But suppose that a meteoroid, as a result of random collisions with

- space junk, temporarily comes to be a qualitative duplicate of some actual statue. Intuitively, nothing new comes into existence which, unlike the meteoroid, cannot survive further collisions that deprive the meteoroid of its statuesque form.
- 8 See van Inwagen (1990: 12–13), Rea (1998: 352), and Hudson (2001: 111).
 - 9 See Bengson (2013) who makes a powerful case that answers do not express intuitions in many of the most prominent studies in experimental philosophy. Cf. Wright (2009, 2013) and Cullen (2010).
 - 10 No participants answered 1, three answered 2, two answered 3, seven answered 4, six answered 5, four answered 6, and six answered 7.
 - 11 Sixteen participants answered 1, nine answered 2, eleven answered 3, nine answered 4, two answered 5, five answered 6, and four answered 7.
 - 12 Cf. Wright (2013: 498).
 - 13 This is particularly troubling since the experiment uses a between-subjects design: the group of participants responding to $GOLLYWAG_F$ was disjoint from the group responding to $GOLLYWAG_{NF}$.
 - 14 One might object that, if indeed participants are imagining different things, one would expect a random distribution in $GOLLYWAG_{NF}$ and $MICE_{NF}$, which is not what Rose and Schaffer found. However, even if the vignettes provide little guidance to participants' imaginations, the resulting imaginative variation is not completely unconstrained. We would expect certain psychological defaults here. For example, if asked to imagine a dog and given no further guidance, most participants would surely imagine a dog with four legs. Thanks to David Rose and Jonathan Livengood here.
 - 15 Cf. Cullen (2010: 280–281) on the influence of seemingly insignificant features of the experimental design.
 - 16 Even better, following Wright (2009), participants could be asked a “yes/no” question about whether composition occurs and then given a scale for rating their confidence in their answer. We think this would go some way toward addressing Cullen's concern about scales (mentioned in section 2.2).
 - 17 One potential problem is that it may encourage participants to report judgments of similarity between test cases and training cases, as opposed to reporting intuitions about the test cases (cf. Bengson 2013: section 5.1). In addition, the proposed training is problematic if we want to leave open whether the folk are nihilists or universalists. But it seems reasonable to set nihilism and universalism aside, especially in light of Rose and Schaffer's results on pp. 158–159.
 - 18 Some may say that the rock garden is not an artifact in $AVALANCHE_{AF}$. Even if that's true, insofar as it belongs to a kind most of whose instances are designed artifacts (viz., rock gardens), it is similar enough to an artifact to render the ascription of teleology not clearly inappropriate.
 - 19 The example of the moving shapes is from Heider and Simmel (1944). Heider and Simmel themselves describe their experiment in mentalistic terms, saying, “a few

- ‘anthropomorphic’ words are used since a description in purely geometrical terms would be too complicated and too difficult to understand” (245). We suspect that participants do so for similar reasons.
- 20 Though some would disagree. See Bowers (manuscript) for a defense of a teleological account of composition; cf. Simons (2006: section 5).
 - 21 See Carmichael (2015) and Korman (2015: ch. 8.4).
 - 22 We are also evidently immune to the folk’s alleged tendency to attribute function or purpose to everything in nature: we find the suggestion that arbitrary pebbles have a function or purpose absurd.
 - 23 Hestevold (1981: 374).
 - 24 See, for example, Weinberg et al. (2010), Sosa (2011), Williamson (2011), and Sytsma and Livengood (2015: ch. 4.3) for discussion.
 - 25 Though we do think that training helps ensure that people report their intuitions (rather than other mental states) about p (rather than q) when asked for their intuitions about p.
 - 26 See Rose and Schaffer (2017: 173).
 - 27 See Korman (2015: ch. 2, 2016) for an overview of the arguments.
 - 28 Of course, the premises of these arguments are themselves motivated by intuitions, but not intuitions about whether composition occurs in this or that case. Accordingly, the fact that they are moved by these arguments is no indication that have different intuitions about which things compose something.
 - 29 See Korman (2015: chs. 5–7) for an overview.
 - 30 See Korman (2015: ch. 4.3.3) for more on intuitional disagreement.
 - 31 Why then are we always asking each other about our intuitions? Often, it is because we are about to use an intuition-driven argument to convince someone of something, and we are checking whether they share the intuitions that underwrite the argument.
 - 32 Though, as we emphasized in section 4, it’s far less troubling if all that can be shown is that *other* people, ourselves not included, are having intuitions that are influenced by irrelevant factors.
 - 33 Thanks to John Bengson, Zach Horne, David Kovacs, Jonathan Livengood, David Rose, Jonathan Schaffer, and Jen Wright for helpful comments.

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