

When Explanations Fail: Science and Pseudoscience in Psychology

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Newman and Baumeister's target article is entertaining. Unfortunately, as a reasoned argument, it suffers from multiple flaws. Indeed, I argue that it promotes and tries to legitimize a pseudoscientific enterprise that is to the detriment of the field.

Science and Pseudoscience: Useful Versus Specious Post Hoc Interpretations

Newman and Baumeister review several accounts of unidentified flying object (UFO) abduction phenomena (including the hypothesis of actual abduction). They then construct their own argument and propose that it is more plausible than existing accounts. According to their account, UFO abduction stories are a consequence of false memories among fantasy-prone individuals motivated to escape from self-awareness.

To begin, note that the arguments constructed by Newman and Baumeister are no less post hoc than the arguments they attack: All were constructed to account for a particular phenomenon. Second, note that there are several post hoc elements to Newman and Baumeister's argument that can themselves be considered independent accounts of the phenomenon. According to one account, UFO abduction stories are false memories—accounts of events that did not take place but that have been incorporated in memory as actual events. The ultimate origin of such false memories is presumed to be existing accounts of UFO abductions. Given their external origin, I refer to this account as one of planted memories. According to a second account, UFO abduction stories are the result of overactive fantasies related to frontal-lobe abnormalities. Finally, according to a third account, UFO abduction stories are the result of a motivation to avoid painful self-awareness. Newman and Baumeister make clear that these three accounts are not mutually exclusive, but they are not identical either. It might well be that a complete account requires all three elements, and this is the position Newman and Baumeister take: False memories of UFO abductions occur among individuals high in fantasy proneness who are also motivated to escape from self-awareness.

Leaving aside arguments concerning actual abduction, a variety of accounts exist that include some elements of Newman and Baumeister's account. Indeed, by mixing and matching the three elements just outlined, seven accounts are possible. UFO abduction stories are a consequence of:

1. Planted memories.
2. Fantasy states.
3. Escape from self-awareness.
4. Planted memories and fantasy.
5. Planted memories and escape from self-awareness.
6. Fantasy and escape from self-awareness.
7. Planted memories, fantasy, and escape from self-awareness.¹

Newman and Baumeister offer a version of Account 7 from this list of seven accounts. With respect to accounts offered by others, Newman and Baumeister's account is unique in proposing that UFO abduction stories are motivated by a desire to escape from self-awareness.

By characterizing these arguments as post hoc, I do not mean that they are worthless; many post hoc interpretations ultimately prove worthwhile. Newman and Baumeister presume that such interpretations prove to be worthy as a consequence of their plausibility as accounts. I argue that post hoc interpretations prove to be worthy when they are empirically verified. The difference between plausibility and verifiability criteria constitutes the crux of the difference between pseudoscientific and scientific reasoning. The difficulty with the various UFO abduction accounts is that they are not empirically verifiable and hence can only be distinguished using pseudoscientific reasoning.

To illustrate this point, let me adopt Account 4: UFO abduction accounts are a consequence of planted memories and the tendency to experience fantasy states. It is obviously not possible to do experimental research (i.e., random assignment to condition) to distinguish this account from Newman and Baumeister's account. It is not possible to do quasi-experimental research on the topic (e.g., observation under different circumstances). It is not even possible to do most types of nonexperimental research on the topic (e.g., simple observation). Ultimately, Newman and Baumeister are forced to rely on a specific kind of nonexperimental research—content analyses of retrospective oral and written accounts.

Do content analyses to support post hoc accounts qualify as meaningful data that can be used to distin-

¹A universe of other post hoc interpretations exists that the authors do not consider—nonrepeating paranoid hallucinations, overactive ids, demonic possession, and so forth.

guish alternate hypotheses? Sometimes, but not in this case. Specifically, such analyses cannot distinguish a “planted memory and fantasy” account from a “planted memory, fantasy, and escape from self-awareness” account of these phenomena: Evidence argued to support a self-awareness escape motive can always be argued simply to be part of the planted memory (given that one has no control or measure of the memory that is being planted). Conversely, adoption of a planted memory can always be argued (circularly) to entail a motive to escape from self-awareness. In the extreme, it would appear that none of the offered interpretations of these stories is falsifiable (i.e., any report that does not include evidence for a particular mechanism can be dismissed as incomplete, contaminated by lying, or contaminated by psychopathology; see Newman & Baumeister’s own treatment of the reports for identifying masochistic themes).²

If Account 4 cannot be empirically distinguished from Newman and Baumeister’s account, then the difference between these accounts is meaningless as a scientific hypothesis (a case of “mutual equivalence”), and the unique aspect of Newman and Baumeister’s account (these stories are motivated by escape from self-awareness) is similarly meaningless. The ultimate consequence of this line of reasoning is that one must seriously question Newman and Baumeister’s use of a plausibility criterion in the absence of an ability to apply the criteria of empirical verifiability. In embracing plausibility in the absence of verifiability, Newman and Baumeister cross the line between science and pseudoscience.

Good Versus Bad Pseudoscience

Setting aside the criticism that Newman and Baumeister’s account is not empirically verifiable (and might well be nonfalsifiable and circular to boot) and hence qualifies as pseudoscience, one can still ask if it is good pseudoscience. It is not in three respects: Newman and Baumeister’s argument is not internally coherent, it is less parsimonious than existing accounts, and it lacks plausibility.

Internal Coherence and Argument by Analogy

Newman and Baumeister’s argument is not internally coherent. Thus, even if one assumes that the masochistic aspects of abduction stories are uniquely

significant as evidence of a motivated state (escape from self-awareness), to claim that this motivated state is identical to the one motivating masochistic acts represents flawed reasoning. To elaborate, Newman and Baumeister argue that the masochism evident in abduction stories is analogous to the masochism evident in descriptions of sex acts. But, one should not confuse memories and their respective motivations with acts and their respective motivations. Individuals engaging in masochistic sex might well be motivated to reduce their self-awareness in order to escape from self, and masochistic sex might be an effective way of reducing self-awareness. However, it does not follow that remembering masochistic sex is motivated to reduce self-awareness in order to escape from self and that the act of remembering such sex is an effective way of reducing self-awareness. The flaw in this logic is similar to arguing that (a) alcoholic intoxication reduces self-awareness and therefore (b) remembering being intoxicated reduces self-awareness. One does not follow from the other.

Parsimony

Earlier, I argued that the “planted memory and fantasy” account is empirically indistinguishable from the “planted memory, fantasy, and escape from self-awareness” account. Although empirically indistinguishable, these accounts are in fact different arguments and can be judged on a different criterion. Specifically, the former account is more parsimonious than the latter account and can be preferred on that basis.

Plausibility

Finally, I argue that Newman and Baumeister’s account is less plausible than a simple “planted memory and fantasy” account. Thus, if the motive for reporting UFO abductions involves masochistic escape from self-awareness, why do only a small minority of such reports include masochistic imagery? Of the 270 cases reported by Bullard (1987), only 84 (31%) appear to have involved a physical examination, 52 (19%) a genital display, 19 (7%) pain of any kind, and 7 (3%) what may be broadly interpreted as oral humiliation.³ Again, given that early accounts included a physical examination (e.g., Fuller, 1966), a simple planted-memory hypothesis would appear to provide

²As a second example of the nonfalsifiability of the Newman and Baumeister account, consider their proposal that the hypnotic state is an essential part of the planted-memory phenomenon. In this case, subjects who have not undergone hypnosis at the hands of a hypnotist are proposed to have experienced an automatic hypnotic state of which they are unaware. Such an argument cannot be falsified.

³Newman and Baumeister’s use of statistical significance tests on such data is fundamentally misguided. Putting aside the fact that the hypotheses were derived from inspection of the accounts (and therefore require post hoc adjustment for an unknown universe of other potential tests), a key assumption of all such tests is independence of observations. Given the planted memory hypothesis, the observations are *prima facie* not independent.

a better account of the reports. On a related issue, the planted-memory hypothesis could account for differential rates of reports in the West versus Asia and Africa without resorting to “individualism” and “burdens of selfhood” by pointing to differences in communication systems and exposure to abduction stories.

Summary and Conclusion

In sum, Newman and Baumeister’s account of UFO abduction stories is certainly not good science, and I argue that it is not even good pseudoscience. Their arguments are not empirically verifiable, border on nonfalsifiable and circular, are less parsimonious than earlier accounts, are not internally coherent, and are not even more plausible than other accounts. On the other

hand, they are entertaining and perhaps even more entertaining than existing accounts.

Notes

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Alleged Alien Abductions: False Memories, Hypnosis, and Fantasy Proneness

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Newman and Baumeister present a novel and thought-provoking account of the cognitive and motivational determinants of unidentified flying object (UFO) abduction stories. Their ideas are premised on the assumption that UFO abduction accounts are neither literally true, conscious fabrications nor a reflection of obvious psychopathology. To understand the dramatic and shocking aspects of UFO abduction stories, Newman and Baumeister first present a cognitive account of how false memories are produced with the aid of hypnosis and then provide a motivational explanation for the bizarre themes that sometimes run through prototypical abduction accounts. These themes are argued to contain sadomasochistic elements driven by the “desire to escape from ordinary self-awareness.”

We believe that Newman and Baumeister have identified several important determinants and aspects of UFO abduction reports (i.e., elaborations and integrations of hallucinations, general knowledge, and contextual cues). However, they present an unnecessary and exaggerated account of the role of hypnosis and fantasy

proneness. False memories can be created with or without hypnosis, and the role of hypnosis in their creation is likely to be quite small. Similarly, the available data suggest that the trait of fantasy proneness is not likely to be of great importance. Last, Newman and Baumeister underestimate the importance of cultural beliefs in accounting for stories with sadomasochistic themes.

Hypnosis and Memory

Newman and Baumeister are quite correct that abduction narratives can and do unfold during suggestive hypnotic procedures. They also correctly note that the expectations of the hypnotist can be an important influence on subsequent recall. However, the most appropriate conclusion that can be drawn from the available evidence is that hypnosis does not reliably produce more false memories than are produced in a variety of nonhypnotic situations in which misleading information is conveyed to participants. In two studies (Putnam, 1979; Zelig & Beidleman, 1981), the frequency of false

