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Seeking the supernatural: responses to commentary

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We would like to thank all commentators for their thoughtful and informative remarks. We found much to agree with and appreciate the constructive criticism. As one would expect, however, we don't think all criticisms hit their mark. So here we mostly respond to criticisms we thought were in error, though we also highlight several points of agreement.

Since some criticisms overlapped and others struck us as particularly important, we address four major concerns, after which we address several issues (not all of them critical) that were less “big picture” but still significant. The four major concerns, in order, are the general/personal distinction, avoidance of malevolent supernatural beings, the relation between IREM and Barrett and Lanman's (2008) model, and the ultimate origins of religious belief.

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I. Can the distinction between general and personal religious belief be made to work?

Some of the commentaries suggest that the distinction between general and personal beliefs, which is at the heart of IREM, either needs clarification or cannot be made in a principled way.

So we argue here for two points:

- (1) The distinction between general and personal religious beliefs can be formulated and extended in a clear and consistent way that addresses the concerns of McKay et al.
- (2) Each of Fortier's critiques of that distinction *either* says something true that is not actually a problem for us *or* rests on an incorrect interpretation of our view. (To preview, Fortier's (i) says something true but compatible with everything we say, while his (ii) through (iv) rest on assuming false dichotomies that we reject and always have.)

If we are right that the attempted critiques fail, then that is further reason to think the distinction between general religious beliefs and personal religious beliefs is good and can be incorporated into mainstream psychological theory and experimentation.

Let us start with (1). McKay et al. point out – rightly – that any given belief with an indexical constituent (like *I* or *me*) could be arrived at via various routes. And importantly, one route to beliefs with indexical constituents is through logical inference from other beliefs. So if one believes that Jesus loves everyone, one could arrive at the belief that Jesus loves *me* simply by performing a logical inference from the general belief. It is easy to come up with other examples, of course, because (and this is a simple logical point) for any given belief with an indexical constituent, one can imagine some possible general belief from which it might have been derived. So even one's belief that, say, Jesus visited *me* in the hospital in principle could have been derived from a general belief that Jesus visits everyone who is in a hospital.

But does that simple logical point undermine our general/personal distinction? Not at all. What it shows is that we have to look at more than just the content of a belief to decide whether or not, as a mental state, it counts as general or personal. In other words, knowing that a religious belief contains an indexical is not enough to secure its status as a personal belief, since if it was derived by logical reasoning from general beliefs it is not personal. However, we were clear about that all along; personal beliefs, in our sense, are a proper subset of indexical beliefs (otherwise put, not every indexical belief is personal).

So, to clarify our earlier point: personal religious beliefs are those that are about supernatural matters, have indexical constituents, and were not in fact derived purely logically from general beliefs. It matters not that – in point of logical principle – there might have been some more general belief from which an indexical belief with the same content could have been derived. It matters, for us, only whether or not this is what actually happened. If one's belief that Jesus visited *me* in the hospital did not in fact come from some logical reasoning on some general belief that Jesus visits *everyone* who is in the hospital (which seems a bizarre posit in any case), then the former belief counts as personal (and not otherwise). Now we grant that it may be hard work sometimes for researchers to figure out which indexical beliefs in the population at large were arrived at *via* which route, and hence it may be hard to figure out which indexical beliefs are in fact personal beliefs. But that is an epistemic point (research is hard!). Nothing about it undermines the conceptual coherence of our distinction, which we now take to be clarified. An important indicator of personal belief, in any case, is simply lack of general beliefs from which the belief in question could have been derived. So if one believes *that Jesus cured my cancer* and does not also believe that *Jesus cures everyone's cancer* (and also lacks other general beliefs from which the former could have been derived), then the former belief is personal.¹

Now let us turn to (2). Fortier has a cluster of four criticisms that he thinks problematizes our use of John Perry's philosophy of indexicals in formulating our general/personal distinction. In his

section 1, he labels his criticisms (i) through (iv) and sees them as responding to four points that he assumes characterize our view of personal belief. Let us consider his criticisms in turn.

Fortier points out (i) that many personal experiences, like dreams, also convey general/non-indexical information. That is true. But it is not a problem for us, since nothing we say implies otherwise. In fact, any individual acquisition of information of a general sort will occur through first-personal experiences, and that is because first-personal experiences, at the end of the day, are the only way a given individual has to receive information. Seeing pages of a book is a first-personal experience. Seeing figures talking on a television is a first-personal experience. Hearing a lecture is a first-personal experience. One of us (Neil) learned the Pythagorean Theorem from his freshman math teacher through his individual visual experience of seeing her write it on the chalkboard. So this episode gave rise to a (non-religious) general belief and a (non-religious) personal belief, the former being about right triangles and the latter being about his experience of seeing his teacher writing. But the fact that an individual's experiences can convey more than one kind of information – and hence in principle give rise to more than one kind of belief (general or personal) – does not undermine the legitimacy or clarity of the distinction between general and personal beliefs.

To turn to the other criticisms, Fortier's (ii) through (iv) all rest on a series of false dichotomies that he assumes apply to our views in his interpretive points (ii) through (iv). He assumes we think (ii) that personal beliefs are based on private “rather than” public experiences; (iii) that they are intuitive “as opposed to” reflective; and (iv) that they are grounded in first-personal experience “rather than” deference. But we endorse none of these false dichotomies as characterizations of personal belief. We have been clear all along that personal beliefs have multiple aspects, so some aspects of any given personal belief will come from one side of one of Fortier's dichotomies, while other aspects will come from the other. There is no logical difficulty in saying this. To (ii): our appeal to the Azande Poison Oracle, which is a public event, shows we grant that some events in the etiology of personal beliefs can be public (see Evans-Pritchard, 1937). To (iii): we have also been at pains to emphasize that part of the etiology of personal beliefs is reflective, deriving from general cultural learning, while another part of their etiology is likely to be due to an environment's triggering of intuitive systems. So intuitive “as opposed to” reflective is a mischaracterization of our view of the etiology of personal beliefs. To (iv): a big part of the point of our article is to achieve more nuance in terms of tracking which components of a given personal belief come from experience and which come from deference, on the assumption that any given belief will have elements of both. In sum, Fortier's examples that defy the false dichotomies he attempts to foist on us only give us further reason not to accept those false dichotomies, which we never accepted in the first place. Our reliance on John Perry's work may be “more confusing than helpful” – but only if one approaches our article armed with dichotomous assumptions that we ourselves never make.

II. What about instances where people avoid experiences of the (malevolent) supernatural, rather than seeking them?

Several authors note that our discussion focuses on examples in which religious believers actively seek agency-intuitions that can be interpreted in supernatural terms. However, as Andersen and Fortier point out, in many cases believers seem motivated to avoid experiencing encounters with supernatural entities, especially in the case of malevolent deities, evil spirits, etc. Can IREM account for the fact that in many religions believers are advised to avoid contact with malevolent spirits and entities? And if so, how does our model cohere with that fact?

We first note that (almost paradoxically) many believers actually do show a motivated tendency to seek personal experiences not only of supernatural entities in general, but also of potentially threatening, scary, and evil spirits in particular. We list three prominent examples below before discussing the potential origins of this tendency to seek out morbid encounters with supernatural entities.

One of us (Michiel) grew up in a Pentecostal church in which many people testified about their encounters with demons taking possession of people and causing mental illness, addiction, and adultery. As a consequence, people in the church were advised to avoid those places in which demons were supposed to be prevalent, such as nightclubs, spiritist sessions, and alternative healing practices. So, at first sight, it indeed seems that in some cases the believers in such churches do try to avoid encounters with malevolent supernatural entities. However, at the same time, exorcism is a ritual that is widely practiced in many Pentecostal churches to “cast out demons,” and it illustrates how believers are viscerally reminded of the evil side of the supernatural realm. With several people from the church, we would visit psychic fairs – the lion’s den in terms of expected numbers of demons around – to offer advice and prayer for the visitors. Around Walpurgis Night, during which members of Satan’s church would gather to cast spells on Christian families, we would convene for prayer nights to ask God to guard our homes with angels. At the heart of all these cases are experiences that got interpreted as lively encounters between good and evil supernatural forces. These experiences, contrary to some of the rhetoric around them, were actively sought and formed the basis for many personal beliefs, as described by IREM.

Frank Perretti, a celebrated Christian author, even wrote several novels that figured a Lord of the Rings-like confrontation between “good” and “evil” supernatural forces. He presents a view of everyday reality that is steered and ruled by the continuous battle between invisible angels and demons that exert a powerful effect on our behavior. For instance, a demon lurking behind the curtains of my bedroom could cause me to have a nightmare, which in turn could cause me to hurt my wife, exemplifying the disastrous effects that evil spirits can exert on our lives. Protection against these evil experiences lies in prayer and faith in Jesus as Lord and savior. But importantly, reading Perretti’s novels is a way for believers to seek out the kinds of vivid experiences (often triggered by elaborate mental imagery) around which they can wrap personal beliefs.

In the US around Halloween several churches set up “hell houses,” a specific kind of haunted house that reminds believers of the consequences of a secular lifestyle. These houses typically depict sinful actions and their consequences, portraying tormented sinners in hell, and they remind believers of the perpetual presence of demons around us. The final room of a hell house typically contrasts with the preceding exhibition, by presenting a view of heaven, and a visit usually ends with a prayer of repentance. Hell houses, in short, cause visceral, low-level experiences that can be interpreted in terms of personal beliefs (for more on hell houses, see Jackson, 2009, pp. 37–39).

All these examples show that – while people often avoid direct experiences that would be interpreted as evil spirits, etc. – many believers still seek vivid experiences to remind them of what such encounters would be like. Where does this motivated tendency come from? Of course we could refer to the platitude that “without darkness there is no light.” On this interpretation, personal experiences as if of malevolent deities are sought because they contrast with encounters with good entities. There is something, we grant, to that interpretation. But at a deeper level, these practices reveal a deeper motivated tendency for morbid curiosity. Psychologists have established that people have a strong tendency for obtaining more information about negative and threatening events (e.g., Oosterwijk, 2017; Wilson, 2012). Whenever a car accident happens, on the other side of the road a traffic jam develops because of drivers who stare at the car wrecks. When given the opportunity to choose between viewing morbid pictures of corpses, incidents, and diseases or viewing neutral pictures, many participants prefer to look at the negative pictures, despite the initial disgust that these pictures elicit (Oosterwijk, 2017). Our morbid curiosity is explained by evolutionary psychologists as follows: being compelled to view horrible things pays off, since scrutinizing dangers that could threaten one’s survival will be beneficial in the long run. Hell houses and novels describing demonic battles most likely also tap into believers’ morbid curiosity to learn more about the “dark side.” These experiences recruit the same socio-cognitive biases that play a role in positive encounters with the supernatural.

Another reason believers may seek active encounters with malevolent deities may be found in the literature on the potentially adaptive functions of religion in fostering social cohesion (e.g.,

Norenzayan et al., 2016). According to the supernatural punishment hypothesis, the belief in powerful moralizing gods who continuously watch our behavior fostered the emergence of city-states and provided a solution to the free-rider problem. Of course, being reminded of encounters with the potential adverse consequences of one's lifestyle (e.g., through hell houses, by reading about demons, etc.) offers an effective means for establishing moral conduct. Thus, religious communities may even encourage believers to seek experiences that remind them of malevolent deities. And ironically, acting out apparent avoidance routines – running away, shrieking, exorcising – can actually be ways of triggering low-level experiences that can be interpreted, in light of general beliefs, as the presence of the malevolent supernatural entities.

III. Is IREM really at odds with (or that different from) Barrett and Lanman (2008)?

Several authors point out that IREM has many features in common with the theoretical model proposed by Barrett and Lanman (2008), who also acknowledge the bidirectional association between religious beliefs and agency detection experiences. We readily acknowledge the points of correspondence between their version of HADD Theory and IREM, but we argue that our model makes two major advances in comparison to the Barrett and Lanman (2008) account. First, we propose a central distinction between general and personal religious beliefs. This distinction allows us to understand why it is that so many religious people across the world go to great effort to have compelling agency experiences, as these experiences allow them to develop significant personal religious beliefs (even though those experiences might not be crucial to their acquisition of general beliefs). Second, we propose a more *active* account of how people come to have agency-intuitions. Rather than being something that only passively occurs (e.g., suddenly hearing a rustling sound in a forest), we argue that much of the time religious believers actively seek out situations that trigger their agency detection capacities. This view, though not denied, is missing in Barrett and Lanman (2008). We argue that this active view on the role of agency detection in the forming of religious beliefs does more justice to the available data and anthropological record.

IV. What about the ultimate origins of general religious beliefs? Culture cannot explain that!

Boudry points out, as do we, that IREM is in the first instance a model of the proximate causes (historically speaking) of religious beliefs. That is, we are not trying to say how religions originated in human pre-history or history; rather, we present IREM as a model suitable to explaining how most individuals over the course of their lifetimes acquire general or personal religious beliefs, given that various religions already exist. Boudry, noting that we appeal to cultural processes as causes of most general religious beliefs, points out – rightly – that a regress would threaten if we were to apply this strategy in all (pre-)historical cases of widespread cultural beliefs. General religious beliefs had to get their start somewhere, so perhaps a more traditional HADD Theory, though not suitable to explain proximate causation of most general beliefs, could do some serious work in explaining ultimate origins.

Our response is that it may be so, but we advise caution. In other words, it may well be that, as religious ideation was getting started at various points in human pre-history and history, what we would call HADC and corresponding agency-intuitions played a large role in getting ideas about supernatural agents into existence – and hence that they did a lot to get initial general religious beliefs up and running. This line of reasoning is coherent and has some plausibility. However, caution is still advisable when it comes to using HADD Theory (or a suitably modified version of it) as an ultimate explanation of general religious belief.

First, as Evans-Pritchard (1965) repeatedly emphasizes, theories of the origins of religion are invariably difficult to find evidence for, so we may be relegated to speculation indefinitely when it comes to origins. Furthermore, there is probably a great deal of variability, and one of the delicious

things about Evans-Pritchard's book is watching grand theories of the origins of religion get roasted on a bed of coals comprised of individual counterexamples. HADD Theory, as a theory of origins, could face a similar fate, once that view is more fully fleshed out. Boudry could, of course, take a more modest route and suggest HADD Theory as a theory of the origins of this or that religion. But we would have to see the details worked out in relation to a known religion, which brings us to our second point.

Second, when it comes to known, historical religions, the origins of general beliefs are considerably more complex than traditional HADD Theory would suggest. Taves (2016), for example, presents a well-documented and fascinating portrait of the origins of Mormonism, by which we are convinced. On her portrayal, the record indeed suggests Joseph Smith had extraordinary experiences ("revelatory events") that seemed like encounters with supernatural agents, but he appears to have been at first unsure how to interpret them on his own. It was only after encouragement and feedback from people like his father that he even went ahead with trying to develop and make sense of his various visions. Furthermore, the official contents of those visions – as would be documented and passed down – was worked out and elaborated upon by a small group of collaborators; Smith was one voice among several, albeit the most important, and various social pressures fed into how the visions came to be subsequently described in official church texts. Furthermore, a number of elements were borrowed in this process from other forms of Christianity. Taves gives structurally similar descriptions of the small-group origins of both Alcoholics Anonymous (which is in many ways a religious movement) and A Course in Miracles (which certainly is). All that is by way of saying (1) that agency-intuitions massively underdetermine what even the earliest general religious beliefs turn out to be and (2) that social processes, including incorporation of pre-existing cultural elements (religious or not), play important roles in transitioning from initially nebulous (though intense) agency-intuitions to more determinate general beliefs about the supernatural. Nothing Boudry says explicitly contradicts this, but we think it is important to paint a more holistic picture.

Third, in light of all this, it is probably better to think of HADC and the human propensity toward agency-intuitions as *facilitators* of general beliefs about supernatural entities rather than as *sources* of such beliefs. This, of course, is not a hard distinction, because a facilitator could just as easily be counted as one "source" among several; terminology varies. However, thinking along the lines we presently suggest will help future scholars avoid overly simple portraits of the causes of general beliefs – both proximate causes and ultimate ones.

Some other concerns raised by our commentators are closely related to this one, since they deal with the relation between low-level biases and general beliefs.

The third point just made speaks to Andersen's claim that socio-cognitive biases do not only come into play when generating personal religious beliefs but are involved in general religious beliefs as well. Andersen points out that people have anthropomorphic god concepts and show an egocentric bias when thinking about what God could see or not see (which seems to fall under the heading of general belief). We hope that we have made it clear that this is perfectly compatible with IREM, but it is compatible in a way that fits with the caution just called for: socio-cognitive biases facilitate (as opposed to being direct sources of) certain general religious beliefs – which likely explains the fact that supernatural agents across time and cultures typically share similar features, while still having wide differences.

Another related point concerns the origins of paranormal beliefs. As Boudry notes, if there were a strong relation between agency-intuitions and general supernatural beliefs, it would likely be found in paranormal believers. Paranormal beliefs are highly idiosyncratic and often related to agency experiences (e.g., seeing auras, contacting ancestor spirits, feeling a spiritual energy course through one's body). Indeed, many paranormal believers report that their interest in paranormal phenomena started with an extraordinary experience (e.g., seeing the television set turning off while calling the name of a previous deceased inhabitant; van Elk, 2017). In these cases, there might be a more direct causal arrow from agency-intuitions to personalized paranormal beliefs (e.g., that the spirit of an ancestor visited *me*) and from there to more general paranormal beliefs. Boudry notes that often the cultural inputs into general paranormal beliefs are quite minimal – as little as a single word,

like “telepathy” – so it makes sense that the influence of low-level experiences should be correspondingly higher. We do not think, however, that this is a problem with IREM. In fact, Boudry’s point allows us to use IREM to generate a further interesting hypothesis: when extraordinary agency-intuitions are not interpreted in light of general antecedent (culturally widespread) religious beliefs, then they are more likely to give rise to general paranormal beliefs (after generating personal paranormal beliefs first). We leave exploring this hypothesis to future work.

Also on the topic of general beliefs, Shtulman proposes a way that agency-intuitions might be involved in determining which general religious beliefs a given person holds, even if they are not the original source of the contents of those beliefs. General beliefs A and B might be prevalent in a person’s surrounding culture (say A and B are competing conceptions of God), but if that person’s HADC-based low-level experiences comport better with B, she might adopt B over A (B might be a conception of God as having a body; A might be a more abstract, bodiless conception of God). We like this suggestion and think it coheres nicely with our framework, as it still grants cultural influence pride of place in supplying what general beliefs reach an individual for consideration in the first place. Indeed – to take the point one step further – different socio-cognitive biases might help select different general religious beliefs, and the strength and prevalence of specific biases may even predict the cultural prevalence of certain types of supernatural agent beliefs. So, though it seems not to be the case that strength of agency detection predicts whether or not one is a religious believer at all, it may still be that strength of agency detection plays a role in predicting precisely which general beliefs one ends up having (more or less robustly embodied god representations, for example). We heartily endorse pursuing this line of research further, along with Shtulman’s specific suggestion that agency-intuitions may increase the likelihood that people will believe that supernatural agents have bodies, which we agree merits empirical investigation.

Lanman discusses several examples of new VR technologies that can be used to directly foster agency experiences, e.g., as in gaming, online meetings, virtual worlds, etc. These add to the examples we had in mind when discussing the experiences that people may seek in order to develop personal beliefs. This shows how our model could lead to fruitful predictions about how believers – now or in the near future – could turn to these technologies. For instance, in the van Elk lab, we currently use a VR haunted forest to give people an authentic “feeling-of-a-presence” experience, and one of our aims is to identify whether religious believers more readily have such experiences and attribute these virtual agency encounters a special significance. The development of VR devotional technologies will likely provide an important avenue for testing and elaborating on IREM.

In what follows, we address sundry concerns that we find interesting.

Fortier notes that in some cases people have experiences that violate their prevalent general religious beliefs. We certainly grant this possibility, since we never proposed that *all* agency experiences comport with pre-existing general beliefs. We do, however, predict that agency experiences that are consistent with one’s prior beliefs will turn out to be more common. And there are two important reasons for this. First, general religious beliefs are often vague enough that they could be regarded as cohering with any number of low-level intuitions. Second, agency-intuitions (and other low-level experiences) typically have very sparse contents (*agent over there!*),² which means they do not supply enough detailed information to specifically contradict an antecedently held religious doctrine. Nevertheless, it could be that in some cases HADC experiences strike the person having them as deviating from her existing general beliefs. This is most likely to occur in suggestive environments that recruit HADC, such as an unfamiliar context that is highly unpredictable. Thus, an unusual environment *plus* agency-intuitions may constitute a challenge to previously held general religious beliefs. Here, however, general beliefs about the environment are likely to be relevant *too* (since the agency-intuition is informationally sparse), which is just the sort of thing IREM is designed to explain.

McKay et al. suggest that IREM could be generalized to other, non-religious belief formation processes. We welcome this suggestion in general, since (for example) political ideologies are sets of

general beliefs that seem to stand in need of personal application and they often revolve around semi-deified political figures. It is important, of course, not to apply the model *too* broadly, since that would tend to make it too diffuse to explain anything. So what features might a domain have that would make it a likely candidate for IREM? We suggest that domains with the following combination of features will often involve beliefs that are susceptible to explanation by IREM: (1) the domain concerns entities or events that were enough of an adaptive problem in the past that our ancestors evolved intuitive systems for dealing with them (e.g., contagion detection, sexual interest detection, agent detection, etc.), (2) at least some of the entities or events that fall in the domain are often difficult to detect via the ordinary senses (like pathogens or agents that tend to hide themselves), and (3) having personal beliefs concerning the domain is (for whatever reason) socially desirable. This combination of features helps explain why individuals and groups might craft environments that can cause intuitions that can be interpreted in light of general beliefs as indications of entities that are not currently visible, as IREM suggests. McKay et al. also suggest specifically that IREM might explain how human male tendencies to over-detect female sexual interest could be folded into personal beliefs about female desires. To their point, it is consistent with IREM to think of strip clubs or brothels as environments that supply low-level experiences that link sexist ideology (general sexist beliefs about women) to personal beliefs about females that comport with that sexist ideology. That is, the social function of such crafted environments outstrips the mere provision of pleasure; they also provide opportunities for males to form personal beliefs that comport with their sexist ideologies. We find this suggestion plausible, and we are glad that IREM might bear further theoretical fruits in this manner. We confess, however, that on this particular point we are outside our own domain of expertise, so we defer to McKay et al.'s greater knowledge.

Finally, we turn to Shults's wonderful suggestion that IREM could be a framework for developing a computer simulation of the dynamics of individuals and groups seeking the supernatural, which would combine modeling of agents' low-level socio-cognitive biases with goals that emerge in light of their background general beliefs. We admire the suggested methodology and think IREM would work well in it, as far as we understand it. We only have one question. When shall we get started?

Notes

1. We suspect what tripped up McKay et al. on this issue was the word "couldn't" in the following passage: "Thus, a belief *that God loves everyone* would count as a general belief on our schema, since it lacks an indexical constituent (like *me*) and is only about any given person indirectly, by inference from the universal quantifier *everyone* ("whosoever" in John 3:16 is also a universal quantifier). By way of contrast, the belief *that God cured my cancer* is personal, because of the indexical *my* (and because it couldn't be derived by logic alone from general beliefs)." On one reading of that passage (not the one we intended), it sounds like we're saying that there is no *possible* general belief from which *God cured my cancer* could have been derived by logic alone. But that's clearly false. Rather, we meant that the contents of the personal belief couldn't be derived by logic alone from general beliefs *that the agent in question actually has*. It's the lack of derivability from general beliefs that the agent actually has that is the mark of personal belief and that gives us a phenomenon in need of explanation, where IREM, we think, is very often the correct model for giving such explanation.
2. For arguments in this direction, see McGahhey and Van Leeuwen (in press).

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