
TARGET ARTICLE

Toward an Explanation of the UFO Abduction Phenomenon: Hypnotic Elaboration, Extraterrestrial Sodomasochism, and Spurious Memories

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Autobiographical memories are often suspect. For example, a surprisingly large number of people report having been abducted by extraterrestrials. We offer a prototype of the abduction experience and an assessment of the frequency of such reports. These accounts are hard to dismiss on the basis of mendacity or insanity, but there are ample reasons to doubt their literal accuracy. We offer a cognitive-motivational explanation for how spurious memories of unidentified flying object (UFO) abductions can be created and maintained. The motivational roots lie in the desire to escape from ordinary self-awareness, and this explanation is supported by parallels between UFO abduction accounts and masochistic fantasies. The cognitive bases involve the integration and elaboration of hallucinations, general knowledge, and contextual cues into full-blown accounts, usually with the aid of hypnosis. Due to the pitfalls of hypnosis, people develop a high degree of confidence in the veridicality of spurious UFO abduction memories.

Much of what we know about other people is based on the stories they tell us about themselves. Unfortunately, sometimes what they tell us is not true. Some such stories are outright fabrications. Other autobiographical memories are simply difficult to believe, although the storyteller might be convinced they are real. According to one very large set of first-person accounts, our planet is frequently visited by aliens from outer space. At least several hundred (and more likely several thousand) Americans are said to be abducted every day by these aliens, who take the hapless individuals into their spaceships, perform painful and sexually tinged medical experiments on them, try with mixed success to erase their memories of the incident, and then return them to Earth in the approximate vicinity of the site from which they were abducted. Needless to say, many people are skeptical that these events are actually occurring, but this skepticism is quite often accompanied by a sincere desire to understand what could possibly lead someone to construct and accept a false memory of this kind.

Psychologists have been slow to devote their thoughts and research efforts to these phenomena. One reason might be a kind of defensive skepticism. According to evidence reviewed by Bem and Honorton (1994), psychologists are significantly less willing than other scientists (and even other social scientists) to take paranormal phenomena seriously. Coon (1992) traced this state of affairs back to the turn of the century, when many psychologists believed that the survival of the discipline as a respectable science hinged on their distancing themselves from then-fashionable topics such as telepathy, clairvoyance, and communication with the dead. Yet, if these recent startling accounts are to be believed, they suggest a large and increasing scope of intervention by extraterrestrial aliens into human affairs, which might soon amount to one of the most spectacular and important developments in human history. And, if these accounts are not to be believed, then they constitute a widespread and rising form of fascinating delusion that calls for explanation on the basis of accepted cognitive and motivational principles.

In either case, people who claim to have experienced abduction by unidentified flying objects (UFOs) might require expert intervention to help them recover. A handful of mental health professionals are therefore now arguing that psychotherapists should be educated about the UFO abduction phenomenon so that they will recognize the symptoms and be able to help the victims (e.g., Clamar, 1988; Mack, 1992b; Sprinkle, 1988; see also Huyghe, 1993). Abductees, they argue, are suffering from posttraumatic stress disorder (or a variant of that condition, "experienced anomalous trauma"—see J. P. Wilson, 1990), and so they should get the same treatment as anyone else meeting the relevant diagnostic criteria. In other words, their problems should be handled like those of victims of other brutal experiences, such as warfare, rape, or physical abuse. A more radical approach is taken by those who argue that the problems of abductees are not just similar to other problems of adjustment but that, quite often, repressed memories of UFO abductions might be causing many of those other problems. As described by a skeptical Klass (1988a), this "skeleton key theory" suggests that recognizing the reality of UFO abduction has the potential to unlock the causes of many kinds of psychological abnormality, such as unexplained fears, phobias, and panic disorders. Proponents of this theory also caution that the vast majority of psychologists and psychiatrists are not equipped to help abductees, so people who feel that they have had such experiences should avoid those professionals. Instead, victims would be better off seeking help from experts familiar with the phenomenon. Some of these experts can even provide advice on techniques one can use to resist becoming an abductee (Druffel, 1993).

We do not mean to mock the efforts of those who seek to provide comfort to people who are unhappy and confused due to what they believe is a UFO abduction. But we do believe that these people are better served by a more complete understanding of the sources and psychological significance of their disturbing memories. In this article, we attempt to contribute to that understanding. Randles and Warrington (1985) characterized UFO abduction reports as "a remarkable phenomenon which one feels must have a psychological explanation" and declared that, given how its "eerie consistency comes through in case after case ... it is difficult to justify its continued neglect by social scientists" (pp. 153–154). The purpose of this article is to offer a possible explanation of the motivational and cognitive processes that might cause people to believe that they have been abducted by aliens. It is necessary to admit at the outset that we do not believe in the literal reality of these experiences, and so our explanatory efforts are devoted to explaining them as fantasies and false memories. We hope thus to also make a more general contribution to the ongoing debate on both the

fallibility of autobiographical memory (e.g., Halverson, 1988; Neisser & Harsch, 1992) and the processes involved in distorted reconstructions of the past (e.g., Baumeister & Newman, 1994; E. F. Loftus, 1993; Ross, 1989).

An observation made by Jacobs (1992), another UFO investigator sincerely worried about the effects of extraterrestrial intrusions on abductees, foreshadows our main argument. Jacobs noted an odd characteristic of these people. Due to the traumatic nature of their experiences, he lamented, their sexuality has been affected; in particular, many have confessed to "fantasies involving masochism and bondage" (p. 253). We concur with Jacobs's hypothesis of a link between masochistic fantasies and UFO abduction accounts. Rather than suggesting that the fantasies are a result of an actual abduction experience, however, we believe that both spring from a common source—the need to escape the self. Both masochistic and UFO abduction fantasies might derive from the excessive demands and stresses associated with the modern construction of selfhood (Baumeister, 1991a; Cushman, 1990). We present evidence supporting the hypothesis that UFO abduction accounts express the goal of escaping from awareness of the self's most burdensome aspects, such as its needs for esteem and control. In addition, we review in detail the many ways in which UFO abduction accounts resemble another set of accounts hypothesized to express the desire to escape the self—the fantasies of sexual masochists. As perceptively put by David Langford, a science-fiction writer,

Why should people fantasize such unpleasant experiences as some of those reported? Well, I am sure that being raped by the alien equivalent of a telephoto lens would be a jolly nasty experience, but if you don't actually have to undergo it but only "remember" undergoing it, suddenly it can be seen in a new light as a partly masochistic—or not so masochistic—fantasy. (Hough & Randles, 1991, pp. 41–42)

Unlike masochistic fantasies, however, accounts of UFO abductions are typically believed (by the individuals involved) to have really happened. To explain this, we invoke what is known about the fabrication of spurious memories, especially under hypnosis.

The UFO Abduction Experience: An Overview

Although no two UFO abduction reports are exactly alike, a large number are structured in a similar enough way that it is possible to construct a general or typical version of the experience. What follows is a brief synopsis of the prototypical abduction story, derived primarily from the detailed abduction reports presented

by Bullard (1987b), Fiore (1989), Hopkins (1987), Jacobs (1992), Lorenzon and Lorenzon (1977), and Steiger (1988). (Note that we use the terms *story*, *narrative*, and *account* interchangeably, as in Baumeister & Newman, 1994).

It is important to note that abduction memories rarely emerge unaided. Those who learn that they might be abductees commonly seek out help for any of a number of reasons—vague anxieties, specific phobias, bad dreams, fragmentary and disturbing memories, or what seems like an inexplicable episode of “missing time” (Hopkins, 1981). It is usually only after consultation with a psychotherapist or some sort of UFO investigator that these people can articulate a specific memory of being abducted by aliens.

UFO abduction accounts often start with the sight of a flying saucer or spaceship, although abductees sometimes remember only being aware of a bright light. Such details are frequently absent, however, and it is quite common for the abduction episode to begin with the appearance of strange beings, who are presumed to be extraterrestrial aliens. Typically, the victims are paralyzed or otherwise immobilized at this point (often in their cars or homes) and then taken onto the aliens’ craft. Occasionally, people remember being carried on board or otherwise transported there, but more commonly abductees cannot recall how they ended up inside the UFO.

Once on board the UFO, abductees typically find themselves in a strange, brightly lighted room, often filled with complicated machinery. What appears to be a physical examination of some sort then commences. Often, abductees are fastened to and stretched out on a table or bed. Sometimes they are undressed, but almost always they are subjected to painful procedures of an ostensibly medical nature. Cuts are made, blood is often drawn, and various orifices of the body are probed and even violated. Needles and physical restraints might be involved. Genitals receive special attention, and reports of sexual activities between the aliens and their victims have become increasingly common in recent years. The aliens who perform the examinations are grim and businesslike, and others stand around and watch. The examiners and other occupants of the craft almost never look quite like normal people, but they are generally humanoid in appearance.¹ Throughout the experience, abductees feel powerless and externally controlled.

At the end of the examination, victims’ memories for the entire episode are erased, or the victims are otherwise programmed to keep their experiences a secret. Sometimes, abductees are explicitly asked in a postexamination conference with the aliens to refrain from telling anyone what happened. This communication more often than not is telepathic in nature. Finally, some accounts describe tours of the spaceship, discussions of ecological and geopolitical crises on earth, and

even journeys to other worlds. These parts of the story are far from universal, however, and the exact details are very inconsistent across cases (e.g., a wide variety of “home planets”; Rimmer, 1984).

One of the first experiences of this kind was claimed by Betty and Barney Hill (Fuller, 1966); their story was later made into a television movie aired in 1975. While driving through New Hampshire, the Hills reported, they were stopped by a UFO. The two were then forced to board the aliens’ ship, where they were subjected to painful, examination-like procedures like the ones already described. Although subsequent research has turned up earlier cases with some similarities to their alleged experiences (see Bullard, 1987a), the Hills’ story is essentially the “Rosetta stone” of UFO abduction lore. When it first became public, the impression among most observers was that they had never heard anything quite like it before (Hough & Randles, 1991; Klass, 1988b).

The Hills are no longer alone. To emphasize this point and to better convey the nature of the UFO abduction experience, we present two brief examples from Bullard’s (1987b) catalogue of abduction cases:

Under hypnosis, he remembered that two lights descended from the sky and landed nearby. He felt a foreboding that something would happen if he stopped, but his car suddenly veered off the road as if pulled by a magnet, and when he got out he saw a light all over the area. A sound like leather rubbing together attracted his attention to four or five beings who apparently came over a fence along the roadside and approached him, at which time he was unable to move. ... A clamplike device seized him by the shoulders, causing him pain in the back. The beings turned him towards the craft. ... He entered a white room, rounded and domed and seemingly without an angle, and glowing with a misty luminosity. Though he did not remember

¹Remarkable similarities in the appearance of the aliens have also frequently been emphasized (e.g., Hopkins, 1987; Jacobs, 1992). Most frequently encountered are said to be the “grays,” familiar to readers of Whitley Strieber’s (1987) *Communion: A True Story*. The complete text of the abductee story beginning on this page (“Under hypnosis, ...”) also contains a classic description of this type: “The beings were hairless humanoids with heads like inverted teardrops, large black walnut-shaped eyes, small nose, slit mouth and no ears. The skin was whitish and putty-like, the height below his shoulder. The beings were extraordinarily skinny, with no muscular definition and an apparent weight of 50 lbs.” However, readers of the UFO literature will encounter a bewildering variety of other beings, including some with “golden, strawlike hair,” others that look like “a combination of earth animals,” “creatures with wrinkled skin, crab-claw hands, and pointed ears,” and a woman with “long red hair and violet eyes” (all from Steiger, 1988, pp. 59, 62, 71, 175, respectively). Mack (1994) further noted that “abductees overseas seem to have contact with a greater variety of entities than Americans” (p. 12). Cosculluela (1993) argued that such differences in appearance are often glossed over by those seeking to emphasize the commonalities between different stories.

undressing, he next found himself seated on a table wearing only a diaper-like cloth. A large and intricate device like a planetarium projector came down from the ceiling and ran a needle-like device along his back. Two beings seemed in control of the examination while others waited in the room. ... He assumed various positions on his stomach, back, and side as the beings examined him all over. After the beings applied a clamplike device to his hip region and poked his stomach with a rod, they flexed his legs with another rodlike device. ... He felt that they did not care that they hurt him. (pp. 39–40)

When hypnotized she remembered a light and a voice calling her out of bed. She obeyed against her will and went to a muddy field as a saucer-shaped craft neared the ground. Through the windows she saw beings and a piercing sound prevented her from moving. A warm beam of light then pulled her inside the craft. She found herself inside a white hospital room. Two small beings with tiny mouths and compelling eyes, dressed as if in motorcycle jackets, told her without speaking to undress and lie down on a table. She resisted but eventually gave in. ... At last the doctor entered and gave her an injection (?). He then inserted a needle into her navel. The beings only admitted to being from far away and said she would not care who they were. One being wore a scarf and seemed to be the leader; he remained in the room after the others departed, undressed himself and rubbed her with a jelly. It warmed her, whereas the leader's touch was cold, his skin grey-white. The being, who had human sexual organs, then raped her. (p. 69).

How Many Abductees?

It seems safe to say that most people in this country now have some familiarity with the UFO abduction phenomenon. Eberhart (1986) listed 30 books on the topic, but the more successful ones have only appeared since he compiled his comprehensive bibliography of the UFO literature—that is, those by Hopkins (1987), Mack (1994), and Strieber (1987). Whitley Strieber's (1987) *Communion: A True Story*, a prototypical abduction story, made an especially significant impact on the public. It was the third-best-selling paperback non-fiction (sic?) book in 1988 (McDowell, 1989) and was made into a movie the following year (a major release by a large studio).

The number of people coming forward to report that they have fallen prey to the aliens' deeds seems to have grown in proportion to the number of books, movies, and sensationalistic television programs that have been devoted to the topic. Early commentators' claims about the extent of the problem were quite modest. Greenberg, writing in 1979, noted "some 200 reported cases" (p. 106). Rimmer (1984), on the other hand, claimed that about 500 episodes had been reported between 1970 and 1980, and Hopkins (1981)

provided a similar estimate. Subsequent publicity, and especially the publication of *Communion*, triggered a quantum leap in the apparent magnitude of the abduction phenomenon. According to Conroy (1989), shortly after *Communion* came out, Strieber announced that he had received 700 letters from people "this has happened to" (p. 139). By 1988, the figure was said to be 5,000, with about 40 to 50 more letters arriving each day ("Q & A: Whitley Strieber," 1988). Even more recently, in an appearance on *Larry King Live*, Strieber (1993) claimed to have received a total of 55,000 letters from people reporting such experiences, with approximately 200 a week still being sent to him.

Although these many tens of thousands of UFO abduction experiences might seem a remarkably large number, many students of these phenomena believe that they might be merely the tip of the iceberg. Many people would presumably be embarrassed or afraid to admit to having been subjected to such an ordeal (see Westrum, 1979), and so the actual number of people who believe they have been abducted might be much higher—not to mention the aliens' putative efforts to erase memories or enjoin their victims to secrecy. For example, based on a confidential survey of students at Temple University, Jacobs (1992) estimated that 15 million people in the United States might have had abduction experiences.

The most ambitious effort to specify the number of abductees in the United States was a survey conducted by the Roper organization and reported by Hopkins, Jacobs, and Westrum (1992) in a booklet that was recently mailed to many members of the American Psychological Association. Hopkins et al. claimed that directly asking people about such experiences is pointless, because most people will either not remember them directly or will not admit to having had them for fear of ridicule. Therefore, the survey questions focused on five experiences said to be strongly associated to the phenomenon. Respondents (5,947 randomly sampled American adults) were asked whether they recalled ever "waking up paralyzed with a sense of a strange person or presence or something else in the room," "experiencing a period of time of an hour or more in which you were apparently lost, but you could not remember why or where you had been," "feeling that you were actually flying through the air although you didn't know how or why," "seeing unusual lights or balls of light in a room without knowing what was causing them or where they came from," or "finding puzzling scars on your body and neither you nor anyone else remembering how you received them or where you got them." Hopkins et al. used the working assumption that people who reported having at least four of these five experiences—2% of all those surveyed—were probably abductees. Based on this indirect method, Hopkins et al. estimated that 3.7 million Americans have been abducted by UFOs.

Critiques of this survey and of its conclusions have quickly appeared. Stires (1993) pointed out that no adequate evidence had been presented for the validity of the questions and none at all for the "four-of-five" rule (see also methodological and psychometric critiques by Dawes & Mulford, 1993; Goertzel, 1994; Hall, Rodeghier, & D. A. Johnson, 1992). Klass (1993) calculated that if Hopkins et al.'s (1992) conclusions are accurate, then, since the fall of 1961 (when the Betty and Barney Hill case ushered in the abduction era), an average of 340 Americans have been abducted every day. This high frequency seems especially implausible in light of the fact that no physical evidence exists for any UFO abduction. Baker (1992a), meanwhile, argued that the survey probably does identify a special group of Americans, but not abductees. Baker suggested that they are more likely to be people with various sleep disorders (to be discussed).

Although the figures reported by Hopkins et al. (1992) strike many as incredible, the fact remains that thousands of people now count themselves among the legion of abductees. Gordon (1991) reported that 190 of them recently trekked to Wyoming to attend a conference held exclusively for abductees.

Explaining UFO Abduction Reports: A Review of Some Parsimonious Explanations

Perhaps the most straightforward account for UFO abductions would be that they actually occur. According to this account, alien beings do in fact visit our planet and snatch unfortunate Earthlings at will, but, because the aliens possess a technology so far beyond ours, they always manage to evade detection. For many reasons, we find the "extraterrestrial hypothesis" difficult to accept. Not least among them is the illogical, irrational, and internally contradictory nature of many UFO abduction stories. For example, even if extraterrestrials did land on Earth, it is unlikely that they would be able to float people through solid walls—and yet events of that kind are commonly reported by abductees. Also characteristic are jarring discontinuities in the stories. As already noted, few abductees remember entering the aliens' craft (Jacobs, 1992). Typically, the aliens appear, and then one is suddenly inside the UFO. Randles (1988) called this kind of strangeness the "Oz factor." This is an apt label, for only in the files of an abduction investigator would one find a story like the following: "Two beings stood guard while the leader and two others examined the witness, removing his shirt and trousers and placing a skullcap on his head. He then heard a voice from inside screaming, 'I am Jimmy Hoffa'" (Bullard, 1987b, p. 63).

One kind of abduction story that would be seemingly impossible to accept would be an urban abduction. Clearly, if people were being snatched in the middle of cities, millions of people would see what was going on, and there would by now be an established consensual validation that extraterrestrials visit our planet to abduct and molest American citizens. Apparently, though, many abductees fail to see any incongruity in reporting that they were abducted from crowded urban settings without attracting any notice. One speaker on the topic of UFOs recently stated that, in New York City "there have even been cases where people have been taken right out of their apartments by a beam of light. ... Why it goes unnoticed, I don't know" ("Mysteries," 1991, p. 31).

On strictly logical grounds, then, UFO abduction memories are difficult to accept. As with everyone else, though, our initial reaction to the stories people tell—including bizarre ones such as these—is to assume that they reflect some real experience and to believe them (see Gilbert, 1991). At present, however, there is no compelling evidence that extraterrestrial aliens have actually abducted American citizens (for thorough, if now slightly outdated reviews, see Klass, 1988b; Rimmer, 1984). For example, an important source of support for the extraterrestrial hypothesis would be the testimony of third-party witnesses to UFO abductions. Jacobs (1992) claimed that a person can be abducted even when he or she is part of a small group engaged in some mutual activity. In such cases, the abductors are said to be able to "switch off" or somehow distract the nontargeted people. As a result, unfortunately, only one person, the alleged abductee, can provide testimony about the incident. In other cases, more than one person has been supposedly abducted at once (see Bullard, 1987b). But, as Baker (1992b) noted, such "multiple" abduction reports fall short of being the kind of independent corroborating evidence so eagerly sought by those believing in the objective reality of UFO abductions. Almost without exception, the alleged victims have a close relationship of some sort with each other and have had a chance to communicate and influence each other before any investigation takes place. In addition, they might be motivated to back each other up so that neither can be accused of being dishonest or insane.

In sum, uninvolved witnesses to alien abductions are lacking. Even Jacobs (1992), a prominent advocate of the literal reality of these events, conceded that "no abductions have surfaced that took place in the middle of a very large group of people, in full view at a public event" (p. 50). Furthermore, in those few cases in which witnesses were physically present during the putative abduction, the witnesses' accounts have tended to contradict or undermine the account of UFO abduction. Randles (1988) described a case in which an alleged

abductee was clearly seen lying on the ground while the abduction was supposed to have been taking place. Basterfield (1992b) reported that another woman claimed that an abduction occurred at a time when two other people were standing next to her and saw nothing of the kind happening.

Physical evidence of some kind might also provide convincing support for the extraterrestrial hypothesis. No photographs or films of an abduction exist, despite the concerted efforts of some abductees to document their experiences on videotape (see Jacobs, 1992, pp. 259–260). And, although others have assiduously searched for evidence of alien implants—the “smoking gun”—physical examinations of abductees have never revealed any (Basterfield, 1992a). Nor have other artifacts turned up. The results of investigations seeking to confirm the reality of UFO abductions thus compel us to agree with Hough and Randles (1991), who suggested that, rather than representing a hostile advance force from some other galaxy, “the spaceships emerge from our minds” and that “the ‘aliens’ haunt the corridors of inner space in our heads” (p. 189). It seems most parsimonious to reject the literal reality of abductions.

Others with a similar view have proposed a rather simple psychological explanation for UFO abduction reports—mendacity. Baker (1992b) suggested that many (if not most) such tales are simply lies told by people seeking attention and notoriety. Undoubtedly, some reports are in fact conscious fabrications (for an exposé of one such incident, see Klass, 1988b, pp. 172–175). On the other hand, those actively involved with abductees consistently claim that the majority of “victims” do not seek publicity and instead desperately seek to preserve their anonymity (e.g., Hopkins, 1987; Jacobs, 1992; for similar observations, see also Rimmer, 1984; Vallee, 1988). The majority go by pseudonyms when they permit their stories to be made public.² Most UFO abduction accounts cannot therefore be easily written off as attention-seeking lies.

Another parsimonious psychological explanation offered by Baker (1992b) is that many abductees might simply be insane and more generally incapable of distinguishing between reality and fantasy. Bartholomew, Basterfield, and Howard (1991) noted that people with UFO-related experiences of all kinds, abduction-related or otherwise, have typically been written off as mentally disturbed. Such labels, however, are usually applied simply on the basis of the bizarre nature of the stories told, not as the basis of any kind of formal psychological evaluation. In contrast, when

Bartholomew et al. (1991) reviewed all of the biographical material available for 152 people who claimed contact with alien beings, they found that their subjects were “remarkably devoid of a history of mental illness” (p. 215). Others have directly examined abductees with standardized psychological instruments (e.g., the Minnesota Multiphasic Personality Inventory [MMPI]) and have found no evidence for psychotic disturbances (Bloecher, Clamar, & Hopkins, 1985; Mack, 1994; Parnell, 1988; Parnell & Sprinkle, 1990; Ring & Rosing, 1990). Ellis (1988) concluded: “We need to admit that sane, intelligent people may sincerely perceive, or come to believe, that they have been attacked or abducted by paranormal agents” (p. 269).

Explaining UFO Abduction Reports: Two Puzzles

Assuming that UFO abduction accounts are not literally true, not conscious fabrications, and not a reflection of obvious psychopathology, some more subtle explanation will be necessary to make sense of them. And, although cognitive and motivational determinants of psychological phenomena are notoriously difficult to disentangle (Sorrentino & Higgins, 1986), our explanation can roughly be divided into two components—the cognitive factors that lead to the development of false memories and the motivational factors that lead to the construction of a specific class of false memories, those involving UFO abductions.

To explain why people report UFO abductions, we begin by answering a more general question: Why would people claim to remember things that did not actually happen to them? Much research and theorizing have focused on the issue of how pseudomemories are formed, particularly on the role of hypnosis. We briefly review that literature. As we suggest, the emergence of spurious memories under hypnosis has been well documented and might provide one potent cognitive mechanism for the production of UFO abduction reports.

In addition to describing how and why people might construct false autobiographical memories in general, we try to shed light on the meaning of some of the more peculiar and shocking aspects of UFO abduction narratives in particular. To do so, we must consider motivational factors. We argue that the details of abduction stories can be understood quite readily if one assumes that what these accounts reflect is a desire to effectively escape awareness of the self.

Generating False Memories

Those who have heard testimony from abductees often find it difficult to believe that anyone could

²Of course, as Strieber's case makes clear, not all abductees avoid the limelight. In addition, Klass (1988b) reported that some of Hopkins's informants who demanded secrecy appeared shortly afterward on nationally broadcast television programs using their real names.

generate such detailed accounts if the accounts were not accurate reports of real experiences. And they might find it difficult to imagine how anyone could experience such an astonishing failure of "reality-monitoring" (M. K. Johnson, 1988; M. K. Johnson & Raye, 1981)—the process people use to decide whether the information they recall derives from an internal or external source (i.e., whether it is a memory of an actually perceived event or just something imagined or dreamt). Unfortunately, people are not particularly good at distinguishing between others' real and phony memories (Schooler, Gerhard, & E. F. Loftus, 1986), and they are not generally aware how easily false memories can be implanted and accepted—particularly when recall takes place under hypnosis.

The latter point is crucial because, although formal hypnotic procedures are not used to uncover every episode of UFO abduction, most of the currently available accounts are in fact products of the hypnotic state (Rimmer, 1984). Exact figures are impossible to come by, but of the 104 cases identified by Bullard (1989a) as "high quality," 71% were associated with hypnosis. Other estimates of the number of abduction memories discovered with the aid of hypnosis typically have hovered around 80% to 90% (e.g., Cooper, 1988; Maccabee, 1985). Similarly, all 13 people whose stories were presented in Mack's (1994) book had constructed their stories with the aid of hypnotic regressions. Any discussion of the UFO abduction phenomenon would thus be incomplete without careful consideration of hypnosis—the tool used to reveal the abduction stories.

The research we review on how pseudomemories might be formed is not uniquely relevant to UFO abduction reports. For example, people might also confabulate reports of physical and sexual abuse in early childhood (E. F. Loftus, 1993), involvement in satanic cults (Bottoms, Shaver, & Goodman, in press; Ofshe, 1992; Wright, 1994), or "past lives" (Spanos, 1987). The mechanisms we discuss here can play a role in the creation of all kinds of false memories, but the discussion is primarily focused on how they might engender UFO abduction reports.

Why Seek Out a Hypnotist?

As already noted here, abductees initially seek out counseling only because they believe "something strange" happened to them, and they typically are uncertain as to what that was. Often, this involves what seems like an episode of "missing time" (Hopkins, 1981). In these cases, a person feels that he or she cannot account for a significant chunk of time. As Baker (1992a) pointed out, however, not being able to remember what took place for a few hours in even the recent past is not at all unusual. This kind of experience is especially likely on long-distance drives; people often report suddenly being unaware of anything that transpired during long stretches of their trips. Not surpris-

ingly, many alleged UFO abductions are said to have occurred during solitary drives at night (Bullard, 1987b; Rimmer, 1984).

Furthermore, Baker (1992a) argued that the "seed" for a UFO abduction memory—that is, the odd experience that leads a person to seek help from someone perceived to be a specialist in anomalous phenomena—quite often might be a hypnogogic or hypnopompic hallucination (see Hufford, 1982). These frightening experiences, occurring either just before people fall asleep (hypnogogic) or wake up (hypnopompic), are in no way indicative of severe psychopathology. Baker (1987) described the experience as follows:

First, it always occurs before or after falling asleep. Second, one is paralyzed or has difficulty moving; or contrarily, one may float out of one's body and have an out-of-body experience. Third, the hallucination is often bizarre; i.e., one sees ghosts, aliens, monsters, and such. Fourth, after the hallucination is over the hallucinator typically goes back to sleep. And fifth, the hallucinator is unalterably convinced of the "reality" of the entire experience. (p. 157)

Certain sensory features, such as musty smells and shuffling sounds, are characteristic of hypnogogic and hypnopompic states (Ellis, 1988) and of UFO abduction memories. In addition, Ellis (1988) noted that these experiences of hypnogogic and hypnopompic states are so common that different cultures have specific names for them. In Newfoundland, for example, they are called the *Old Hag* in reference to a witch-like entity that is often hallucinated.

As Baker (1987) noted, many of Strieber's unusual and supposedly UFO-related experiences match so closely with those of hypnogogic and hypnopompic states that there can be no doubt as to what they were (see, especially, Strieber, 1988, pp. 82–84, 233). Less anecdotally, Spanos, Cross, Dickson, and DuBreuil (1993) found that "intense" UFO experiences of all kinds (i.e., those not just involving lights or shapes in the sky) more often than not occur while people fall asleep, dream, or wake up. In general, it seems highly plausible that a hypnogogic or hypnopompic hallucination is often the inexplicable experience that is later fleshed out into an abduction memory. This would account for Hopkins's (1987) description of a typical "bedroom encounter" with aliens, which "involves the appearance of a strange figure (or two or three) standing near the bed on which the invariably frightened subject lies physically paralyzed" (p. 314).

False Abduction Memories and Hypnosis

Needless to say, people baffled and frightened by missing time, disturbing dreams, or hypnogogic or

hypnopompic hallucinations might end up getting professional help from any number of sources. However, people who are already interested in UFOs seem especially likely to end up with a therapist having similar beliefs and inclinations (or even with a UFO investigator of some sort). For example, psychotherapist Fiore (1989) presented 13 abduction cases, all of whom recalled their experiences while in a hypnotic state. Of the 13, 4 (pp. 35, 68, 99, 301) had read or were familiar with Strieber's *Communion*, 1 (p. 146) had attended a seminar on UFOs, and 5 more (pp. 52, 133, 174, 230, 277) seem to have had a general long-standing interest in the subject. Thus, at least three fourths of Fiore's particular sample had clearly exhibited some interest in UFOs before their own putative abductions.

This particular combination—both a therapist and a patient with extensive knowledge of UFOs and/or beliefs in the reality of UFOs—is particularly volatile, as becomes clear as we review some of the epistemological pitfalls of hypnosis. In general, the belief that hypnosis is an effective, reliable tool for enhancing valid recall is currently a minority view, and much evidence argues against it (M. T. Orne, 1979; Sheehan, 1988b). Although hypnosis increases people's sheer number of recollections, this is true for both accurate and inaccurate memories (Dywan & Bowers, 1983), and hypnosis is as likely to increase false statements as true statements. In part, this is due to the fact that, when under pressure to recall events under hypnosis, people will try to fill in memory gaps in any way possible—including with fantasies (M. T. Orne, 1979). Recall under hypnosis is a reconstructive process subject to numerous biases, including those deriving from contextual factors (e.g., loaded questions) and those stemming from the subject's own general knowledge and beliefs about whatever he or she is attempting to recollect (M. T. Orne, Whitehouse, Dinges, & E. C. Orne, 1988). In addition, the more highly hypnotizable a person is, the more likely he or she is to fill in memory gaps with fantasies when requested to recall past events (M. T. Orne, 1979).

Beliefs and expectations of the hypnotist. It is well established that hints or cues can affect hypnotic subjects and lead them to fulfill hypnotists' expectations (Spanos, 1986). For example, Spanos, Menary, Gabora, DuBreuil, and Dewhirst (1991) instructed their subjects to "regress beyond birth to a previous life" with the aid of hypnosis. Furthermore, subjects in different conditions were led to believe that the hypnotist had specific expectations about the characteristics of those past lives (e.g., that they would be people of the opposite sex or child abuse victims). Subjects incorporated these expectations into their ostensible memories of past lives significantly more often than did subjects who had been given neutral instructions. Similarly,

when Hilgard (as described in Baker, 1987) suggested to a hypnotic subject that he had witnessed a bank robbery, this person not only recalled the incident but was able to identify a photograph of the man who committed the fictional crime. Ganaway (1989) went so far as to conclude:

The formation of an entire belief system with its own set of supporting pseudomemories can be cued by a simple suggestion from the interviewer, and, if not extinguished, could potentially become part of the subject's permanent sense of narrative truth. (p. 209)

Pressure to generate specific memories can also be found in the UFO abduction literature. For example, when Fiore (1989) visited a well-known abduction specialist, complaining about a disturbing dream, the specialist prefaced a hypnotic induction as follows: "Dreams are very commonly the tip of the iceberg of a meeting with ETs [extraterrestrials]. ... Let's get started and we'll soon find out about yours" (pp. xvii–xviii). Also instructive is the following dialogue from a hypnotic session with an abductee.

Dr. Fiore: Now I'm going to ask you a few questions at this point. You will remember everything because you want to remember. When you were being poked everywhere, did they do any kind of vaginal examination?

Sandi: I don't think they did.

Dr. Fiore: Now you're going to let yourself know if they put a needle in any part of your body, other than the rectum.

Sandi: No. They were carrying needles around, big ones, and I was scared for a while they were going to put one in me, but they didn't. [*Body tenses.*]

Dr. Fiore: Now just let yourself relax. At the count of three you're going to remember whether they did put one of those big needles in you. If they did, know that you're safe, and it's all over, isn't it. And if they didn't, you're going to remember that too, at the count of three. One ... two ... three.

Sandi: They did. (Fiore, 1989, p. 26)

Hypnotic subjects' recall can be distorted without resorting to cues or instructions as blatantly explicit as in the example just presented. Subtle and even inadvertent cues can have the same effect (O'Connell, Shor, & M. T. Orne, 1970). In fact, the influence of a hypnotist or interrogator might be more powerful when it is less overt. Powell and Boer (1994), in their discussion of recovered memories of childhood sexual abuse, noted that obvious pressures to report specific scenes or images might sensitize people to the possibility that related material that comes to mind might not be self-generated or based on actual experience. Obvious external influences (e.g., leading questions) might serve as cues that also lead

abductees to discount the veridicality of their UFO-related memories. In general, it might be the very subtlety of the processes leading to the construction of false memories that results in attributing images and thoughts to actual experiences rather than contextual cues (for decision processes involved in determining the source of a memory, see Jacoby & Kelley, 1987; M. K. Johnson, Hashtroudi, & Lindsay, 1993).

Clearly, the evidence suggests that someone with firm beliefs about the reality of UFO abductions might well influence the nature of any putative hidden memories another person dredges up with the aid of hypnosis. In addition, research on the effects of hypnotist expectations might well explain the frequent observation that some of the specific details or features of abduction accounts appear to remain consistent among accounts obtained by the same investigator but vary among investigators (as noted by, among others, Klass, 1988b; Vallee, 1990).

Beliefs and expectations of the hypnotized subject. Subjects' own general knowledge and expectations might also help shape what they report while under hypnosis (M. T. Orne, 1979). Hypnotized subjects are prone to believing that an idea, image, or thought is based on personal experience even when it derives from some other source. Baker (1992b) called this phenomenon *cryptomnesia* (see also M. K. Johnson et al., 1993) and likened it to unintentional plagiarism.

Cryptomnesia is most obviously in evidence when people attempt "past-life regression" under hypnosis. Typically, people's "past lives" show remarkable parallels to books they have recently read (Baker, 1992b). Similarly, subjects being led to believe that they have encountered extraterrestrials might fill in their stories with details recalled from science-fiction books and movies to which they have been exposed. And, despite some vigorous protests to the contrary (see Hopkins, 1987; Jacobs, 1992), science-fiction precedents can indeed be found for many aspects of UFO abduction stories (Bullard, 1989b; Evans, 1991; Hough & Randles, 1991; Vallee, 1990).

Kottmeyer (1989) provided the most thorough and compelling discussion of the influence of science-fiction stories and movies on the content of UFO abduction accounts, particularly with regard to the appearance of the aliens and their ships. For example, Kottmeyer convincingly argued that many aspects of Betty Hill's abduction experience derived from the movie, *Invaders From Mars*. Some of the features of her husband Barney's story, on the other hand, seem to have had their roots in an episode of the television program, *The Outer Limits*. One complaint about analyses such as these (e.g., Randles, 1988) has been that the alleged influences on abduction stories that have been identified are almost always quite obscure. That

they are quite difficult to dig up makes these critics suspicious; if people are just copying science fiction, why do they not mainly rely on the most well-known stories and films? As Kottmeyer argued, such arguments miss an important point: It is the very obscurity of these stories and films that allows them to seep into abduction accounts. For example, no one would take a person seriously who claimed he had been abducted by an alien with pointy ears who called himself Mr. Spock. Kottmeyer even described how a person at a UFO conference claiming a UFO experience was jeered by audience members who recognized similarities between his story and a "Coneheads" sketch on the television program, *Saturday Night Live*. Such stories are obviously never followed up on by investigators, and they never make their way into print. In fact, it is unlikely that anyone would ever report events with obvious similarities to events from hit movies or best-sellers. He or she would recognize the source of these spurious memories.

At this point, abduction tales receive enough media coverage and are so widely known that they themselves probably influence other people claiming to have been abducted. One psychotherapist (Cone, 1994) reported that "about 80 percent of the people who have come to me for help about abductions have read *Communion*, or seen a TV show about abductions" (p. 33). Klass (1988b) discussed the most notorious case—the Travis Walton abduction, immortalized in the movie, *Fire in the Sky* (Tormé, 1993). The events Walton described were said to have occurred a scant 2 weeks after the first airing of the television movie about the Hills' abduction story.

The influence of prior knowledge on memories constructed during hypnosis is especially problematic in the case of abductees. As already noted here, it is these people's interest in UFOs and related issues that often leads them to abduction investigators in the first place. Randles (1988) documented Strieber's interest in the subject of UFOs even before Strieber's alleged abduction experiences began, and Baker (1992b) showed that the same was true for Betty Hill. Others, however, have argued that media saturation with UFO lore is so extensive that specialized knowledge is unnecessary to flesh out a UFO abduction story. For example, in a study by Lawson and McCall (1978), volunteers who claimed to have little knowledge about UFOs were hypnotized and asked to imagine encountering one. They were then asked a series of specific questions about the objects and entities inside the UFO, and they were also asked to describe the kinds of experiences they might have on board. These subjects were asked a series of (purposefully) leading questions, so this is not a satisfying test of how well the average person can spontaneously flesh out the UFO abduction script (Randles & Warrington, 1985). In addition, there were only eight subjects, so

one should generalize from this demonstration with caution. Still, many of the details in the stories of these imaginary abductees are quite similar to those found in the stories of people claiming to have actually been abducted (see Bullard's, 1989a, analysis). For example, the imaginary reports included lying on a table while blood samples were taken and genital examinations were carried out.

Hypnosis and certainty. Although hypnosis does not enhance accurate memory, it does increase a person's confidence in the accuracy of material recalled while in that state, regardless of whether the memories are real or just pseudomemories. In other words, confabulations subsequently seem to be as real and true as veridical memories (M. T. Orne, 1979; Sheehan, 1988a). As already argued, certainty might be enhanced when abduction memories are constructed with what seems like minimal pressure and directiveness from others. Therefore, not only might hypnosis play a role in leading people to create spurious memories of UFO abductions; hypnosis might also facilitate the process of coming to believe that these inventions reflect genuine, actual experiences.

Summary: Hypnosis and abduction memories. Hypnosis is not a magical tool for recovering inaccessible memories. Many sources of bias are present when recall is attempted in this state. Furthermore, as Bullard (1989a) noted, "abduction research contains almost every possible pitfall of hypnotic investigation" (p. 13). (For critiques of the "crude techniques" used by abduction investigators, see also Vallee, 1988, 1990.)

Despite this evidence, and despite explicit pleas from within the UFO research community not to use it carelessly (e.g., Schwarz, 1979), hypnosis continues to be seen by UFO abduction investigators as a robust pipeline to the truth. Some have claimed to believe that material revealed by hypnosis is true by definition and that the technique derives its effectiveness from the fact that the subconscious mind acts as "a tape recorder" (see Lorenzon & Lorenzon, 1977, p. 75; also see Fiore, 1989, p. 325; cf. E. F. Loftus & G. R. Loftus, 1980). Others have professed more awareness of the pitfalls but still utilize flawed procedures (Coscolluela, 1993). In short, there is increasing evidence that hypnosis does not simply reveal the UFO abduction phenomenon—it plays a major role in producing it (for similar issues in the study of multiple personality disorder, see Ganaway, 1989, 1992; W. C. Young, 1988).

Recall Without Hypnosis

As noted, some UFO abduction experiences have been recalled without the aid of hypnosis, and great importance has been placed on this fact by those who

have argued for the literal reality of abductions. Baker (1992b), however, minimized the importance of these cases. Given his definition of *hypnosis* as the use of suggestion to stimulate a person's imagination and relax reality constraints (see also Lynn, Rhue, & Weekes, 1990), Baker argued that it is not so surprising that abduction memories might sometimes be constructed without the aid of hypnosis. Enacting the kind of "imaginative role-playing" characteristic of hypnosis is possible even without intentional induction of a hypnotic state. In fact, E. F. Loftus (1993) reviewed numerous cases in which people had been convinced by therapists, family members, or law enforcement officials that they had experienced a traumatic event in the past. People in these situations use a variety of reconstructive strategies to shape the putative memories that fit the experience they are pressured into looking for. The key to implanting false memories, E. F. Loftus argued, is the protracted imagining of events in the presence of authority figures who encourage belief in and confirm the authenticity of the pseudomemories.

So profound is the influence of the expert or authority in charge of investigating the meaning of an anomalous event or disturbing memory that Ganaway (1989; see also Gardner, 1993) argued that the same case could end up being diagnosed as being due to an alien abduction, expression of a multiple personality disorder, or repressed memories of satanic cult involvement. The decisive factor might be the theory of the investigator. This is vividly illustrated by a description of a police interview of one Chad Ingram, as recently recounted by Wright (1994):

Then, in a painfully halting manner, he described vivid dreams he had as a child: "People outside my window, looking in, but I knew that wasn't possible, because ... we were on two floors and I would ... I would have dreams of, uh, little people ... short people coming and walking on me ... walking on my bed ...

"I couldn't talk. I couldn't move except to close the curtain," Chad went on. "The only thing I could feel is pressure on my chest." (pp. 62-63)

The law enforcement agents interviewing (or interrogating) Chad convinced him that this was no dream but instead was a repressed memory of abuse at the hands of his father. That is what they were looking for, insofar as they were developing a case for indicting his parents on charges of sexual abuse. Unfortunately, the narrative from Wright (1994) is quite plausibly a fragmentary memory of some hypnogogic/hypnopompic hallucination. Furthermore, given some of the details (i.e., little men somehow entering upstairs windows), it is also obviously a memory that could be interpreted as a prelude to a UFO abduction—given an investigator expecting to find that.

Finally, Ganaway (1989) described how some people can move into and out of hypnotic trance states

without the therapist or investigator even being aware that this is happening. These "spontaneous trance states" can occur even without the use of hypnotic techniques. There is also evidence that the ability to enter these states is related to stable individual-difference factors, and it is to one of these that we turn next. Some people might be more likely than others to construct pseudomemories of all sorts, including UFO abduction episodes.

Fantasy Proneness

Fantasy proneness is a personality construct developed by S. C. Wilson and Barber (1983) as a result of their research on a group of highly hypnotizable subjects. S. C. Wilson and Barber estimated that about 4% of the population can be confidently classified as fantasy-prone. People with a fantasy-prone personality have extensive and vivid fantasy lives, and they even report having trouble distinguishing between their fantasies and reality. Fantasy-prone subjects are more likely than others to report that they spent much of their childhood in a "make-believe world" interacting with imaginary playmates. As adults, they still spend large parts of their days fantasizing, and they claim to relive memories in all sensory modalities. Valid and reliable instruments are now available for measuring fantasy proneness (Lynn & Rhue, 1988). Although this personality profile is unusual, fantasy-prone people are more often than not well-adjusted and are not particularly likely to show significant signs of psychopathology (Rhue & Lynn, 1987).

There are several indications that UFO abductees are relatively high in fantasy proneness. First, given how many abduction memories are uncovered by hypnosis, it would appear that people constructing these memories are highly hypnotizable. Fantasy proneness is of course significantly associated with hypnotizability; indeed, for S. C. Wilson and Barber (1983), this was the hallmark of the fantasy-prone personality. Other recent studies have also confirmed this (e.g., Silva & Kirsch, 1992), although other researchers have cautioned that the relation might only be moderate (Lynn & Rhue, 1988). In sum, if those reporting UFO abductions tend to be fantasy-prone, this would explain their apparent hypnotizability.

Another piece of indirect evidence for a link between UFO abduction reports and fantasy proneness was provided by Ring and Rosing (1990), who found that UFO experiencers reported higher levels of abuse in childhood than did control subjects. Fantasy-prone subjects are also more likely than other subjects to report being physically abused as children (Lynn & Rhue, 1988).³ Irwin (1990) also reported that fantasy proneness correlated with a wide variety of paranormal beliefs. This finding sheds light on a fact that will be obvious to

anyone after even a superficial review of UFO abduction cases: Abductees are typically interested in all sorts of paranormal phenomena. Some claim to possess extrasensory and other psychic abilities (Bullard, 1989b), and others report that they often experience strange poltergeist-like phenomena (e.g., doors opening and closing, lights blinking on and off; Steiger, 1988). Subjects in Ring and Rosing's (1990) sample of UFO experiencers also reported other odd experiences and paranormal beliefs.

Empirical evidence of a link between fantasy proneness and abduction reports is admittedly scant. The first formal psychological assessment of abductees, by Bloecher et al. (1985), made use of the MMPI, the Rorschach test, and the Wechsler Adult Intelligence Scale but did not test for fantasy proneness. Hines (1988), however, summarized that report by noting that "these individuals have great difficulty in distinguishing reality from fantasy" (p. 201). Similarly, Parnell and Sprinkle (1990) concluded that subjects who claimed communication with extraterrestrials did not show severe manifestations of psychopathology but "had a significantly greater tendency to endorse unusual feelings, thoughts, and attitudes" (p. 45). In a novel study, Bartholomew et al. (1991) used archival material to determine the symptomatology of people claiming to have had extensive contacts with alien beings. Biographical information was available for 152 such people, and clear signs of fantasy proneness (e.g., interaction with imaginary companions, out-of-body experiences) were found in 132 cases (87%).

Efforts to establish a more direct link, however, have not been notably successful. Ring and Rosing (1990) and Rodeghier, Goodpaster, and Blatterbauer (1991) found no evidence that abductees are particularly fantasy-prone. But, as noted by Bartholomew and Basterfield (1990), Ring and Rosing did not utilize standardized measures; Baker (1991) also pointed out that Ring and Rosing's subjects did in fact seem to have fantasy-prone personalities in that they were shown to be highly imaginal. Rodeghier et al., although standing by their findings, still acknowledged that "all studies have without exception found some peculiarities of abductees that place them somewhere apart from the mass of normal individuals" (p. 62).⁴

³Note that we are taking no position on the causal processes underlying this relation. Although fantasy proneness might lead people to construct pseudomemories of abuse, it is also possible that the etiology of fantasy proneness involves childhood abuse.

⁴Most recently, Spanos et al. (1993) found that, among subjects who believed they had sighted or made contact with UFOs, fantasy proneness was positively correlated with the intensity and detail of their reported experiences. It is unclear, however, whether there were any abductees (as defined in the present article) in this sample. In addition, those reporting UFO experiences did not score as more fantasy-prone overall than subjects in a "nonexperiencer" comparison group.

