Two Paradigms for Religious Representation:
The Physicist and the Playground (A Reply to Levy)

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Absract: In an earlier issue, I argue (2014) that psychology and epistemology should distinguish religious credence from factual belief. These are distinct cognitive attitudes. Levy (2017) rejects this distinction, arguing that both religious and factual "beliefs" are subject to "shifting" on the basis of fluency and "intuitiveness." Levy's theory, however, (1) is out of keeping with much research in cognitive science of religion and (2) misrepresents the notion of factual belief employed in my theory. So his claims don't undermine my distinction. I conclude by suggesting some approaches to empirically testing our views.

0. Introduction: Representation-Discrepant Behavior

Should psychology and epistemology recognize *religious credence* as a distinct attitude from *factual belief*? In other words, is the cognitive attitude one typically has when one "believes" Jesus Christ is alive *different* from the attitude one typically has when one "believes" one's cat is alive? Both underlying attitudes—ways of relating to and processing representations—can be called "belief."[1] But I argue (2014), appealing to a broad range of evidence, that they are different. My longer paper gives a full theoretical description of the difference, but for present purposes we can think of factual belief as a very matter-of-fact way of relating to descriptive contents, while religious credence is a reverential, identity-constituting way of relating to descriptive contents. Levy (2017), however, attempts to deny my distinction by appealing to the "fluency" and "intuitiveness" of processing various representations in order to explain the relevant data. If fluency and intuitiveness can do the explanatory work, there is no need to posit my distinction. Or so he seems to think.[2]

Levy and I do agree about an important fact that frames our disagreement. Religious "believers" often do not act on their internal religious representations in ways one would expect, if those representations were straightforward, fluently processed factual beliefs (however one understands those terms). Here are some examples.

Once-a-week Christians, against whom preachers rail, exemplify that many Christian "belief" attitudes are inoperative six days a week. And Edelman (2009) shows that *on Sundays* people in predominantly Christian states look at pornography less than the rest of the population, but they look at it *more* during the rest of the week. Charitable giving shows the opposite pattern (Malhotra, 2008). A factual belief that *God is always watching*, however, should lower pornography use to some extent *every* day, so it's puzzling why internal

[1] It seems likely, however, that when people use *verbs* for such mental states, they are more likely to use "believe" for religious credences and "think" for factual beliefs (Heiphetz, Landers, and Van Leeuwen, in preparation). Note also that this kind of distinction doesn't *only* apply to *religious* credence and factual belief. Bloom (2015), for example, generalizes my original notion of credence into the political/ideological realm.

[2] There are several components to Levy's paper. For reasons of space, I focus on those I take to be most central.

representations with *God-is-watching* contents don't inhibit "sinful" behavior more generally (Dennett, 2006).

Members of the Vezo tribe in Madagascar, to give a cross-cultural example, report different things about ongoing psychological capacities of deceased ancestors, depending on whether they are probed in a ritual context (Harris and Astuti, 2008). They are less likely to say that an ancestor can *see* or *think* when asked in a non-ritual setting, and Levy and I agree that this merits reflection. Similar results emerge in studies in Spain (Harris and Giménez, 2005), in Austin, Texas, and on the Melanesian island Vanuatu (Watson-Jones *et al.*, 2016).

A religious geologist, to turn to a different domain, can compartmentalize his "belief" in Young Earth Creationism, ensuring that it has no impact on his scientific thinking and practices in the lab or in the field, though he professes it in church (Dean, 2007; Ross, personal communication). But that is strange, since if he factually believed it, he should think that such apparent knowledge[3] might lead to breakthrough.

And Shariff *et al.* (2015) offer a meta-analysis that shows religious *primes* make a significant difference to how prosocial "believers" are. Religious "beliefs" do not increase prosociality (such as charitable giving) all the time, but only when they are primed. Muslim shopkeepers in Morocco, relatedly, selected the most altruistic option for charitable giving in one-shot games *within a short time after hearing the call to prayer*, but the effect was transient.

> Interestingly, the data collected on the amount of time that had passed since the most recent call to prayer suggests that this effect is short-lived. While 100% of participants who responded while the prayer was audible chose the most charitable option, less than 50% of those who responded in the 20 minutes following the call to prayer did. (Duhaime, 2015: 595)

Studies show that representing God as punitive underlies religious prosociality: God punishes people who do not cooperate (Norenzayan *et al.* 2016; Yilmaz and Bahçekapili 2016). So it is puzzling why many people are motivated to avoid divine punishment *only in certain contexts*. The *brevity* of the prosociality effect is striking.

To have a general term, let's use "representation-discrepant behavior" to refer to behaviors that diverge from what one would do, if one's relevant "beliefs" were straightforward, well-understood factual beliefs. There are many kinds of representation-discrepant behavior. The examples above are *religious* representation-discrepant behaviors.

This brings us to the disagreement: while wholeheartedly agreeing it exists, Levy and I have different strategies for explaining religious representation-discrepant behavior.

Levy's explanation is that the processing of many religious beliefs is *disfluent*, which makes them lack "intuitiveness." That means they can be hard to think with, to understand, and sometimes to retrieve (disfluency), which makes a difference to whether they "seem to be true to the agent" (intuitiveness, 110). *Context*, however, makes a difference. In religious contexts,

[3] As Sperber writes, "From the point of view of the 'believing' subject, factual beliefs are just plain 'knowledge,' while representational beliefs could be called 'convictions,' 'persuasions,' 'opinions,' 'beliefs,' and the like" (1985: 52). This perspective suggests that Ross's "belief" in Young Earth Creationism does not lie on the factual belief side of the divide.

religious beliefs are processed more fluently, so they may become intuitive and ripe for guiding behavior. Levy writes, "Processing fluency is sensitive to context, because context affects whether representations are retrieved, how easily they are retrieved and how fluently they are processed" (115).

My explanation for religious representation-discrepant behavior is that many religious "beliefs"—*religious credences*—are not factual beliefs in the first place. Rather, they are secondary cognitive attitudes, which do not play as widespread a role in guiding inference and action as factual beliefs do, though they still provide normative orientation and are identity constituting (among other distinctive properties). Thus, religious credences often cease guiding actions in non-religious contexts for reasons that, *contra* Levy, have nothing to do with how fluently they are processed. Ideas like *God is watching* or *God punishes sinners* are perfectly easy to understand (they are fluent and intuitive), regardless of context. The fact that "believers" often do not act in accord with those ideas is due to their *attitude* to them, which is religious credence, not factual belief. Reverential attitudes are setting dependent in ways that matter-of-fact attitudes are not.

Levy's argument against my position appears to have two aspects. First, he thinks his appeal to lack of intuitiveness explains the relevant data. Second, he thinks that "factual beliefs" themselves are also subject to context-based "shifting." Taking these points together, he seems to think there is no basis for distinguishing religious credence from factual belief. The main purpose of this present paper, correspondingly, is to make two points:

1. Levy is wrong to think that the relevant religious ideas are not intuitive; that view is out of keeping with a mountain of empirical research in cognitive science of religion.

2. Levy's title claim—that religious beliefs are factual beliefs—is only plausible if one uses the phrase "factual belief" in a loose way that misrepresents the meaning I give it as a term of art, so his arguments don't logically impinge on the distinction I in fact draw.

Since Levy's explanation strategy is not likely to work (point 1), that leaves my approach as a contender for explaining the sorts of religious representation-discrepant behavior mentioned above. After making points 1 and 2 in Sections 1 and 2, I conclude by suggesting research directions that could both test and deepen my view.

Two brief logical points are necessary before moving on. First, Levy and I both recognize that religious behavior is a complex and varied enough domain that no single theory will cover *all* the psychologically interesting data—far from it. So our dispute is about which theory will be more fruitful for explaining patterns in the extant research and generating more research in the future. Second, there is an asymmetry between our positions: Levy denies my distinction, but I don't deny that disfluency and lack of intuitiveness are real phenomena. The result is that I can hold that *some* religious credences are unintuitive, like those that encode theologically abstruse doctrines; I just don't think that *all* or even *most* are, which is why Levy's approach won't work.

1. Intuitive Religious Representations

Levy thinks the un-intuitiveness of many religious beliefs resembles the un-intuitiveness of scientific beliefs: "they do not differ from many scientific beliefs in being counterintuitive"

(112). Elsewhere, Levy assimilates the "practical setting dependence" of religious beliefs to that of beliefs about *physics*: "adults with college level education in mechanics invoke folk physics to explain and predict motion . . . . This exhibits the practical setting dependence of factual beliefs . . . " (111). While this passage doesn't use the phrase "practical setting dependence" according to my intended meaning, it does show that Levy thinks much the same thing is going on when religious "beliefs" fail to guide behavior as when reflective beliefs about physics fail.

Simply put, Levy thinks the religious person who does not act on her religious "beliefs" is like the physicist who does not use $d=½\ gt^2$ to estimate in real time when a ball will hit the ground: the processing is too unintuitive to be real-time workable.[4] On his view, processing *God is watching* is disfluent and unintuitive in the way that processing $d=½\ gt^2$ is, which is why religious people don't act on it much of the time. (More precisely, *to the extent that* that representation isn't used, that is because it's disfluent and unintuitive.)

Levy produces almost no evidence, however, that culturally widespread representations of the supernatural, such as we find in most religious credences, are disfluently processed; in fact, none of the articles on disfluency he cites are about religious ideas. So his view that religious representations are disfluent and unintuitive amounts to being theoretical conjecture.

Unfortunately, his conjecture is out of keeping with central results in cognitive science of religion. While most theorists, including myself, agree that abstruse theological doctrines are unintuitive (Barrett, 1999; McCauley, 2011), much empirical work supports the idea that popular representations of the supernatural are culturally successful *because they trigger and are processed by intuitive systems that evolved for other purposes*. This intuitive by-product view of religious representations is supported by anthropological fieldwork (Boyer, 2001), experimental psychology (Barrett and Keil, 1996; Atran and Norenzayan 2004a, 2004b), and empirically based theory (McCauley, 2011).

Levy's view that "[religious beliefs] do not differ from many scientific beliefs in being counterintuitive" sits ill with the evidence that McCauley (2011) marshals in his book *Why Religion Is Natural And Science Is Not*. McCauley's main thesis is that the ideas of popular religion are culturally successful *because* they are suited to being processed by intuitive ("maturationally natural") cognitive systems, such as intuitive biology and psychology; in this they *differ* from scientific ideas, which are not suited to intuitive processing.

> Religion in its popular, that is, widespread, forms incorporates assumptions that are more common, materials that are more familiar, and judgments that are more intuitive than is the case with either science or theology. Religion in this sense employs ideas and forms of thought that are *naturally appealing* to the human mind, because they are rooted in maturationally natural cognitive dispositions and the kinds of knowledge they support, which are available to most children by the time they reach school age. (154)

[4] Physicists have sophisticated theories of how the world works. But importantly, there are many ways in which people's *intuitive physics* departs from physicists' theories, *even among the physicists themselves* (McCloskey, 1983). Even physics teachers make errors about factors that influence how fast a wheel rolls down a hill or in predicting the trajectory of a ball shooting out of a curved tube (Proffitt and Kaiser, 2006). That's because doing theory-based calculations requires slow, reflective thinking. Processing physical theory is not *intuitive*. So here is one paradigm to which religious representation-discrepant behavior might be compared: the physicist who doesn't act on her theoretical physical beliefs outside of academic settings *because those theories aren't intuitive*.

Several bodies of evidence suggest that ideas about the supernatural are ripe for intuitive processing. First, research shows that analytic thinking styles and analytic priming are associated with lower measures of professed religious "belief," while intuitive thinkers and intuitive thinking are positively correlated with religious thought (Gervais and Norenzayan, 2012; Pennycook, 2014; Shenhav, Rand, and Greene, 2011). Second, representations of divinities—both in the lab and in the field—have been shown to be *minimally* counterintuitive; this means that the idea of a supernatural agent typically activates the default inference patterns that accompany the idea of a *person*, with only a *small number* of intuitive violations, like that the agent is able to know all strategic social information (Boyer, 2001; Atran and Norenzayan, 2004a). Logically, the flipside of being "minimally" counterintuitive is being *mostly intuitive*. Third, there is an important distinction between intuitive religious beliefs and theologically correct ones; the *intuitive* ones are those that play the larger role in how people think and pray (Barrett, 1999; Barrett, 2001). In short, *contra* Levy, intuitiveness is a hallmark of religious representation, at least when it comes to popular religious ideas, as opposed to esoteric theology. And it is not just theological doctrines that are practical setting dependent; intuitive ideas like *God is watching* also do not guide behavior in all settings, as my introductory examples show.

Let's return to the Moroccan shopkeepers Duhaime investigates. How would Levy explain their giving so much more to charity when the call to prayer is sounding than when it isn't? Levy has to say that when they hear the call, that suddenly makes their representations of *God is watching* more "fluent" and hence more "intuitive." When the call is not sounding, such representations return to being disfluent and unintuitive. But it is not so: the fact that the call to prayer triggers such representations so *easily* makes it much more likely that those representations were intuitive all along, though just not active in guiding behavior outside the short-lived religious setting.[5]

The same point goes for the other examples of religious representation-discrepant behavior. Young Earth Creationism does not become disfluent or unintuitive, just because one is in a scientific setting, as Levy would admit (111), but for many it is compartmentalized nonetheless[6]. The "belief" that the ancestors can still think is not unintuitive in any setting, as Levy seems to grant (note "the persistence of dualistic intuitions" on his p. 113), but that "belief" is practical setting dependent nonetheless, as Harris and colleagues show. And the idea that *God views pornography as sinful* is just as intuitive Monday through Saturday as it is Sunday, though it typically governs behavior only on the Sabbath. Lack of intuitiveness is not a plausible explanation for any of these phenomena to begin with, and it is even less so in light of the empirical research mentioned in this section.

There is a further structural problem with Levy's theory. As Alter and Oppenheimer (2009) characterize it, disfluency is a metacognitive experience that tends to influence people to judge some information as less true and to engage analytic processing (among other things).

[5] Daniel Oppenheimer (personal communication), whose work on fluency Levy extensively cites, informs me that he does not find it plausible that disfluency would set in in such a short period of time.

[6] Keep in mind that our task is to explain the cases in which it *is* compartmentalized, not the cases in which it isn't (if such cases are ever fully genuine, as opposed to elaborate pretense).

Thus, if religious representations are processed disfluently outside of certain contexts, as Levy maintains, then their introduction should trigger analytic processing. But that is just not what happens; introducing religious representations into a situation easily *primes* religious thought, as Shariff and colleagues show (in my terms, it activates the religious practical setting). And the literature on the relation between religious belief and analytic cognitive style suggests that religious belief is associated with intuitive thinking *as opposed to* analytic thinking (Pennycook, 2014). So while Levy's view—in conjunction with background facts about disfluency—predicts that introducing religious concepts into an otherwise non-religious situation will trigger analytic processing (because of disfluency), this appears to be precisely the opposite of what happens.[7]

In sum, Levy's approach to explaining religious representation-discrepant behavior is not promising. It is true that theological doctrines are unintuitive. But maintaining that culturally popular religious "beliefs" are unintuitive (1) doesn't cohere with well-established data, (2) doesn't explain the examples it should explain, and (3) makes a prediction we already have reason to think is not true. In short, the *physicist* who doesn't always use her theoretical beliefs is not a good paradigm for explaining religious believers whose "beliefs" are often compartmentalized.

2. What Are Factual Beliefs?

In section 2 of my (2014) paper, I characterize mental states I call "factual beliefs." Three points about that discussion are relevant here. First, "factual belief" for me is a *term of art* that refers to mental states that have the features my theory describes (practical setting *in*dependence, widespread cognitive governance, and evidential vulnerability). Second, the empirical evidence and commonsense examples I cite support the *existence claim* that a wide range of mental states fits my definition of "factual belief." *Most* such mental states have relatively mundane contents, like *my house has two outside doors* or *dogs have teeth*, though in principle any descriptive content *can* be the content of a factual belief, since attitude and content are independent. Content is *heuristic* of attitude type, but no more.[8] Third, my theory draws a crucial distinction between factual beliefs and other cognitive attitudes, like fictional imaginings, hypotheses, assumptions for the sake of argument, etc., which I call *secondary cognitive attitudes* and which lack the defining properties of factual belief.

Thus, when I argue that religious credences are not factual beliefs—they are secondary cognitive attitudes—what that means is this: a great many religious cognitive attitudes *exist* that lack the properties of factual belief *as my theory describes them*. This is interesting because the differences between religious credence and factual belief *parallel* the differences between, say, fictional imagining and factual belief (though credences have additional distinctive properties as well). That possibility is theoretically exciting, because it implies that research strategies that apply to the psychology of imagining and make-believe can carry over to religious thought and practice.

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[7] Daniel Oppenheimer (personal communication) helped me clarify this point.

[8] This has always been my perspective. That's why Levy's claims about lack of correlation are misleading. I never claimed correlations between content and context dependence in any statistical sense. Rather, I used contents to gesture at classes of attitudes that were worth characterizing theoretically, and then I characterized them. Once the theory is in place and the notions are defined, finding *correlations* becomes a matter of collecting relevant statistical data, which Levy hasn't done in any case.

Levy does not recognize these crucial points. When he writes that "practical setting dependence occurs with a range of factual beliefs," he is either not talking about *factual beliefs* in my defined sense, misconstruing what practical setting dependence is, or both. So when he attempts to undermine my distinction by claiming that many "factual beliefs" exhibit "shifting" in the same way that religious attitudes do, his argument misses the mark.[9]

Furthermore, many examples he gives of "factual beliefs" do not have the sorts of contents that are heuristic for factual belief (in my sense) in the first place.

On my view, people are apt to factually believe things like *I have two dogs*, *dogs like meat*, *the vet charges money for service*, *the vet has an office near my house*, *the monthly mortgage on my house is* n *dollars*, *I have* n + 200 *dollars in the bank*, *the currency in the USA is the dollar*, *there are fifty States in the USA*, and so on. Such factual beliefs are so ordinary that we hardly notice them, except when we update them (e.g., *I only have* n - 200 *dollars in the bank*!). Factual beliefs constitute the "default cognitive background" of practical reasoning and planning, as Bratman (1992) would put it. In other words, they are the mundane map of how we take things to be in the constant background of reasoning and action.

Levy's examples of "factual beliefs" that are intended to put pressure on my view do not have this default character. Believing that "the task was dull" (112) is unlikely to be a factual belief in my sense, because the content is partly *evaluative* (the same goes for Levy's other cognitive dissonance examples). Believing that one is unlikely to "buy a ferret or a gibbon or some other kind of pet" (112) is a dubious example of a factual belief, because it is largely an *estimate* of one's future behavior based on *preferences*. And preferring to bet on an even numbered roll on a fair die to betting on 1, 4, or 6 (112) is also not a factual belief, since it is a preference—one that is relatively opaque. Better examples of factual beliefs in these domains would have contents like *I completed a task*, *ferrets are animals*, or *a die has six sides*. The differences are clear: these factual beliefs are so obvious that one scarcely notices them, yet they feed into inference and practical reasoning generally and are available for use (when relevant) across practical settings, unlike religious credences *and* unlike the dubious examples of "factual beliefs" that Levy uses in attempting to put pressure on my theory.

In sum, when Levy argues that religious beliefs and factual beliefs are (or can be) similar in terms of their "lability," he appeals to examples that my theory does not count as factual beliefs.[10] So neither the logic of his argument nor his examples undermine my distinction between religious credence and factual belief.

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[9] I make it quite clear that many "beliefs" that might be called "factual" in a loose, pre-theoretic way won't fall into my theoretically clarified category of *factual belief* (706). Here is the crucial passage: "Many other 'beliefs' face a similar treatment. In these cases, the cognitive scientist using my framework owes us two things: first, evidence that those states in fact lack the functional properties of factual beliefs, or if they lack only some, evidence of which ones they lack; second, an empirically motivated theory of the characteristic features special to them. It would be impossible in one article to complete these two tasks for every "belief" that is not a factual belief. There are too many candidates: political beliefs, theoretical beliefs, metaphysical beliefs, etc., all of which must be addressed in due course. But we must start somewhere. I start with religious credence." From this perspective, Levy has just found some other so-called "beliefs" that are not factual beliefs in the relevant sense.

[10] Things are slightly different in Levy's section in which he disputes the evidential vulnerability of factual beliefs. There, he appeals to examples that plausibly *are* factual beliefs, but it is less convincing that those examples lack evidential vulnerability, since they do in fact comport with the body of evidence to which the agent selectively

3. Future Directions

Let's consider how sections 1 and 2 of this paper relate. In response to the points I just made in section 2, Levy might respond that he has a better way of explaining the data that are of mutual interest, and in light of that better way, the notion of factual belief *should* be reconceived in a way that makes sense of his statements. On Levy's view, there is one broad kind of descriptive belief that encompasses religious and factual belief alike, and "shifting" and "lability" are explained by disfluency and un-intuitiveness across the board; he is aiming for explanatory unity (Friedman, 1974). We saw in section 1, however, that Levy does *not* have a promising way of explaining much data it should explain. It thus makes sense to look to *attitude type* to explain what needs to be explained. This approach locates the unity in a different place: religious credence falls in with the class of secondary cognitive attitudes.

Here is my paradigm for thinking about religious representation-discrepant behavior: the playground (not the physicist). In make-believe play—on the *playground*, so to speak—a child might give you a red block when you ask for a cookie, because she *imagines* as part of play that red blocks are cookies. But if you are not in that make-believe practical setting, asking for a cookie won't get the child to give you a red block, even if she had just recently been representing them as such; she would be more apt to give you an *actual* cookie instead (Harris, 2000: Ch. 2; cf. Walton 1990: Part I). This is because fictional imagining, as I call it, is an *attitude* that guides behavior in make-believe settings/episodes but typically not otherwise. This feature of imagining, *practical setting dependence*, persists in adults. Say you're on an airplane and happen to be daydreaming you're a doctor; if there's an announcement on the PA that a doctor is needed, your imagining won't get you to go up front (even though it has content relevant to the announcement), because fictional imaginings guide behaviors in make-believe play settings but *not* in all settings. Fictional imaginings are *practical setting dependent*—they depend on the playground or play setting (cf. Huizinga, 1955). Religious credences have a similar property—though it's tied to religious and identity-testing situations, as opposed to make-believe play—and this explains much religious representation-discrepant behavior: religious credences tend to turn off for purposes of guiding action outside their characteristic setting, just like we saw with the Moroccan shopkeepers, the Vezo and their ancestors, the once-a-week Christians, and the Creationist geologist.

Though this view may appear radical, it is not implausible when considered in relation to extant findings. Luhrmann (2012), for example, finds that many evangelical Christians explicitly play make-believe games in order to make God "feel real." My view is that much of the psychological structure that supports make-believe play—in particular, the capacity to have secondary cognitive attitudes—underlies a much broader range of religious life than that, even though religious "believers" may not be conscious (and often are not conscious) that this is what's going on.

What testable predictions does my framework offer? Here are three.

First, "playground" situations, where *sacred spaces and times* activate religious representations, which tend to fall into disuse otherwise, are apt to be widespread features of religious life (shrines, temples, prayer times, religious holidays, etc.). The extent to which such

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attends. See Kunda (1990) and Van Leeuwen (2008) for discussions of how belief and evidence relate in motivated reasoning.

phenomena exist will tend to support or disconfirm my view that many religious "beliefs" are practical setting dependent. This may sound trivial, but note that this focus makes available an empirical way to help decide between my view and Levy's: my view clearly makes this prediction, while nothing about Levy's view does. For him, failure to act on religious "beliefs" results from processing difficulty. For me, it results from not being in the right setting, and furthermore, that fact that people design physical spaces and choose special times to worship is implicit acknowledgement that the phenomenon of practical setting dependence exists.

Second, my view predicts that, since religious credence and factual belief are separate, people typically won't get *confused* between the actual physical nature of religious props/artifacts and the supernatural identities that religious credences assign them. For example, while professing that they are receiving "the body" of Christ, Catholics will not behave as if they anticipate ingesting an actual piece of human flesh.[11] More generally, religious people won't lose track of the physical identities of the statues they pray before, and people who sacrifice to deceased ancestors won't expect them to show up and eat the meat that they, according to religious credences, desire. In short, we can expect religious people to have a two-map cognitive structure, where the factual belief map keeps track of ordinary facts and the religious credence map represents another layer of assigned identities. The same sorts of evidence that shows that children do not confuse make-believe identities with real ones (Golumb and Kuersten, 1996; Taylor, 1999; Weisberg, 2013) can, *mutatis mutandis*, also support the view that religious credences are not confused with factual beliefs. Data collection in the latter case will be trickier, since religious people, when aware their beliefs are being probed, often feel compelled to re-assert their credence. But suitable methods can be devised to work around this task demand. Note that Levy's view does *not* make the prediction of non-confusion; if anything, his view predicts there *should* be confusion, since religious and factual beliefs are all of a piece, so data relevant to that prediction can help distinguish our views.

Third, it should eventually be possible to find neural signatures that distinguish religious credences from factual beliefs. There are already some pertinent data; Fondevila *et al.* (2015) present ERP data to the effect that neural processing of sentences about the supernatural (that is, minimally counterintuitive entities) resembles neural processing of metaphorical language, as opposed to literal. That finding is suggestive of my view, but far more evidence is desirable.[12]

It is in principle possible that in all three cases, or some of them, the predicted results won't materialize. Hence my view is empirically vulnerable, contrary to what some have suggested (Boudry and Coyne, 2016; cf. Van Leeuwen, 2016). But as we know, empirical vulnerability is a scientific virtue. Levy hasn't shown my view to be wrong. But data could. I look forward to finding out.

I'd like to thank Neil Levy for this stimulating exchange of ideas.

[11] Some people respond in conversation to this kind of example by noting that Catholics distinguish substance and accident. But such a distinction can't explain why *most* Catholics who profess transubstantiation don't expect actual flesh (as opposed to a wafer), since most Catholics are unaware of the Thomistic distinction in question. If one isn't aware of a distinction, that distinction can't explain one's thought or behavior.

[12] Harris *et al.* (2009) offer a different perspective. I hold, however, that their interpretation of their own data is highly tendentious.

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