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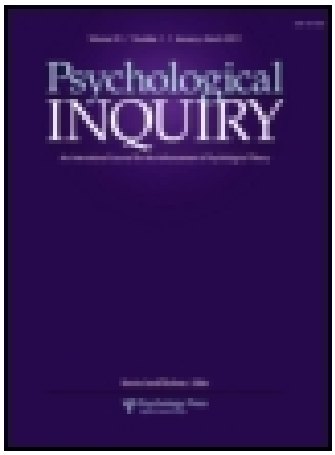

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a better account of the reports. On a related issue, the planted-memory hypothesis could account for differential rates of reports in the West versus Asia and Africa without resorting to "individualism" and "burdens of selfhood" by pointing to differences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

responses to leading questions was found to be greater during hypnosis. The effect of hypnosis in these studies was quite small, however, and, in a third study (Yuille & McEwan, 1985), it was not evident at all. Furthermore, more often than not, when nonhypnotic control groups are included, significant differences as a function of hypnosis have not been found (e.g., Dinges et al., 1992; Spanos, Gwynn, Comer, Baltruweit, & deGroh, 1989; Whitehouse, Dinges, E. C. Orne, & M. T. Orne, 1988). This failure to find a unique hypnotic effect has also been evident in many studies (see McConkey, Barnier, & Sheehan, in press) in which explicit attempts were made to create false memories. For instance, awake, task-motivated participants (Weekes, Lynn, Green, & Brentar, 1992) and simulating participants role-playing hypnosis (Lynn, Rhue, Myers, & Weekes, 1994) were as likely as hypnotized participants to report pseudomemories implanted by an experimenter. However, this does not rule out the possibility that hypnotic and nonhypnotic pseudomemory effects, although demonstrably similar, might differ in terms of the processes giving rise to them (McConkey et al., in press).

The role of hypnosis in enhancing confidence in false memories is also exaggerated. In some studies, the effect was not found at all (Mingay, 1987; Putnam, 1979; Zelig & Beidleman, 1981); when found, the effect tended to be small. For example, in Whitehouse et al. (1988), the confidence of hypnotized participants in inaccurate recollections increased from "just guessing" to "much doubt." Nogrady, McConkey, and Perry (1985) and Spanos et al. (1989) reported similarly small effects.

Newman and Baumeister's overestimation of the effects of hypnosis on memory seems to be linked to their acceptance of the outdated view that hypnotic phenomena are produced by an altered state of consciousness. Indeed, Newman and Baumeister note that "most of the currently available [UFO abduction] accounts are in fact products of the hypnotic state." Later, they write that hypnosis "does increase a person's confidence in the accuracy of material recalled while in that state." However, despite more than 70 years of research, investigators have not been able to find any markers of the hypothesized hypnotic state, and experts in hypnosis have been unable to distinguish whether a person is in that hypothesized state or is merely deeply relaxed (Dixon & Laurence, 1992; Kirsch, Mobayed, Council, & Kenny, 1992; M. T. Orne, 1979). As a result, most researchers in the field have either rejected the concept of hypnotic state, or they use the phrase as nothing more than a shorthand way of saying that someone is responding to suggestions made following a hypnotic induction (Hilgard, 1973; Kihlstrom, 1985; Lynn & Rhue, 1991).

In addition to hypnosis, any number of procedures such as relaxation, guided imagery, dream interpretation, and free association can increase the risk of false memories and false-confidence effects (see Belli & Loftus, 1994). This is the case because each of these procedures (a) encourages fantasy and imagination, (b) is often conducted in a context of assumed accuracy of exhumed memories, which invites participants to adopt a lax standard for distinguishing fantasy and reality, and (c) encourages participants to report more information independent of recall accuracy. These factors are, no doubt, more important in increasing pseudomemory risk than is the instantiation of a purported "hypnotic state."

We offer the following steps as a pathway to false-memory creation in persons reporting UFO abduction narratives, regardless of whether hypnosis is part of treatment:

1. A person is predisposed to accept the idea that certain puzzling or "inexplicable" experiences (e.g., amnesia, paralysis) might be telltale signs of UFO abduction.
2. The person seeks out a therapist, whom he or she views as an authority and who is, at the very least, receptive to this explanation and has some prior familiarity with UFO abduction reports.
3. Alternately, the therapist frames the puzzling experiences in terms of an abduction narrative.
4. Alternative explanations of the experiences are not explored.
5. There is increasing commitment to the "abduction" explanation and increasing anxiety reduction associated with ambiguity reduction.
6. The therapist legitimates or ratifies the "abductee's" experience, which constitutes additional positive reinforcement.
7. The client adopts the role of the "victim" or "abductee," which becomes integrated into the psychotherapy and the client's view of self.

Of course, adopting this new role might have powerful attendant reinforcements. Note that hypnosis is not a necessary part of this scheme, although hypnosis—or any other suggestive procedure, for that matter—might increase false-memory risk and labeling of experiences as consistent with a UFO narrative. Interestingly, this scheme has many features in common with the way false memories of childhood abuse might be generated.

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Fantasy Proneness and UFO Reports

This framework does not require that a person be fantasy prone, although Newman and Baumeister are correct that certain personal attributes, including fantasy proneness, might be associated with UFO narratives. That is, highly imaginative people, people who tend to exhibit dissociative symptoms (e.g., memory problems, depersonalization, derealization), and people with neurological symptoms (e.g., complex partial seizures), sleep disturbances (e.g., sleep paralysis), and personality disorders (e.g., borderline personality disorder) in which the sense of self is unstable or tenuous might indeed be at greater risk for developing abduction accounts.

However, it is unlikely that fantasy proneness is a final common pathway to UFO experiences in all or perhaps even the majority of cases. Indeed, the link between fantasy proneness and UFO abductions proposed by Newman and Baumeister is more tenuous than they acknowledge. They argue that fantasy proneness is correlated with hypnotizability and that people reporting abduction memories are highly hypnotizable; therefore, self-reported UFO abductees "are relatively high in fantasy proneness." Contrary to Newman and Baumeister's claim, however, the fact that a supposed memory was uncovered during hypnosis does not mean that the person who uncovered it is highly hypnotizable. The data on hypnosis and memory suggest that the production of new memories, accurate or not, is not much different with hypnosis than it is without hypnosis. In addition, the effect of hypnotizability is not very large, in that medium- as well as high-hypnotizable participants report pseudomemories (see McConkey et al., in press). Similarly, the relation between fantasy proneness and hypnotizability is quite small, with direct tests of the proposed links yielding negative or unimpressive results (e.g., Lynn & Rhue, 1988; Lynn, Rhue, Green, Mare, & Williams, 1992).

When Newman and Baumeister find small correlations accounting for less (sometimes far less) than 10% of the variance supporting their hypothesis, they treat them as if they were strong associations. For example, small associations between fantasy proneness and child abuse reports and between UFO reports and child abuse reports are interpreted as evidence that UFO reporters are highly fantasy prone. In contrast, failures to find direct evidence of the proposed link are written off as indications that more research is needed. Although a failure to find a significant correlation (e.g., Rodeghier, Goodpaster, & Blatterbauer, 1991) does not mean that an association does not exist, it does indicate that, if an association does exist, it is not very large. We do, however, believe that further examination of the hypothesis that abduction reports are related to fantasy proneness is warranted.

Culturally Derived Beliefs

Newman and Baumeister might very well underestimate the role of preexisting, culturally derived beliefs. That is, many of the sadomasochistic themes thought to represent an escape from the self might instead reflect basic elements of a UFO contact script that are part and parcel of our culture, as represented in movies, books, tabloids, and cartoons.

Some interesting research bears on this issue. Lawson (1977) hypnotized 16 volunteers and told them to imagine an alien encounter in which they see a UFO, are aboard the craft, are given a physical examination, get a message from the aliens, and so forth. Although Newman and Baumeister's hypothesis is that such reports could be easily distinguished from reports of persons claiming they had had genuine contact experiences, Lawson concluded that the hypnotically suggested reports were not, in fact, substantively different. Unfortunately, Lawson provided participants with specific suggestions to report information pertinent to what abductees claim (e.g., to imagine that they were examined by the aliens), so it is not surprising that no differences between instructed and noninstructed reports emerged.

A recent experiment (Lynn & Pezzo, 1994) in Lynn's laboratory extended Lawson's research and is worth reporting in some detail. Lynn and Pezzo (1994) did not actually hypnotize participants but instead used a modification of M. T. Orne's (1971) simulation design, which required that nonhypnotized participants roleplay the performance of an excellent hypnotic participant. Lynn and Pezzo also examined the effects of different cues for reporting a UFO encounter.

In the control condition, participants were instructed to use whatever information they had about hypnosis and the experimental procedures to convince the hypnotist that they were actually excellent hypnotic participants. They were also told that the hypnotist would hypnotize them and make them recall a puzzling event that involved (a) driving in the country, (b) leaving the car to witness mysterious moving lights in the sky, and, (c) afterward, having no clear recall of being in the car and noticing that there were 2 hr of missing time for which they could not account.

Participants were then interviewed by an experimenter who administered a brief hypnotic induction, "age regressed" them to the time they were in the field,

and then asked them to describe everything they could see, feel, and hear. The experimenters then individually administered a structured interview that began with open-ended questions and then became increasingly specific and direct. Following these procedures, participants completed a questionnaire devised by *Omni* magazine with Budd Hopkins. This questionnaire had been published in the magazine (Weintraub, 1987) as a survey for readers to "test the theory that large numbers of people have submerged ... 'abduction experiences'" (p. 55). The questionnaire includes questions about participants' belief in UFOs, whether they had sighted what they believed to be a UFO, memory gaps in terms of recollection of the sighting, intense phobias, and so on.

Participants in a second, "cued" condition received the *Omni* questionnaire at the very beginning of the experiment in order to prime them to relate their experiences in terms of a UFO narrative. A third group of participants, in an instructed condition, not only received the *Omni* questionnaire at the beginning of the experiment but were further instructed to role-play a "close encounter of a third kind" in which they have contact with alien occupants of a spacecraft. No additional information was given about what to say. All of the participants received the *Omni* questionnaire after hypnosis.

Lynn and Pezzo (1994) found that 19% of the 21 participants in the control condition identified the "lights in the sky" as a UFO in response to an initial open-ended question. In response to subsequent, direct questions, 52% of the participants identified the lights as UFOs, 24% reported they interacted with the aliens, and 14% reported they boarded the UFO. When participants received the *Omni* questionnaire before the interview, almost two thirds (62%) of the 21 participants reported that they witnessed a UFO, and, with the exception of 1 person, all of the participants reported a UFO in response to a direct question. Moreover, 62% of the participants in this group reported they interacted with aliens, and a third of the participants reported they boarded the spacecraft. When specifically instructed to role-play an encounter with aliens, all but 1 of the 20 participants (95%) identified the lights as a UFO, and 91% indicated they interacted with the aliens and boarded the spacecraft. In short, as hypothesized, participants endorsed these items with increasing frequencies as a function of the cue conditions of the experiment.

In the Lynn and Pezzo (1994) experiment, the participants' information about "alien contacts" shared many themes with reports by people claiming to have had genuine contact with aliens, some with sadomasochistic elements. For example, 11 participants who reported being taken aboard the UFO indicated they had been intentionally examined by the aliens, another 8 indicated that they had been poked, touched, or prodded by the aliens, and 2 reported that they had engaged in sexual relations with the aliens. These reports all came from participants who had been cued either by the questionnaire or by the explicit instructions to report an encounter with aliens. Thus, almost one third of the total sample of participants (32% or 21/62) reported stories with at least one element of a sadomasochistic narrative. Relatedly, more than one fourth of the participants (27%) reported that they either felt a loss of control during the experience or were being pulled or directly controlled by the aliens.

In the *Omni* questionnaire, and in a large-scale survey of unusual experiences that touted the ubiquity of "real" abductions (Hopkins, Jacobs, & Westrum, 1992), a question regarding a made-up word, *trondant,* was included in order to "trip up" false claimants. Contrary to Hopkins's assertion that false claimants or simulators would endorse the question that the word *trondant* had a special, yet unrecollected meaning, only 1 of the role-players in any of the conditions did so. This strongly suggests that Hopkins, who frequently hypnotizes persons believed to be abductees, places undue confidence in this unreliable method of detecting simulators or persons who confuse fantasized or imagined contact with aliens with reality.

In the survey of unusual experiences, Hopkins et al. (1992) assumed that having only 1% of the respondents claiming to know that the word *trondant* had a secret meaning for them was a strong indication of the accuracy of their other responses to the survey, which had a higher base rate of endorsement. However, that virtually no participant in Lynn and Pezzo's (1994) research (in which reports of alien contacts were simulated and inaccurate) endorsed this item casts doubt on the usefulness of the item and on the assertions made about the validity of the survey.

If anything, Lynn and Pezzo's (1994) findings probably present a conservative picture of the base rates of sadomasochistic themes in role-plays in that the simulation instructions—which indicated that unsuccessful role-playing (i.e., the interviewer detecting faking) can result in ejection from the experiment—have been shown to evoke a cautious response set (Sheehan & Perry, 1976), particularly when participants are not sure exactly how to behave. Indeed, after the experiment, several participants noted that they suppressed talking about more bizarre interactions with the aliens.

Of course, Lynn and Pezzo's (1994) findings do not imply that persons who report contact with aliens are faking, lying, or simulating their responses. At the very least, however, Lynn and Pezzo's data indicate that the elements of alien contact narratives are widely available to many college students and that sadomasochistic elements in such narratives may be elicited when cues are provided to construe mysterious events in terms of

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a UFO narrative. This raises the possibility that persons vulnerable to interpreting their experiences along lines scripted by an alien contact scenario may readily incorporate information, leading questions, and suggestions from a therapist into the narratives they construct. The dangers to clients who are victims of such leading psychotherapy procedures, used to ferret out a history of alien abduction, cannot be overstated.

Note

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