Psychological Correlates of the UFO Abduction Experience: The Role of Beliefs and Indirect Suggestions on Abduction Accounts Obtained During Hypnosis

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Abstract

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Reports of UFO abductions continue to increase in number in North America, the details of which are most commonly obtained in a quasi-therapeutic context, often involving hypnosis. In a series of studies at Concordia, we examined the phenomenology of these reports, the people who report them, and the roles which hypnosis and belief systems may play in such reports. Part 1 examined UFO abductees, and their experiences in the context of their hypnotizability, beliefs, and cognitive style. Our findings supplemented those of earlier studies (i.e., Spanos, 1987; Lawson, 1977) which indicated that, although abductees did not differ from the general population in terms of psychopathology, they did display different personality traits and cognitive styles prone to fantasty, conspiratorial thinking, and a higher degree of pre-existing beliefs in UFO-related phenomena. Part 2 examined the extent to which pre-hypnotic suggestions would be incorporated into hypnotic narratives of UFO abductions in a group of non-abductee volunteers. Suggestions resembling popular cultural aspects of abductions were incorporated into the hypnotic narratives of participants when they were asked to describe an imagined abduction experience. Part 3 examined the

extent to which such simulated reports can be distinguished from the claims of *bona fide* abductees. Transcribed portions of both imaginary and putative actual abduction accounts were rated as being real or imagined by trained clinicians, and educated non-clinicians. The mean accuracy of the raters at distinguishing actual accounts from imagined was 51%, or chance level. The results are discussed in the context of memory distortion and confabulatory processes, and the potential role hypnosis plays in exacerbating these processes.

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Gary Larson (the cartoonist) dedicated one of his books as follows:

"When I was a boy our house was filled with monsters. They lived in the closets, under the beds, in the attic, in the basement, and - when it was dark - just about everywhere. This book is dedicated to my father, who kept me safe from all of them."

Likewise, Mom and Dad. This is for you.

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In September 1961, Betty and Barney Hill were driving through New Hampshire on a return trip from a visit to Montreal. During the late evening hours, their journey was interrupted by an encounter that is now hailed as the most famous case of Unidentified Flying Object (UFO) abductions ever reported. A brief description compiled from later accounts can summarize how events allegedly transpired that night.

The Hills were driving on Route 3 beneath Cannon Mountain, near Lancaster, New Hampshire sometime after 10:30 at night. After watching what Betty Hill described as a cylindrical object with colored flashing lights through binoculars, they both became concerned when it appeared to approach their car. As it approached to within 100 ft. of their vehicle, Betty described it as being saucer-shaped, with a bright blue-white light emitting from the lower surface, and red lights flashing from the outer edges. Barney stopped their car, and got out to look more closely at the vehicle, while Betty remained seated inside. He saw what he described as strange faces staring down at him from a row of windows in the side of the craft. Panicking, he jumped back into the car and sped off. They hadn't gone far before they heard strange beeping noises coming from the trunk of their car. They both suddenly became very drowsy, after which things became very hazy until they returned to consciousness to the sounds of more beeping tones. They realized that they had traveled thirty five miles since the first set of beeps, with no recollections of the trip, and both their watches had stopped running. They later realized that their trip had taken two hours longer than it should have. Within ten days, Betty had begun experiencing nightmares of medical examinations on board a spaceship, and Barney suffered from insomnia, anxiety, and an ulcer.

This abduction report featured certain details that can be linked to other reports of UFO sightings, but with several added components which made their account even more compelling. Flying saucers had been seen and reported in North American skies since the end of the second world war, but few of them contained the direct contact and apparently biological procedures contained in the Hill's account. Although not the first of this kind of report, it was the first to appear widely in the American press. It appeared first as a story in the "New York Times" (April 13, 1965), then a year later as a popular book in 1966, aptly named "The Interrupted Journey" (Fuller, 1966), then a feature in "Look" Magazine, and then a made-for-TV movie in the mid '70's called "The UFO Incident". It has appeared in countless UFO enthusiast publications, and is cited as the mother of all modern UFO abduction stories. The reasons why this story became so famous have as much to do with its content, as how it came to be told.

Two years after their encounter, in late 1963, the Hill's agreed to be treated by hypnosis after suffering from strange fears and dreams they linked to the events that occurred during that car trip. They were seen by a well-known psychiatrist, Dr. Simon, who was practiced in the clinical application of hypnosis in an effort to discover the actual events of that night. For six months they worked together, engaging in hypnotic regression therapy, learning more about their abduction. Dr. Simon was never convinced that their abduction account was true, and continued to work with them in an effort to find inconsistencies in their accounts, and to reveal a more terrestrial explanation.

Although he found inconsistencies, Dr. Simon could not provide a single, cohesive, scientifically-based explanation for their story, although he postulated that they shared some form of hallucination. Information which had remained vague or "inaccessible" emerged in a veritable flood of emotions and details

during their hypnotic regression sessions in early 1964. Since Fuller published *The Interrupted Journey* in 1966, the phenomenon of UFO abductions has seen remarkable growth and the numbers continue to rise to this day. Surveys suggest that hundreds of thousands, possibly even a million persons in the United States alone may have been abducted by extraterrestrials (Jacobs, 1992). In the vast majority of these cases, the individuals, often referred to as "abductees"[1], undergo regression hypnosis, producing what are interpreted by the individuals and investigators alike as memories of abduction (George, 1995; Hough & Randles, 1994). The apparent success in producing a marked hypnotic response in both the Hills in 1964, and the deluge of 'memories' they produced meant that hypnosis became an integral part of the ritual, and was to be irrevocably linked to UFO abductions to this day. Consequently, this phenomenon and its close connection to hypnosis is of considerable scientific interest, and deserves rigorous scientific attention in the development of an adequate research paradigm for its exploration. Unfortunately, research in the domain of UFOs and UFO abductions is plagued by a number of problems, including a wide range in quality of existing studies, relatively few of which are adequate, strongly differing agendas amongst the researchers themselves, and an ongoing debate about what constitutes 'evidence'.

UFO Abductions: An Overview

The Hill's case was not the first UFO abduction of its type to be reported. On October 5th, 1957, a young rancher named Antonio Villas Boas, while driving a tractor in a field of the family farm near Francisco de Sales in Brazil,

[1] Although these individuals are referred to elsewhere using different terms, such as "experiencers" or "victims of CE4K", and many prefer not to be referred to as "abductees", the latter term will be used throughout this paper (as opposed to "those individuals who claim to have been abducted") for the purposes of brevity, consistency and clarity. The use of the term "abductee" herein does not, in any way, imply that these individuals have or have not actually been abducted by aliens.

was relieved of sperm in a forced copulation with a space woman. Though some may not view this as particularly sinister, the themes found in modern UFO contact stories are seen for the first time: forced abduction for the purpose of removed sperm and ova. Suddenly, in 1957, our otherworldly visitors apparently became less interested in conveying spiritual messages, and started grabbing unwilling subjects for reproductive experiments.

Villas Boas described a bright red light descend from the sky and grow larger as it swooped toward him. As it approached, it became clear to him that it was not a natural phenomenon. The egg-shaped craft hovered in front of him, then settled onto three legs. Mr. Villas Boas tried to escape, first on the tractor, which mysteriously quit, then on foot. He was overcome and overpowered by a group of small 4 ft. beings in gray outfits with gloves, boots, and helmets obscuring their faces. He indicated that he was carried against his wishes up a ramp and into the craft. There, he found himself in a small, brightly lit square room. The entrance to the room had closed so tightly that no seam was visible where the door should have been. One of his abductors indicated for him to follow into another room, which he did as he realized by this time that he had little choice in the matter.

This larger, oval-shaped room was, by his estimates, at the center of the craft, and contained a flared column running vertically from floor to ceiling at the center of the room. The only furnishings he could identify were several backless, swivel chairs, and a strangely shaped table to one side of the column in the room. There, he was detained for a time, then forcibly undressed, and coated with a thick jelly-like liquid which quickly dried. He was then led into a third chamber where tissue and blood samples were removed from him and he was left alone. While he rested on a couch from this ordeal, he noticed a vapor

coming from a tube in the wall, which made him suddenly nauseous. He went into a corner of the room where he was violently sick.

Finally, his solitude was broken by the arrival of a "beautiful", naked female being, who had human sexual characteristics, but did not seem to be entirely human (for more lurid details, see Hough and Randles, 1994). She initiated sexual contact, and after successfully arousing Villas Boas, and copulating with him, simply left in the company of one of the other male beings. Villas Boas was given his clothes, taken on a brief tour of the vessel, trying unsuccessfully to remove a clock, and was released back into the same field four hours and fifteen minutes later (Hough and Randles, 1994; Jacobs, 1992). He told only his mother of this encounter, and spent several months recovering from lethargy, skin lesions, nausea, headaches, insomnia, and rashes. His examining physician finally took the story to a journalist, who investigated and published it later that year. It came to the attention of the English-speaking media in a 1965 issue of the Flying Saucer Review (as cited in Hough & Randles, 1994).

This case provides a link between contactee reports (see below) and abductions, but does not fit perfectly with either scenario. Villas Boas had no gaps in his memory, recalling clearly being taken on board, while many later abductees report "doorway amnesia" with no recollection of how they entered nor exited the craft. The medical examinations central to most reports of abduction are present, but in this case, the sperm were taken in a quaintly old-fashioned method, whereas American abductions are characterized by more impersonal and technological means of extracting sperm and ova. In both kinds, however, there was a clear *need* for a Human by the aliens. This case was an interesting mix of the contactee style of encounter: walking up ramps, being given tours, being needed by the aliens involved, and remaining fully conscious

throughout the ordeal; and modern abduction scenarios: with forcible restraint, rough treatment, medical and reproductive procedures, and return without any proper explanation of action or motivation (Hough and Randles, 1992).

Even after the Hill's case had been made into a made-for-TV. movie in late October, 1975, reports of abductions remained relatively rare[2]. Hypnosis had already become the investigators' method of choice in uncovering abduction narratives, but reports continued to be viewed by the public with extreme skepticism until another prominent abduction case in Arizona captured the attention of American media. Less than one month after the Hill's story was aired on television, in November, 1975, Travis Walton was reportedly abducted while working with a seven-man logging crew in the Sitgreaves National Forest region near Snowflake, Arizona. As darkness fell, and the crew began the return drive to town, they saw a glow in the sky. As they proceeded, they found themselves directly across a clearing from a large blue diamond-shaped object hovering above the ground. While most of the crew reacted with fear, Mr. Walton did not, leaving the truck and approaching the object on foot. As he stood below it, the other witnesses reported that a beam of bright light seemed to transfix him. Then a bolt or ray of light shot out from the base of the object, striking Walton in the torso, and throwing him several feet from where he had been standing. Walton lay motionless, and his now-panicked fellow crew mates presumed he was dead and sped off. After several minutes, they calmed sufficiently to return to the site to reclaim their fallen friend, only to find the clearing empty of him or any signs of the hovering object (Hough and Randles, 1992; Walton, 1978).

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[2] By late 1975, perhaps a dozen, attested abduction cases had been documented by UFO investigators, including one that had been investigated by the government sponsored investigative team headed by Condon, in 1967. Within five years, this number would increase to over 200 (Hough & Randles, 1992), and by the early 1990's estimates place the frequency of this phenomenon at epidemic levels.

The members of the crew quickly came under suspicion of murder, despite their protests of innocence, and lie detector results (all but one of whom passed). The hostility of the community and media were matched by an equally vigorous search for Walton's body. After five days, Walton resurfaced in a nearby town, claiming to have just "woken", with little or no memory of the intervening time. Law officials were not satisfied, and continued to pursue criminal investigations even though murder was clearly not among the charges they could lay. Eventually, the criminal investigation was dropped, but UFO enthusiast groups moved in to pursue the story. Rivalries between organizations flared, and competition and discrediting campaigns abounded, bringing little of merit to the overall understanding of the mysterious events.

Mr. Walton claimed to have begun to recall certain aspects of his time in captivity, and underwent hypnotic regression session, in the year that followed, to fill in enough gaps to complete his book (Walton, 1978). Overall, however, the images he described, such as large hangars with many saucer-shaped craft within, and narratives of being probed medically by strange-looking aliens remained confused and fragmentary (Hough and Randles, 1992; Thompson, 1991). Though all members of that crew, including Mr. Walton, maintain that events transpired as they described them, this episode will continue to remain controversial because of the way in which investigations were handled, and the questionable motivations of all involved.

By the late nineteen seventies, Steven Spielberg's motion picture "Close Encounters of the Third Kind" (Spielberg, 1977) was sweeping box office profits and public attention throughout the western world. Fact and fiction were now irretrievably intertwined. The information in the North American popular culture was now making the characteristics of aliens, flying saucers, and abduction procedures almost standardized.

Abduction by extraterrestrials has become perhaps the most profitable means of reporting extraterrestrial contact, as well as the most potentially damaging to the lives of individuals making such claims (e.g., Fuller, 1966; Thompson, 1991; Walton, 1978). Although this is primarily a North American phenomenon (Bullard, 1987a, Randles, 1988), reports of UFO abductions come from a wide range of cultures, age ranges, race, and socio-economic categories, of kidnappings by non-Human beings (e.g., Fiore, 1989; Hopkins, 1981; Hough and Randles, 1994; Jacobs, 1992; Mack, 1994). Interestingly, almost no cases have been reported in Japan, India, Africa, or other eastern countries (Baker, 1997; Bullard, 1987a; Hough & Randles, 1994; Randles, 1988).

It is difficult to estimate frequency, but up until the 1980's, UFO abductions appeared to be an extremely rare phenomenon, with perhaps only a hundred cases reported. Already, a pattern in reports was forming, but this may be largely due to the fact that approximately 90% of these reports were from the United States (Gallup and Newport, 1991; Hough and Randles, 1994). In other parts of the world, reports tended to contain very different features. In England, for example, the few abduction cases reported featured tall, blond-haired aliens, similar to the "Nordics" described so often in the contactee reports of the 1950's, and the few reports from the Far East featured aliens only a few inches in height. South American countries reported many cases of abduction, but mostly from small, dwarf-like creatures covered in hair or fur. Some countries, such as Australia, still had no reported cases at all up until the late 1980's. These discrepancies in reported details were largely ignored by UFO enthusiasts, which focused on the American version of small gray creatures, due to their widely publicized profile (Randles, 1988). The popularization of the Hill's and Walton cases in print and television, along with the success of the science fiction film "Close Encounters of the Third Kind", seemed to cement this particular

extraterrestrial image into the public domain, either provoking, or permitting a large increase in the number of abduction cases being reported. More recent estimates of abduction frequency run from the thousands (Jacobs, 1992), into the millions (Hopkins, 1987).

Based on an unpublished survey of undergraduate students who completed a questionnaire constructed by Dr. D. Jacobs (1992), it was suggested that approximately 5.5 percent of them may have been abducted. Another survey of 275 respondents in a magazine poll estimated that 6 percent may have been abducted. On a national scale, this would mean that as many as 15 million people have been abducted in the United States alone. This is an astounding number given the marked lack of evidence of any kind for this phenomenon, other than anecdotal recollections. After having stated this figure, Dr. Jacobs then admitted that this number was ridiculously high. He arbitrarily estimated that a figure of 0.5 percent was more likely. Even still, this estimate would mean that the number of abductees in the United States alone exceeds one million. In a recent survey, using multiple indirect questions, (Hopkins, Jacobs, & Westrum, 1992) it was estimated that 3.7 million Americans had been abducted as of that year. If this estimate is correct, then 340 Americans have been abducted every day since 1961 (assuming they began that year), which represents an implausibly high number given the paucity of corroborative evidence (Klass, 1993). Klass (1993) has pointed out the many structural and methodological flaws in Hopkins and Jacobs' estimates, and their measurement scale dubbed the Unusual Personal Experiences Questionnaire (Hopkins, Jacobs, & Westrum, 1992), making it clear that these estimates should be considered neither realistic, nor reliable. Nevertheless, the existence of thousands of reports being collected by many investigators in North America, suggest that this phenomenon is more than the product of erroneous frequency estimates,

in that sufficient numbers of people are claiming to have been abducted to warrant examination.

An Emerging Pattern

Once an individual has come to suspect that they are the victims of alien abduction, the subtle cognitive process of building a case for or against such a possibility inevitably begins (see Laurence, Day & Gaston, 1998). The prevalent pattern seems to be that the abductee first suspects that the cause of their malaise is extraterrestrial in origin, leading them to seek out therapists or investigators who will share and validate these suspicions. But there are also many cases where an individual may arrive at a therapist's office without this suspicion, only to have the therapist offer alien abduction as a possible source for the pattern of symptoms. They then inevitably prescribe some form of hypnotic regression to uncover the as-yet unknown details. Clearly, the mere hint of this kind of possibility by someone in a position of power such as a therapist, can start the snowballing process of confirmatory bias, and fear in someone who has sought help for a psychological or emotional problem (Laurence, Day & Gaston, 1998).

However it is done, once the memory of the experience has been evoked, the pattern and images associated with an abduction seem to follow a fairly consistent pattern, given the diversity of individuals and circumstances from which the memories are produced. There are certain patterns found in almost all abduction reports (Bullard, 1987b; Fiore, 1989; Jacobs, 1992). These patterns do not necessarily lend credence to the reality of the experiences as much as they may indicate common cultural themes, the mode of evoking the memories, and the emotions they can produce (Spanos, 1997). In fact, reported abduction experiences are typically emotionally laden experiences. Individuals who claim to have recovered memories of abduction report highly emotional memories,

either as terror, or as feelings of reassurance and pacification, well-being and enlightenment. Sometimes the reports contain a mixture of the two extremes.

Common general features include sightings of vehicles of unknown origin, trips to these spacecraft, levitation or a sense of disembodiment, immobilization, interactions with non-Human beings, physical examinations, implantation and/or tissue extraction, reproductive or genetic manipulations, and telepathic communications (Fiore, 1989; Hopkins, 1981; Jacobs, 1992; Mack, 1994). North American abduction stories, as portrayed over and over again in enthusiast publications and on television, follow a fairly typical progression of their own (Bullard, 1987a; Hough & Randles, 1994): a solitary witness driving on a lonely road late at night observes a strange light in the sky. As the light approaches, their vehicle develops engine trouble, and quits. They either hear strange noises, or hear voices in their heads, before losing track of events for a period of time. When they return to themselves, they are often in a different location, and discover that there is a substantial period of time for which they have no recollection (this may be as little as fifteen minutes to several hours (Jacobs, 1992)). In the weeks that follow these events, the individuals often experience dreams or flashback images which hint at the hidden memories of alien contact (Fiore, 1989). At this point, if the individual in question hasn't already sought a hypnotist, hypnotic regression is commonly recommended by UFO investigators, and the case then follows the progression of techniques first used in the Hills' case (Hough & Randles, 1994).

A slightly different typical pattern emerges when one focuses on the sensations and emotions experienced by an abductee, rather than on interpreting a reconstructed chronology of events. To begin with, the abductee reports feeling a sense of foreboding, followed by a sense of presence. They may feel a desire to turn and look, to inquire, or to do just about anything, but are

somehow prevented from moving (Jacobs, 1992). This paralysis is one of the most common features of reported abduction experiences (Fiore, 1989; Mack, 1995). Interestingly, it is also a prominent feature of hypnopompic and hypnagogic sleep disturbances (see Rehm, 1991). Panic and fear are the most commonly reported emotions, most often brought about by the sense of complete lack of control in the experience. Despite common reports of reassurances by the beings responsible, the fear often persists throughout. Abductees also report feeling extreme vulnerability (removal of clothing), and personal/physical violation (close physical examinations, orifice-probing, injections, tissue-sampling, quasi-sexual or even blatantly sexual alien activities) dominating the bulk of the abduction experience, which may last anywhere from minutes to hours. The passage of time is, again, an important feature. It is this missing time which often leads the abductee to search for erstwhile events to fill that gap (see Baker, 1987; Reed, 1972 for a more complete discussion of missing time). There are also reports of being physically harmed during abductions, resulting in nausea, bruises, burns, and biopsy-like scars, and some reports of being healed of previously existing medical conditions. Whatever their intentions, it seems that the aliens engaging in these activities cannot simply leave their subjects as is.

A common theme in female abduction narratives is the issue of reproduction. Women claim to have had ova removed, to have been impregnated by aliens, or to have had their fetuses removed (or all of the above) on separate occasions (Hopkins, 1981). There have been several reports of individuals who were presented odd-looking genetic hybrid babies which the aliens presented as being the progeny of the abductees (Hopkins, 1981; Jacobs, 1992; Mack, 1995). Others have met more mature versions of this hybrid/progeny species during their abductions while being asked to hold,

cuddle, or even suckle these children. Investigators and abductees have interpreted these claims as evidence of a genetic/breeding program requiring the participation of women for their 'unique' nurturing qualities.

Others have interpreted the sexual content of abduction narratives for both men and women as a masochistic escape from self-awareness (Baumeister, 1988). In this view, self-awareness can become an aversive state (i.e, awareness of failures, pressures and expectations, the desire to obtain the more pleasant states associated with being un-self-aware) from which individuals may wish to escape. Masochism, usually associated with sexual masochism, can also include substance abuse, eating disorders, and suicide. Masochism, in its various forms, appears to have escape from the self, or escape from self-awareness, at its root (Newman & Baumeister, 1994). Sexual masochism is based on three central features: pain, bondage (or other loss of control elements) and humiliation. The parallels between this and the features of UFO abductions, according to Baumeister (1988), are not accidental. He suggests that the hallmarks of both appear so congruently because they both serve the same motivational function: "....to achieve a release from selfhood by being thoroughly dominated by others. For some people, these desires are expressed in the form of sexual fantasies and occasionally sexual behavior. For others, they are expressed in the way the hypnotized (or free associating) mind fills in details to elaborate some confusing impressions into a spurious memory of mistreatment by alien beings" (Newman & Baumeister, 1994). Perhaps a masochistic desire for escape from awareness of the self is at the root of some aspects of the typical pattern of UFO abductions.

Other common aspects of abduction reports involve being shown apocalyptic images of humanity's future, or images of other idyllic worlds (Fiore, 1989; Mack, 1995; Walton, 1978). These images appear as either three

dimensional images in the mind of the abductee, or as part of a slide show-like presentation on a variant of the projection screen. Presumably there is some intent to instruct, or enlighten the abductees about our future here on earth. However this intent is inconsistent with the actions of said extraterrestrials, who later usually attempt to block or remove all memories of these otherwise important lessons.

Once the idea of having been the victim of an alien abduction has become part of the abductee's thinking, it becomes very difficult to supplant it with more mundane explanations. Moreover, the same suspicion becomes easily crystallized as the abductee attends to patterns of their memory, or their aspects environment which serve to confirm it. This process of arriving at, and confirming a label for a given symptom has been shown to be quite resistant to change (Dumont, 1993), in both patient, and mental health professionals, creating an anchoring effect that will then be vulnerable to the various heuristics responsible for judgment errors.

The UFO Connection

Unidentified Flying Objects are presumably craft visiting us from either different planets, different times, different dimensions, or all of the above. Since sightings began, a number of even more remarkable experiences have been reported in the same context of UFOs, namely contact with and abduction by the occupants of these very same, elusive craft. Several attempts have been made to explain the appearance of such a phenomenon, yet none of these completely and/or satisfactorily encompass all aspects of UFOs and abduction accounts. This failure applies regardless of the origin of the theories, whether from the debunker camp or that of the true believer.

UFOs are just that: Unidentified. We bring to them our expectations, interpretations and beliefs. The mystery behind the phenomenon remains a deeply shrouded enigma, despite the numerous sightings and detailed claims of contact. Little or no tangible physical evidence supporting claims of sightings, contact, or abductions exists. Crop circles, photographs, and occasional rashes or scars notwithstanding, the number of contact claims, although still small in number relative to the population as a whole, have failed to produce any compelling scientific evidence of the existence of UFOs. This scarcity of evidence has not impeded the popularity, nor the credence acceded to such claims, even if the claimants themselves become somewhat stigmatized. The lack of evidence for the existence of most religious deities have not stopped people from believing in them either.

Although the modern view of UFOs, as technologically advanced, intelligently controlled, extraterrestrial craft, has only been popular during the past fifty years, people have been witnessing objects which defied identification in our skies for thousands of years. Over the ages, the explanations for these objects have ranged from the sublime, to the patently absurd (e.g., see Vallee, 1976; Wilkins, 1954). These sightings, such as the flying shield described by Roman Legionnaires seen in the sky over Arpi in 216 BC. (Livy, 1919), bright "angelic" glowing globes seen over Basel, Switzerland in 1566 (Hough & Randles, 1994, p. 10), the mysterious airships seen in the skies of North America in the final years of the 19th century (Bullard, 1982; Hough & Randles, 1994, pp. 16-17), and the ghost rockets and foo fighters reported during the years prior to and during the second world war all bore the hallmarks of the current UFO phenomenon. They were often seen by small groups of individuals, if not by solitary individuals. They were poorly understood scientifically. Their reports were often distorted (if not blatantly invented, as many of the airship accounts

turned out to be), and they were described in a context which reflected the culture of the time. The cultural context imbued these mysterious events historically with first religious, then supernatural, then technological qualities[3].

Since the end of the nineteenth century, UFOs were described in terms of a graspable, but as yet unavailable technology (Clarke, 1986; Bullard, 1982). Although crude powered dirigibles appeared in 1852, they remained an unproven technology until more reliable flights were made in 1903 (Hough & Randles, 1994). The wave of sightings of mystery airships of the late 1890's preceded the advent of heavier-than-air flight technology by several years. This rash of reports, covered lavishly in the newspapers at the time, may have been the fabrication of overzealous editors (Klass, 1974), or a reflection of a society coping with rapid and dramatic technological change (Bullard, 1982; Jacobs, 1976). The change that the advent of reliable flight offered society (as well as telephones, electricity, and horseless carriages) fueled much speculative writing and inspired hopes of change that was the source of stress and excitement of that particular time (Neely, 1979). Interestingly, the mystery airships were generally reported, and viewed by the public, as the creations of inventors and daredevils, not extraterrestrials.

The fascination with technologically advanced vehicles in our skies did not disappear after the turn of the nineteenth century. Strange, slowly descending fireballs were witnessed by several people in the Struma Valley in Bulgaria in 1913 (Hough & Randles, 1994). Other strange objects were seen in the skies over Romania in the summer of 1914, and again in 1915. These metallic objects, spherical in shape, were described as having an exhaust-pipe like protrusion which left a trail of sparks as it passed overhead, bending trees in its turbulent

[3] Indeed, these post hoc interpretive attributions may be better described as cumulative than sequential, as many continue to view the strange occurrences in our skies as religious, supernatural, and evidence of visitation from technologically superior beings.

wake. Craft were also reported to have been seen in England and South Africa during the years that followed this. In 1926, in Romania, farmers reported seeing a spear-like craft flying over their fields, only to discover that any farm animals unfortunate enough to have been nearby had been killed and singed. This may have constituted one of the first official reports linking the observation of strange lights in the sky with nearby animal deaths and mutilations. For the most part, these sightings were attributed to either terrestrial, or supernatural forces, but not extraterrestrial beings. The trend toward the extraterrestrial hypothesis had not yet grown strong enough to capture imagination of the general public, nor the attention of the media.

Also during the year of 1926, a young man in Lancashire, England witnessed what he reported as three men in silvery suits, wearing doorknob-shaped helmets with large, owl-like eyes peering into a window. He saw the three individuals while walking past the building into which they were looking. they heard him approach, turned to face him, and began to approach him. He fled far and fast, but became convinced that these were not "men" in the terrestrial sense, and continued to swear to the veracity of his report throughout his life. Although not strictly a flying craft sighting in nature, this observation seems to stand out in today's UFO historical mythos, as the point in time at which occupants of UFOs were attributed extraterrestrial origins, and marks the time of birth to the extraterrestrial hypothesis for UFOs. This encounter also points to some of the typical characteristics given to extraterrestrial beings, suggesting that these characteristics have been part of modern western lore as far back as the mid-nineteen twenties.

During the mid to late 1930's, UFOs took the form of ghost rockets and super planes. It has been proposed that whatever was seen was given these attributes because these were the fastest growing and most experimental

airborne technologies of the time (Hough & Randles, 1994). Then, during the years of the second world war, interest in UFOs became a part of military agendas, as well as the general public's (Good, 1987). For the first time in history, large numbers of people were in the skies at all times of the day and night, flying bombing, interception and reconnaissance missions over Europe and the Pacific. Not only was this period unprecedented in terms of the numbers and altitude of observers, but the very survival of the air crews depended on their keen-eyed observations of the skies around them, taking eyewitness accounts beyond the realm of accidental encounters. What they often observed became known as "foo fighters", after English and American fliers mangled pronunciation of the French "feu" or fire descriptor. Reports became disturbingly common, and similar: pilots and crew were observing bright, glowing balls of orange, red, or white light, seemingly under intelligent control (Wilkins, 1954). These lights would follow, or fly parallel to an airplane for a time, then veer off and disappear in the distance. At first it was thought that these represented some form of enemy secret weapon designed to foil radar or discourage crews with their superior maneuverability, however, similar reports emerged from the airforces of all forces involved in the years following the war. No explanation for these strange lights was ever found, but as the war ended, and military air traffic began giving way to civilian flights, the tone of UFO sightings changed.

In 1947, civilian pilot and businessman Kenneth Arnold was flying over the Cascade mountain range in Washington State when he saw 9 strange gleaming objects flying in the distance (Story, 1980; Vallée, 1965). He surmised immediately that these were unconventional craft, due to the uneven, or "skipping" path of their flight, and the apparent fantastic speed at which they traversed the distance between Mt. Ranier and Mount Adams 45 mile to the

south. His report to the media described the craft as being flat, like a pie pan, made of brightly reflective metal, and he described their motion in flight as comparable to a saucer if skipped across the water. The label "flying pie pans" was never mentioned again, even though this was how he described their appearance, but the saucer image stuck in the imagination of the news reporter, and quickly became the new standard description for anything generally falling into the UFO category.

The Arnold sighting was the first modern UFO sighting to reach the western world. It sparked a media frenzy, public interest, and the beginnings of official (but not always public) government interest in this phenomenon. Grassroots investigations and conspiracy theorists, research and interest groups, television and movie studios all quickly joined the fray, creating a new social myth with unprecedented force and speed. The reasons for the level of interest in this phenomenon may be manifold, but the mark left on western popular culture has never faded.

Contactees as predecessors to abductees

As sightings of flying saucers increased in number in the late 1940's, reports of contact with extraterrestrials were becoming more common through most of the 1950's. However, before the more sinister type of encounter seen in contemporary abductions arose, contact with the occupants of flying saucers was a far more pleasant and innocent occurrence. These reports most commonly took the form of communications, or meetings for the purposes of transmitting special spiritual messages to humanity from "Space Brothers" (Hough & Randles, 1994; Thompson, 1991). The contactees, such as George Adamski (Adamski, 1955; Good, 1983), Daniel Fry, Frank Stranges, or George King all came forward in the early 1950's claiming to have had direct contact with the

occupants of flying saucers from other worlds (Stacy, 1988). These individuals fueled the suspicions of many North Americans that the flying saucer craze was the product of unchecked imaginations and a few unstable individuals seeking to profit financially, or become cult leaders (Thompson, 1991). The contactees were described as being both sincere and sincerely deluded; they were more in touch with their imaginations than with reality (Hough & Randles, 1994). In a sense, the timing and nature of these reports is not surprising, given that contact seems like the next logical, progressive step after visual sightings and reports of landings. The media also served a strong role in thrusting these individuals into the spotlight, as sightings became less and less newsworthy. Novel twists in UFO stories were sought in order to maintain the public's interest. However, the same media frenzy that spread the news and popularity of saucer sightings throughout the western world also served to embarrass those seeking to seriously study and legitimize the UFO phenomenon.

The stories of the contactees are seen by members of the UFO community as examples of richly imaginative fabrications at best, and blatantly opportunistic frauds at worst (e.g., Hough & Randles, 1994; Stacy, 1988). Their stories are described as a mixture of conscious and unconscious deceit, and naive romanticism. David Jacobs wrote that,

> ..the contactees had no fear of ridicule and eagerly sought publicity. They often organized special flying saucer clubs based on their experiences, and used the clubs to help publicize their stories....Some contactees claim to have taken a ride in a flying saucer and described the ride and the planets they visited in great detail. Moreover, most contactees reported that the space people had charged them with a

mission, which, they said, was why they had to seek publicity. (Jacobs, 1975).

Seeking publicity was something they did exceedingly well, much to the chagrin of the more serious-minded UFO enthusiasts. Indeed, they might have been little more than a footnote in the history of the UFO phenomenon had they not be so successful at generating public interest. The contactees, more than any other group, helped establish certain aspects of the flying saucer phenomenon in mainstream cultural lore, using their newfound star status. UFOs became synonymous with flying saucers, not simply unidentified flying objects, such as bolides, meteorites, atmospheric phenomena or experimental aircraft. An entire nation was now familiar with the idea that flying saucers were extraterrestrial vehicles, and their occupants were perhaps more like the benevolent Klaatu from the film "The Day the Earth Stood Still", than the destructive Venusions from "Earth Vs. The Flying Saucers" released the same year. Some enthusiasts maintain that the encounters the contactees described were genuine, or that they were, themselves, innocent dupes of deceitful aliens. But most admit that the contactees were simply storytellers who got carried away. They are dismissed by most, as non-authentic, cultists, and wishful thinkers. They are usually downplayed by UFO enthusiast organizations bent on gaining credibility and legitimacy, and they are probably largely responsible for the delusional or eccentric image assigned to UFO believers by most non-believers. However, they served an important role in the evolution of the UFO phenomenon, as a whole, and the abduction phenomenon, in particular.

It has been suggested that their role in popularizing certain UFO myths relieved a certain amount of tension the western world was facing at the dawn of the atomic era and the height of the cold war (Thompson, 1991; Kottmeyer,

unpublished). These tensions also had to do with frequent and lurid reports of UFO sightings, and a seemingly endless supply of alien invasion movies (Kottmeyer, unpublished). Despite the often absurd claim of the contactees, the comic relief they supplied was, nevertheless, relief.

The similarities between the claims of contactees and claims of abductees outweigh their differences. In a sense, the contactees laid important foundations, upon which the abductee phenomenon could be clearly and credibly established. They claimed to have been selected for direct, individual contact by aliens claiming to be unready or unwilling to make their presence known publicly. The aliens with whom they had contact seemed to come from different species, all of whom were far more technologically advanced than us. They returned with strong moral messages relating to the situations with which their society was trying to cope, such as nuclear weapons testing and proliferation, cold war secrecy, and our first forays into space. Their stories were met with derision by non-believers and debunkers, but there were enough believers to reinforce and bolster their perceived cause.

Modern abduction stories, beginning with the Villas Boas case of 1957, the Hill's in 1961, and then the Walton case in 1973, have a different overall tone: the individual was not (apparently) specially selected and tasked with a mission, they were simply conveniently available for acquisition, experimentation and return. But the fact that modern abductions are typically much darker, more frightening, and involve a (presumed) medical experimentation agenda may simply reflect a shift in the concerns of a public become more distrustful of the political and scientific forces in their lives. The fact that modern abductees seek less publicity, or seek it in different ways may reflect lessons learned about credibility and legitimacy from the 50's. In other words, the little-believed contactees of the 1950's may be the direct predecessors of the modern UFO

abduction phenomenon, which continues to enjoy remarkable degree of credibility in the public domain, given the continued lack of evidence.

Symptoms

Those individuals who identify themselves as abductees are often people who initially sought help for persistent anxieties or forms of psychological discomfort (Newman & Baumeister, 1994). Too often, they have been convinced by UFO enthusiasts/believers that recovery from their anxiety begins with the uncovering of memories of their abduction experiences. Unfortunately, if the cause of their anxiety truly lies in an abduction, it is hard to imagine that establishing the belief that they have been taken against their will, tormented, and humiliated, and that this may occur again without warning, can help them in any way (Newman & Baumeister, 1994). If untrue, this process will not alleviate their anxieties by creating victimization where there was none.

Regardless of the reality or unreality of these visitations, the lives of many people have been deeply affected, benefited, disturbed, and even destroyed by the effects of this phenomenon (Fiore, 1989; Mack, 1994). Whether these episodes are psychogenic or whether they are based in reality, they result in a wide variety of very real symptoms: including sleep disturbances, night terrors, unexplained new phobias, disorientation, sense of missing subjective time, or terrifying memory fragments of the procedures. A large proportion of abductees claim to suffer after the experience, either in the form of ongoing feelings of anxiety, fear and isolation, or in bizarre physical symptoms. Abductees often claim unexplainable headaches, nosebleeds, muscle cramps, vision problems, genital discomforts and even unexplained pregnancies (Hopkins, 1987; Jacobs, 1992).

Some aspects of abductions, such as communication, seem to have more positive effects on the abductees, much like their contactee predecessors indicating that they've been touched by something greater than themselves (Ellis, 1988). These effects may leave the abductee changed as if by a visionary experience (Lukoff, Zanger, & Lu, 1990). Some abductees claim to have been irreversibly improved by their experiences, having found new metaphysical meaning in their lives, or achieving new insights into themselves and the world around them (e.g., Mack, 1994). These aspects of abduction reports are not unlike those reported by individuals having experienced mystical or religious revelations (Lukoff, 1985; Persinger & Lafrenière, 1977). They also echo the claims of the contactees from the 1950s. In fact, in his beautifully presented photographic essay, Douglas Curran documents a religious anticipation in many of those who embrace, or have been touched by beliefs in the UFO phenomenon (Curran, 1985). Clearly, there are religious motives behind most of the beliefs in UFO occupants as saviors, coming like angels from the skies. But the quasi-medical and reproductive aspects reported are uniformly negative, even terrifying, leaving abductees with symptoms resembling Post-Traumatic Stress Disorder.

The aftermath of an abduction experience has been described by Westrum (1986) as being similar to the symptoms of Post-Traumatic Stress Disorder, as seen most frequently in victims of disasters and in soldiers who have been exposed to the horrors of combat (Jacobs, 1991; Zweig, 1992). Westrum (1986) coined the label Post-Abduction Syndrome (PAS) and described a series of symptoms to look for: Sleep disturbances (most commonly seen as a fear of going to sleep and nightmares relating to abduction experiences), anxieties and/or depression, missing subjective time, and psychosexual dysfunction. Fiore (1989) produced a list of symptoms as being tell-tale signs of UFO

abduction, including persistent nightmares and/or dreams of UFOs and/or aliens, and reacting with fear of and/or anxiety about UFOs and/or Extraterrestrials[4]. This list is an example of the very poorly conceived diagnostic criteria for syndromes and phenomena whose existence is questionable.

Table 1

Symptoms Indicative of UFO Abduction
(as established by Fiore, 1989)

1) Inability to account for periods of time
2) Persistent nightmares and/or dreams of UFOs and/or aliens
3) Sleep Disorders
4) Waking up with unusual bodily sensations
5) Appearances of mysterious marks on the body
6) Feeling monitored, watched and/or communicated with
7) Repeated sightings of UFOs
8) Vague recollections of a close encounter
9) Unexplained healing of ailments or afflictions
10) Reacting with fear of and/or anxiety about UFOs and/or ETs.

[4]Prior to her interest in UFO's, Dr. Fiore wrote about reincarnation, prior lives, and spirit possession (see Fiore, 1980; 1979). The list of symptoms for these phenomena bear a striking resemblance to those listed for UFO abductions, raising questions of selectivity and specificity in her symptom criteria.

The poor definition of symptoms, over-inclusiveness, and lack of selectivity and specificity make it clear that just about anyone can make a case for having suffered from the disorder/syndrome in question (see also Bass & Davis, 1988).

Cryptomnesia and Culture

The possibility of the existence of extraterrestrial life is not new to our culture. Percival Lowell announced his discovery of canals on the surface of Mars at the turn of the last century, sparking a popular wave of speculation on the nature of the red planet's inhabitants. People began to report contacts with aliens around this time, most of whom identified themselves to the witnesses as Martians. At the turn of the century, French psychologist Théodore Fluornoy (1911; 1963) chronicled his studies of a French-speaking medium who claimed to be in contact with Martians when she entered a trance state. She drew pictures of Martians (very humanoid), and presented their alphabet and language (remarkably like French), among other aspects of Martian life, during the course of her trance connections. Numerous other encounters with mystery people and star dwellers from Mars are documented (Sagan, 1995). Once Mars and Venus were unveiled as places hostile to life such as our own, reports of Martians and Venusians waned dramatically. Extraterrestrial contacts did not decrease, however. They simply started giving more distant home addresses.

Cryptomnesia is the correct recollection of material which has incorrectly been attributed to new experiences. It defines the process behind confabulation: the incorporation of material which has been seen or heard before, but without the proper knowledge of its source. Belgian sociologist Bertrand Meheust, studying science fiction literature, found that stories of adventures on other worlds, encounters with alien life, and travel through space were an integral part of the nascent science fiction and fantasy pulp industry in the years between

the World Wars (Meheust, 1978; Thompson, 1991). Meheust discovered an account of alien abduction, in which M. Belans, a Belgian, was encountered a strange being while walking near Brabant, an area where farmers had reported strange patterns of crushed vegetation in their fields (Meheust, 1978). M. Belans saw an individual dressed in black apparently waiting under a tree. Curious about him, he decided to stop and watch this individual, when he suddenly became overcome by a sensation of fatigue. He felt as if he were no longer in control of his actions. A strange buzzing sound began, followed by a very bright light which came from an elongated craft which landed nearby. A rectangular door opened in the side of the vehicle, and the man in black proceeded to step inside; M. Belans felt compelled to follow. Once inside the craft, M. Belans observed an even illumination without an apparent source. He was greeted by a tall thin man, who seemed to know M. Belans thoughts, spoke his native French, and revealed that his race originated in a distant star system. When Belans was returned, he became aware of a significant period of time for which he had no recall (sounding markedly similar to the common them in abduction narratives known as missing time).

What is perhaps most remarkable about this account is not only its date, 1934, predating the Hill case by twenty-seven years, but the fact that it was a science fiction story entitled, "Hodomut, Man of Infinity", published that year by Ege Tilms (as cited in Thompson, 1991). In fact, this is one of many stories of its kind appearing in science fiction print dating as far back as the 1918 which include features of modern day abduction accounts. Such features included strange aerial vehicles stalling cars, chasing trains and cars, paralyzing people with beams, and abducting individuals into their craft. Other science fiction stories with more general abduction themes go back as far as 1880 (Thompson,

1991; Kottmeyer, unpublished). Perhaps stories such as these had an unsung role to play in the birth of contemporary abduction narratives.

Randles (1990) described another case of claimed abduction, in which a woman awoke with memories of having been taken up a ramp into a UFO, then medically examined by aliens with leathery skin who smelled like cinnamon. She was able to recall one of these aliens by name: Gerard. Her convictions of the reality of these extraordinary events were unshakable, until it was found that the details of her account matched an episode of the television show 'Dynasty' which featured a UFO abduction sequence. The 'abductee' in question had watched that episode the night before she claimed these events happened, but did not consciously make the connection between the show she had watched, and the content of her dreams until she was helped to do so by an investigator (Randles, 1990).

An interesting study by Ballester Olmos also supported the link between popular culture and UFO abduction experiences (as cited in George, 1994). He charted the frequency of abduction reports worldwide from 1957 (starting with the Villas Boas case) to 1985, and found that increases in abduction reports were usually preceded by a rash of sensationalistic magazine and/or newspaper articles, book releases, and television shows on the subject. Klass (1988) also found that each release of a hit book, or movie dealing with UFO abductions has been followed by an increase in the frequency of reports. Indeed, there may be a link between reports of alien contact, and other world events. Simón (1979; 1981) found mixed results when he tried to correlate release of UFO-related films, and report frequency. The problems he encountered in his 1979 studies were methodological, relating to the time taken to produce films, the distribution of release dates, variations in film quality and consequent appeal to the public, and variations in theater-run durations (Simón, 1979).

Methodological corrections produced a correlational trend in the amount of interest in UFOs after UFO-related film releases, but statistical flaws relating to the underlying experimental assumptions[5] altered their claims (Simón, 1981). Simón (1984) later clarified and summarized his findings, suggesting that there is a strong indication that the rate of UFO sightings fluctuate systematically according to the quantity and quality of coverage in the mass media.

Hysterical contagion (Smelser, 1962; Rosnow & Fine, 1976), and the spread of rumor, gossip and hearsay, although rare, may contribute significantly to this phenomenon, as it has to others reported in historical and psychological literature (Mackay, 1841). The process in which people come to believe that something has happened to them because they are aware that it has happened to someone else is a very real phenomenon, and has direct relevance to the UFO abduction phenomenon. In 1954 there were several reports of a mysterious force that was causing windshield pitting epidemic in Seattle (Medalia & Larson, 1958). Though no such force was ever found, people became sensitized to this occurrence through the media and, upon examining their windshields closely, discovered the previously unnoticed pitting described. They had the pits as "evidence" that something was amiss, and the story of the force (a by product of radiation, as suggested by a radio commentary) to "explain" it, ignoring the possible explanation of normal wear and tear on windshields often leaving hard-to-notice pits.

In a small clothing factory in Georgia, in 1962, employees complained of a rash of insect bites (Kerckhoff & Back, 1968). They claimed that mysterious, unseen insects were biting their hands and faces, but no one could describe or capture one of the insects. All they had was their perceptions of an effect (bug

[5] Simón (1984) noted that the assumptions for the tests on the data set of his earlier work did not apply, and were unecessary due to the dramatic changes evident in the data. The initial assumptions were that the number of UFOs remained stable, but that the public's interest in them fluctuates according to specific events in that culture.

bites), and the story of infestation which seemed plausible. Both of these incidents were geographically and temporally limited. They required some form of evidence requiring explanation (pitting or bug bites), and a subsequent explanation that fit the concerns of the populace at the time (in the one case, the population of Washington state were concerned with atomic tests taking place in the Pacific; in the second, poor work conditions in an enclosed space were the concern).

It may be that similar processes are at work in the UFO abduction phenomenon, on a grander scale. Scale, it seems, is the argument used by UFO advocates against the process of social contagion (e.g., Jacobs, 1992). Abductees, it is argued, do not know one another, and are not in close enough proximity to spread rumors. Jacobs (1992) also argues that abductees do not engage in mutually reinforcing behavior, that they are usually isolated, and that their stories are generally not publicized. However, the issue of scale (or distances) seems irrelevant when the cognitive and social processes involved in the spread of the phenomenon are the same. Abduction stories are part of the popular culture and social consciousness. No one who has access to the media of popular culture (radio, television, books, magazines) can be said to be isolated from the forces which propel rumor and the contagion of ideas (Mackay, 1841; Smelser, 1962; Rosnow & Fine, 1976). Moreover, abductees do, in fact, engage in mutually reinforcing behaviors. From the moment that the narratives are "recovered", they are being reinforced, either by the other individual(s) present, or by the abductee's own motivations, be they convictions, desires, or fears. They often seek out support groups, organizations, and conferences all of which serve to reinforce the validity of their narratives (Klass, 1988; 1990). Finally, individual stories may not be publicized in the immediate newsworthy sense that they were in the 1950's with contactees, but they are often made public in

the various enthusiast publications, UFO organizations, or support groups (Klass, 1990). Whether they are formally published or not, they contribute to the existing lore by adding to the number of reports. The increasing number of such reports is often interpreted as proof of their reality by many believers (e.g., Jacobs, 1992; see also Newman & Baumeister, 1994). Unfortunately, simply producing more claims does not make it so (recall the childhood story of "Chicken Little").

It is quite possible that similar social psychological forces were at work at the time of the first North American abduction reports as well. The Hill's report arrived at a time when popular interest in space travel, and the public's combined fascination with, and revulsion of technology were peaking (Thompson, 1991). The space age, and the atomic age were in full bloom. The cold war was an entrenched part of North American ideology. Racial tensions within the United Sates were reaching their climax, and the fact that the Hills were an inter-racial couple, a relatively uncommon occurrence at that time, may have sensitized them to the social forces at work (Thompson, 1991).

Although the social tensions of the day, and the existence of abduction-like science fiction stories before abduction reports became common, help call into doubt the reality of modern UFO abduction, it would be equally inaccurate to suggest that the science fiction stories of the 30's and 40' or the films of the 50's and 60's simply planted the idea for UFO abductions. That conclusion would be unwarranted, given that several accounts arise from individuals or cultures which had not been exposed to those science fiction motifs (such as the Villas-Boas case). It is more likely that the interaction between what is portrayed in the popular culture, and what is claimed as reality is more complex than a simple either/or proposition. However, such stories do raise concerns about the possible role of cultural influences, or other "UFO precedents" in the abduction

phenomenon. The chicken-egg issue of whether the cultural stories reflect claims of actual events, or vice versa remains insoluble, but clearly creative thinkers have been writing about such possibilities since before the turn of the century, long before the emergence of contemporary abduction accounts.

Views on UFO abductions: Modern Myths, Mass Hysteria, or Extraterrestrials

Historically, visitations by smaller meddlesome creatures at night have been reported in some form or another by most cultures, either in their religions or in their folklore. Traditional folklore from the original tales such as brothers Grimm, (not the modern, sanitized Disney-esque fairy tales) actually described elves as having large enigmatic eyes, large smooth heads, and long fingers (Zipes, 1992). These descriptions bear a remarkable resemblance to the common depiction of current UFO occupants (Brin, 1994). Indeed, stories of non-Human interactions with Humans go back as far as recorded history, such as in Genesis 6:2 it is written: "That the sons of God saw the daughters of men that they were fair, and they took them wives of all which they chose" may be included as part of the mythology of visitations by beings with some sort of breeding program in mind. That they were referred to as the "sons of God" suggests that they were seen as beings which were superior to Humans. This has also been interpreted by UFO believers as an indication that UFO abductions have been taking place for a very long time. Pre-nineteenth century Europe was filled with thousands of reports of contact with, and abductions by fairies who took their victims to underground lairs for nefarious meddling, or lesson-teachings (e.g., Evans-Wentz, 1909; Creighton, 1965; Vallée, 1969; Zipes, 1992).

Such occurrences throughout history could be taken as support for the notion that such alien visitors have been manipulating our fate for much longer than we've known, or that such mythical figures have been a part of the

twilight fears of humans for a long time, and have been incorporated into the content of our magical thinking lore. Whether these stories are interpreted as historical evidence for alien abduction, or as evidence that modern abduction accounts are merely modern day, high-tech fairy tales is a matter of perspective and belief.

Thompson (1991) has argued that the UFO phenomenon represents a modern day allegory to the Protean myth; Proteus being the trickster, or the Greek god capable of appearing in a variety of shapes. It is an interesting, and informative description given that many UFO stories cannot be cleanly dismissed or explained in conventional terms. The extraterrestrial hypothesis for their origin, at the same time, cannot be supported by the paltry evidence at hand. The very elusive nature of these mysterious events puts them in the same mythological category as Proteus: enigmatic (Thompson, 1991).

Thompson (1991) also has described the alien abduction experience as a modern-day initiation experience. His views that the abduction experience shares structural aspects with initiatory experiences is based in many abductee reports that their sense of self and world is transformed in a saltatory, consciousness-changing way (e.g., Mack, 1994; Sprinkle, 1976). These personal changes in abductees may be the programmatic work of aliens bent on raising consciousness in Humanity, but they may also be the result of individuals reacting to perceived encounters with a mysterious events beyond their ability to explain (Klass, 1990; Meerloo, 1968; Nadon & Kihlstrom, 1987; Newman & Baumeister, 1994; Randles, 1990). Carl Jung (1959) wrote about the newly emerging phenomenon in the '50's:

> If it is a rumor, then the apparition of discs must be a symbol produced by the unconscious. We know what such a thing would

> mean seen from the psychological standpoint. If, on the other hand, it is a hard and concrete fact, we are surely confronted with something out of the way...The phenomenon of the saucers might even be both, rumor as well as fact (Jung, 1959).

Jung explored the possibility that not only could a primary perception (i.e., something actually seen) could be followed by a phantasm (fantasy imagery), but that fantasy material could invade the conscious mind, particularly when vulnerable such as during quasi-conscious states, to produce believed illusions and visions.

Jung was the first reputable scholar to note the parallel between the patterns seen in the burgeoning UFO phenomenon, and in religious and mythological motifs. The rounded "ships" for example, resembled the recurring image of the mandala across cultures; the symbol associated with psychic totality, or the Self (Jung, 1959; Zwieg, 1992). The highly sexual nature of abduction experiences may also be the product of deep seated psychosexual issues (e.g., Baumeister, 1988; Newman & Baumeister, 1994). According to Jung, UFOs have the symbolic characteristics of something "procreative" or "penetrating". He also wrote that religious texts often portray the receiving of god as allegorized in a sexual or quasi-sexual act[6].

Although his views do not reflect the current thinking that this phenomenon is a complex interaction of belief systems, expectations, sleep-related imagery, and common cognitive errors, Jung was able to bring a psychological explanation to bear that did not depend on psychopathology. As descriptively useful as it may be to discuss the UFO and alien abduction

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[6] It must be noted at this point that those seeking alternative explanations for abductee reports should not interpret sexual content in such reported experiences as covert evidence for past episodes of any kind of sexual abuse (Zweig, 1992).

phenomenon in symbolic or mythological terms, it does not advance our understanding of the process of how such accounts come to be firmly believed by so many.

Abduction Explanations: The Experts

A number of UFO researchers and experts (often self-proclaimed as such) have already written extensively about the abduction experience. Although proportionately few individuals have reported abductions, the volume of such reports, the attention these reports garner, and the potential implications of their claims merit closer examination. What is perhaps most interesting about each of the "experts" discussed below, is that their different individual views about the nature of the abduction phenomenon are so remarkably supported by the cases they describe. In other words, those investigators who view abductions negatively, or as part of a nefarious scheme to manipulate Humanity's genes, invariably obtain just such types of accounts when they uncover memories of abductions (e.g., Hopkins, 1981; 1987; Jacobs, 1992). Those investigators who hold more positive, or spiritual views about the nature of UFO abductions (e.g., Mack, 1992; Sprinkle, 1976) tend to have far more cases from whom those very themes arise. Klass (1988) observed this pattern, noting that most hypnotists working in the UFO field were not professionally qualified in hypnosis and were, themselves, believers in the literal reality of abduction reports. Klass felt that these 'researchers', many of whom have claimed to be abductees themselves, could have influenced susceptible subjects to confabulate and fantasize about the sorts of abduction scenarios they were expecting. These influences would occur as subtle cueing during discussions prior to hypnosis, and leading questions both prior to and during hypnosis (see also Laurence, Day & Gaston, 1998). Subsequently, the subjects would come to believe in the reality

of their fantasies as memories recovered during hypnosis, and then be encouraged and validated for doing so by the hypnotist and other abductees (Klass, 1988; George, 1995).

In a test of the importance of bias effects in investigators employing hypnosis, Bullard (1989) analyzed a large database of abduction reports, material according to the experience level of the hypnotist, and whether the hypnotist believed or disbelieved in the reality of abductions. He found the same basic features and themes in the stories, regardless of the hypnotists' beliefs or the procedures. He concluded that hypnosis, the experience level, and beliefs of the hypnotist make less of a difference than Klass claimed. However, a closer examination of the key investigators (believers) who are viewed as experts by most enthusiasts, may reveal a clearer relationship between what they believe, and what they obtain in the course of their investigations. The influence of bias can be both strong and subtle (Laurence, Day & Gaston, 1998).

Dr. Leo Sprinkle (see Sprinkle, 1976) was one of the first individuals to take a long-standing professional interest in UFO abductions. He took up the mantle of hypnotic regression from Dr. Simon (of the Hill's case) as an investigative tool in 1968, while participating in the famous Condon research program at the University of Colorado (Hough & Randles, 1994). He found the results of his hypnotic regression sessions interesting enough to focus a considerable portion of his career in that area. He continued to investigate the abduction phenomenon as a serious-minded psychiatrist, bringing both legitimacy and belief-based error to the growing phenomenon. The thematic thread through much of his personal research had a positive spiritual ethos: The abductions, according to Sprinkle, were akin to providing a small alien-assisted boost up the ladder of spiritual evolution. Many of the individuals in his cases claimed to benefit from their abductions, having gained, or enhanced their psychic abilities,

or developed strong interest in spiritualism, and environmental activism (Hough & Randles, 1994; Sprinkle, 1976).

Although Budd Hopkins (1981) has no scientific background, nor professional psychological, psychiatric, nor hypnotic training, he followed Dr. Sprinkle's (and incidentally, Dr. Simon's) lead, making the use of hypnosis an expected necessity when investigating claims of abduction. Unlike Dr. Sprinkle, Hopkins, a New York based artist of some renown, chose a highly public forum in which to present his ideas. He published two popular books, outlining his theories and inadvertently (or perhaps intentionally) effecting the general course of abduction reports (Hopkins, 1981; 1987). His lack of medical training, and continued reliance on regression hypnosis to recover memories of abduction have been the focus of criticism from both serious UFO investigation groups and skeptics alike (Hough & Randles, 1994). British UFO enthusiast organizations have declared a moratorium on the use of hypnosis in abduction-related work, in deference to the continued warnings of unreliability and confabulation from the scientific and forensic communities. North American abduction investigators, following the lead of Hopkins, have chosen to ignore this advice.

Hopkins' proliferative work in abduction research, and apparently good intentions have secured him a solid following of believers despite the arguments against him. He continues to advocate the use of hypnosis to uncover memories of abduction in his personal and professional quest to understand the alien agenda. Unlike Sprinkle, however, Hopkins has concluded that the extraterrestrials are far more devious and dangerous than previously thought, speculating that they are engaged in a genetic interbreeding program for the purposes of enhancing their own race, or for better controlling our own. The majority of cases he has reported follow this very pattern.

Streiber (1987; 1988) wrote extensively about his personal experiences of contacts and abductions with beings he describes vaguely as extraterrestrial. His 1987 book *Communion: A True Story* quickly became a bestseller. Portrayed as nonfiction, it helped bring the abduction phenomenon into the cultural mainstream. His personal accounts of abduction, obtained during hypnotic sessions with a psychiatrist, had a distinctively complex flavor, giving the alien beings spiritual qualities, and impenetrable motivations. They were imbued with both whimsical and nefarious attributes, having many of the Protean or trickster qualities described by Thompson (1991), some of the devious nature of Hopkins' gene stealers, and Sprinkles spiritual benefactors. Ultimately, Streiber's writings, although often very confusing, have the flavor of a spiritual encounter, in which new levels of meaning are awakened in Streiber's life. His books are an interesting blend of the negative, quasi-medical abduction themes seen in contemporary abduction writing, and the spiritual themes found in the earlier contactee movement.

Strieber's (1987; 1988) experiences began when he became deeply upset by disturbing dreams of small people in his room, examining him while he was immobilized. These dreams persisted, along with frightening images which occurred to him in flashes, and feelings of being observed. His concern that he was faced with only two possibilities, when considering his symptoms (either madness or being a true victim of abduction) is a common error in abduction claimants and UFO investigators alike. Unfortunately, he never considered a third, more plausible, and likely less disturbing possibility: that there were other, more complex psychological processes at work. It may be that he was either a fantasy prone person, or he suffered from hypnagogic or hypnopompic hallucinations as part of a sleep disorder which could have also produced such

images (see below). In fact he exhibited all of Wilson and Barber's (1983) criteria for Fantasy Prone Personality.

The Fantasy Prone Personality (FPP) has been touted as the most likely candidate for a common psychological characteristic amongst abduction claimants (Bartholomew, Basterfield & Howard, 1991). A fantasy-prone individual is someone who has a strong imagination; who may weave elaborate fantasies around internal sensations or external messages; who will typically be highly hypnotizable (or at least highly suggestible), and who will have a strong tendency to confound fantasies with true memories when recalling the past (Baker, 1994). Individuals with this cognitive style, or personality are able to correctly identify fantasy and reality in the present (i.e., they know when they are fantasizing, and when they are reacting to real situations), but they tend to confound the two retrospectively.

Wilson and Barber (1983) have suggested that approximately 4% of the population may fall into the category of fantasy prone personalities (FPP), ranging in degree from mild to intense. The category itself was discovered during an investigation of female subjects who had been assigned to categories determined by their "excellence" or "non-excellence" as hypnotic subjects. Subsequent research from broader samples have supported their findings of such personality types. FPP individuals themselves (92%) estimate that they spend over half of their working day fantasizing as opposed to 0% of controls (Wilson & Barber, 1983). FPP individuals also report having very rich sensory experiences while watching television, often participating in the televised conversations. They also report that their fantasy experiences occur involuntarily (automatically) and are "as real as real" in all sensory modalities. Normal, high-FPP individuals report having had extremely vivid imaginary play as children, believing in imaginary friends, bestowing qualities of living

beings on dolls, etc. and later as adults report proportionately more psychic, paranormal, or mystical experiences than non-FPP normal controls (Wilson & Barber, 1983).

It makes sense that the similarities in FPP individuals, and UFO abduction claimants would implicate this syndrome as a viable area of investigation. The study by Bartholomew et al. (1991) supported the notion that the majority of UFO abduction claimants fit Wilson and Barber's (1983) criteria for fantasy proneness. The role of culture and the world view of FPP individuals will likely become more important as this area of research continues to be expanded. As is the case in much of the research in this area, the picture is not clear about what constitutes FPP, but there does appear to be a relationship between FPP and the abduction experience, in that the vulnerability factors for both closely resemble one another. It appears that Streiber's experiences provide an excellent example of this relationship. During a hypnotic session (with Budd Hopkins), Mrs. Strieber was asked about some of her husband's visions. She commented that "...Whitley saw a lot of things I didn't see...I knew it wasn't real". Many of the features of Strieber's reports follow those of hypnopompic imagery (to be discussed later), but it is interesting to note that the possibility that his experiences were imaginary was already well known to his wife. Streiber may, conversely, have experienced an acute, or transient mystical experience with psychotic features (Lukoff, 1992) which would also have resulted in the constellation of experiences he reported.

The very fact that these possibilities were not considered as valid explanations for his symptoms may have rendered the entire experience more disturbing and ultimately more disruptive to himself and the lives of his family, as is often the case of those who report abduction experiences as being very unpleasant, even traumatic. The explanation he accepted, suffered

through, and wrote about was of real alien abduction. This notion gained extensive popularity as his books sold well, and his story reached an even greater audience as a feature film in 1989. David Jacobs (1992) has also investigated and written about the abduction phenomenon, offering similar explanations for abduction accounts as Hopkins. Dr. Jacobs' background as an assistant professor of history at Temple University has brought a certain amount of credibility to those investigating this phenomenon, but his unmistakable personal beliefs color the quality of his writing and his attempts at critical analysis. For example, in his book Secret Life, he stated:

> In 1987 Hopkins published *Intruders: The Incredible Visitations at Copley Woods*, which for the first time revealed the extent of the UFO phenomenon's intrusion into peoples' personal lives. Hopkins found that, in addition to examinations, victims described aliens performing genetic experiments on them that included the taking of ova and sperm. He uncovered the idea that aliens were having the abductees physically interact with odd-looking babies presumably grown at least in part from the abductees' eggs and sperm. He also began to realize the extent of victimization that had occurred among abductees as a result of their experiences. The people he investigated were traumatized individuals whose lives had been profoundly affected by their abductions. (Jacobs, 1992, p. 46).

In the section of his book entitled "Answers" (p. 283-304), Jacobs attempted to address various common explanations for the UFO abduction experience that are not in keeping with his beliefs. He raised each of the major arguments

against the extraterrestrial hypothesis, including psychological, psychiatric, cultural, and exotic explanations. His attempts to discuss each of these possibilities is cursory at best, often devoting little more than a paragraph to each. Jacobs' attempts to bolster his views on the reality of abductions made use of another common but flawed argumentative technique: insisting that a given scientific explanation account for all of the collected accounts of abduction. This strategy runs counter to the statistical (not to mention common sense) notion that several factors may be involved, each accounting for their own unique portion of the phenomenon. However, this exigency does favor his own theorizing, which can become convoluted or expansive without cost, since it is an untestable hypothesis. With the exception of the more bizarre alternative explanations, his biases impeded his ability to successfully refute most of the psychological, psychiatric and sociological evidence regarding the abduction phenomenon.

Mack (1994) is another contemporary academic who turned his professional attention to the abduction phenomenon. An award winning author, and psychiatrist associated with Harvard University, he brought his full academic credibility to bear when he co-orchestrated an international symposium on the abduction phenomenon at the Massachussetts Institute of Technology in 1992, and when he published his book *Abduction: Human Encounters With Aliens* two years later. His work with abductees followed a very similar pattern to those investigators preceding him: He began to feel that a certain number of his patients were describing symptoms and memory fragments that did not fit with any disorder known to conventional psychiatry. His willingness to entertain unconventional explanations, along with his open disdain for the limitations of modern western philosophy and scientific thought led him to conclude that these individuals' stories were based on encounters

with non-Human beings from either other worlds, or other dimensions. Dr. Mack became a strong advocate for the actuality of these encounters with beings from other realities, hypothesizing that they were far more advanced, and therefore engaged in a benevolent agenda.

> In addition, many abductees, including the cases discussed in this book, appear to undergo profound personal growth and transformation. Each appears to come out of his or her experiences concerned about the fate of the earth and the continuation of Human and other life-forms. Virtually all the abductees with whom I have worked closely have demonstrated a commitment to changing their relationship to their earth, of living more gently on it or in greater harmony with the other creatures that live here. Each seems to be devoted to transforming his or her relationships with other people, to expressing love more openly, and transcending aggressive impulses. (Mack, 1992, p. 398)

These are indeed laudable changes if they are related to abduction experiences, and one would hope that more people would be abducted were it the case. However, it is far more likely that these individuals are expressing views, changes, and philosophical trends that reflect their own, or Dr. Mack's morality. Whether these views were shaped through interactions with Dr. Mack, or whether he was sought out once they became aware of his views (through his pacifist writings and anti-nuclear weapons activism), it seems implausible that they are the result of alien abductions. It would be a remarkable coincidence that each investigator should encounter only such cases as reflect their own personal, philosophical views on the nature of the abduction phenomenon.

Perhaps the more mundane possibility that each is seeing what he or she expects to see. Dr. Mack also wrote:

> My own impression, gained from what abductees have told me, is that consciousness expansion and personal transformation is a basic aspect of the abduction phenomenon. I have come to this conclusion from noting in case after case the extent to which information communicated by the alien beings to experiencers is fundamentally about the need for a change in Human consciousness and our relationship to the earth and one another. (Mack, 1992, p. 399).

Mack is a well-meaning and educated individual, and he clearly felt that he had come across a profoundly important issue in UFO abductions. However, his personal belief in the reality of the abductees' claims clouded his critical analysis of these events. The passage cited above, while it is more likely a revelation of Dr. Mack's own views than those of any alien's, is important for another reason. It describes the process by which he came to believe in the things his patients were describing.

Narratives as reality

The stories we tell each other, and ourselves, about the experiences in our lives are highly interpreted, reconstructions based in fact, lore and fiction (Sarbin, 1986). Like memories, they comprise fragments of actual experiences, and substantial amounts of material designed to link the fragments in consistent, logical and plausible ways. Narratives make up the basis of much of Human history and culture, in that everything from myth and folklore, to

biographical accounts are stories told which follow narrative structures[7] (Mishler, 1986; Sarbin, 1986). For millennia, the telling of stories was the primary means of transmitting history and knowledge from generation to generation, and continues to be a compelling part of how we interact socially. Sarbin (1986) described the narrative as the foundation for understanding Human psychology, and asserted that it acts as the metaphor through which we are able to comprehend the world. By extending this logic, it is reasonable to assume that there is a strong tendency to accept narratives as valid when they follow the general narrative structures, and are presented to us in a sincere way.

Stories told in the context of therapy are often exempted from scrutiny of verification, simply because their veracity does not often enter into the therapeutic mission (see Laurence, Day & Gaston, 1998). However, when narratives lead to claims which require legal action, this mission changes, and blind acceptance of narrative content as a 'given' is no longer sufficient. When individuals' narratives make claims that lean toward the bizarre, but which are unverifiable (such as abduction by extraterrestrials), then the process of verification rests on the assessment of the therapist based on their personal beliefs (i.e., the existence/nonexistence of aliens, their benevolence/malevolence, etc.), their views of what may or may not be plausible or possible, and whether they determine the narrator to be sincere. 'Truth' then rests with another individual who is equally subject to the same biases, errors in judgment, and cognitive distortions.

Decisions by therapists and professionals, based on opinion, or clinical judgment have been shown to be notoriously flawed (e.g., Dawes, 1994; Laurence, Day & Gaston, 1998; Legault & Laurence, 1996; 1997). What

[7] Narrative structure refers to the basic mores of story-telling, in that there is an object, a sequence of actions, a logical, chronological progression, and a plausible (or at least possible) outcome or denouement.

information will be retained (availability heuristic), what links are made between narratives and symptoms (representative heuristic and illusory correlations), and how these links will be fed back to the client (confirmatory heuristics) are continuously at play in the interaction between therapist and patient (Laurence, Day & Gaston, 1998). When the "fundamental attribution error" (Nisbett & Ross, 1980) is added, that is "the assumption that behavior is caused primarily by the enduring and consistent dispositions of the actor, as opposed to the particular characteristics of the situation to which the actor responds" (p. 31), then they are more likely to believe not only in the narrative as presented, but in their own evaluation of its veracity.

The content of the narrative, combined with the apparent sincerity of presentation, and the ad hoc evaluation of the narrator's psychological makeup serve as the basis for assessing the reality versus the fabrication of claims of UFO abduction. Each stage of this evaluation process contains numerous vulnerabilities for error. These errors have likely contributed to the beliefs of each of the abduction investigators mentioned above, and their tendency to accept the narratives presented to them at face value. Their beliefs, in turn, may influence the development of beliefs in other individuals seeking an explanation for hard-to-comprehend symptoms, images, or feelings.

Regardless of how they arrive at their beliefs, individuals who openly claim to have been abducted are almost immediately subjected to suspicions of mental illness, personality disorder, or hoaxing. Although the phenomenon has uncovered its share of hoaxers (see Hough & Randles, 1994; Jacobs, 1989; Randles, 1989; Scheaffer, 1991), it is a relatively small minority when compared to the number of people who genuinely believe in their claims. The search for psychopathology or personality disorders amongst abductees has proven relatively fruitless, as will be discussed below (Bartholomew, Basterfield, &

Howard, 1991; Ring & Rosing, 1990; Rodeghier, Goodpastur, & Blatterbauer, 1991; Spanos, Cross, Dickson, & DuBreuil, 1993). However, there is evidence supporting the claim that the beliefs of abductees play a large part in their claims.

Abductees and Psychopathology

Several investigators have sought to identify a specific personality type that is prone to report, or produce these types of experiences (Bartholomew, Basterfield, & Howard, 1991; Ring & Rosing, 1990; Rodeghier, Goodpastur, & Blatterbauer, 1991; Spanos, Cross, Dickson, & DuBreuil, 1993). There are no indications to date that UFO abductions are restricted to any type of person or walk of life. Some attempts have been made to present the personality profile, or the psychological status of claimants by observing said individuals, and noting their position in the community. Vallée and Olmos (1979) cited studies in which the majority of individuals claiming to have sighted UFOs were white collar, professionals, or individuals frequenting remote areas. Nothing about these individuals seemed pathological, nor unusual. Some studies have similarly found no pattern of pathology in claimants (e.g., Sprinkle, 1976; Schwarz, 1983), whereas others have suggested that *some* nonspecific form of mental illness is a factor in such individuals (e.g., Grinspoon and Persky, 1973; Meerloo, 1968).

As more research is conducted, and methodology improves, it seems that there are fewer indications that people who witness UFOs and/or are abducted have any sort of distinguishing psychological problems (Bloecher, Clamar, & Hopkins, 1985). A study by Parnell and Sprinkle (1990) found no indications that the extraordinary claims of UFO experiences could be attributed to psychopathological conditions, but the mean scores of their subject pool did

show some interesting characteristics on the personality scales used (MMPI and 16PF). Their participants exhibited a greater tendency to question authority. They also tended to be subject to situational pressures or conflicts, to be self-sufficient, and to be resourceful. They were of above-average intelligence, in general, tending to be assertive, experimental thinkers but with somewhat reserved attitudes tending toward defensiveness. No overt psychopathology was found in Parnell and Sprinkle's (1990) sample of UFO contact/abduction claimants. They did, however, have a greater likelihood to endorse unusual beliefs, to be suspicious, to be creative or imaginative, or to possibly have schizoid tendencies.

The implications of this finding of schizoid or near psychotic tendencies was unclear in Parnell's interpretation, but may relate to Lukoff's (1985) findings concerning mystical experiences, and the kind of individuals prone to them. Typically, individuals who experience mystical experiences do so within an existing framework of spiritual beliefs, one which permits them to contextualize the experience in a beneficial way. Abductees may undergo similar processes, within a different context. By placing the locus of control outside of themselves, and not attributing the potentially ecstatic or growth-inducing mystical experience to their own spiritual life, they become victims of something much greater than themselves. The experience would still be emotionally powerful, but may become negative with the loss of control. In a sense, the abductees may simply lack the spiritual context or inner language for safely containing a mystical experience. The experience may be contextualized as something extraordinary, a part of their beliefs about extraterrestrials and conspiracies, and the source of a number of unpleasant symptoms. Recovering aspects of the mystical experience during hypnosis may work simply by providing the claimant a forum for incorporating the experience in a personally

acceptable way. As an explanation for abductions, this leaves something to be desired, but it is a concept which is amenable to investigation. The mystical experience can be operationalized and coded for, it is cross-cultural, and it shares many features with reported abduction experiences.

Truly rigorous empirical studies of alleged abductees are rare, not only due to the rarity of individuals claiming to have seriously experienced abduction, but also due to general stigma attached to the investigation to such claims. At the same time, there is often a lack of scientific rigor in the training and practices of those who conduct such investigations. One exception to this was a study recently conducted by Spanos, Cross, Dickson, and DuBreuil (1993) at Carleton University. This study is of particular interest due to the manner in which it approached the more commonly accepted psychological explanations for this phenomenon. Beginning from the premise that UFO abductions are a socio-psychological phenomenon, and not a reflection of actual alien visitation, they sought to test the hypotheses that abductee claimants are a) psychologically disturbed or pathological in some way or another, and b) that claimants are highly imaginative, easily hypnotizable and fantasy prone.

Spanos *et al.* (1993) tested 176 adults, 49 of whom reported having UFO experiences (recruited through the newspaper), 53 volunteer controls from the community, and 74 university students, on a series of well-accepted and valid psychological tests and semi-structured interviews. These tests measured such areas as psychopathology, cognitive abilities, social and emotional stability, and fantasy proneness. Of the 49 UFO experienced individuals, 18 were assigned to a UFO-non-intense subgroup (those who had only seen lights in the night sky and who scored low on the belief intensity dimension), and 31 were assigned to a UFO-intense group (who scored much higher on emotional and reality scales). Both of these UFO groups held significantly more exotic beliefs than those in

either of the comparison groups. They also scored higher on five of the psychological health scales used, suggesting that there is no indication of pathology in those claiming to have had UFO experience, contrary to commonly held belief. If those who claim to have seen or had contact with UFOs are not suffering from any form of deviation from psychological health, then they might be more prone to confound their fantasy-like imaginings with real memories.

In this study, the authors found no group differences on the temporal lobe lability scale, on hypnotizability measures, and on three of the imaginal propensity scales used, all of which are measures which might reveal fantasy proneness. This is in direct contrast to the findings of Bartholomew's research group which had found that UFO abduction claimants more closely approximated fantasy prone normal individuals than to a non fantasy prone control sample (Bartholomew, Basterfield, and Howard, 1991). The Spanos *et al.* (1993) group did find significant differences between the two UFO subgroups (intense vs. non intense) with respect to their experiences. UFO-intense subjects reported that their experiences were sleep related more often than non intense subjects.

The authors interpreted these findings as failure to confirm either of the hypotheses. UFO abduction claimants are neither more pathological, nor are they necessarily fantasy prone. The only finding that did differentiate the control vs. UFO claimant groups were their beliefs about UFOs and their beliefs in the reality of alien life forms (likely to have existed long before the putative experiences, according to the authors).

The Spanos *et al.* (1993) study contributes to what we know of the personality types who report having had UFO abduction experiences (and who believe in the extraterrestrial hypothesis, incidentally) in that we can no longer

easily assume that those reporting such experiences are sick or deluded in any way that differs from those who do not report such incidents. The fact that abductee claimants have not been found to be any more disturbed than the rest of us should not, in any way, be taken as evidence validating the existence of UFOs or aliens. What is of importance is that this research leads away from the notion of psychopathology in abductees, and toward other psychological processes such as false memories (e.g., Loftus, 1979; Neisser & Harsch, 1992), belief systems (Fishbein & Ajzen, 1975), sleep disturbances (e.g., Rehm, 1991), neurological anomalies (Persinger, 1984; 1989; Persinger & Lafrenière, 1977), other cognitive errors (Eysenck & Sargent, 1982), or other states (Lukoff, 1985; Lukoff, Zanger & Lu, 1990).

The absence of marked psychopathology, but the presence of bizarre beliefs are predictable corollaries to those researchers who are familiar with work in the realm of parapsychology (Broughton, 1991; Edge, Morris, Palmer, and Rush, 1986), or anomalistic research (Eysenck and Sargent, 1982; Nadon and Kihlstrom, 1987). Few who are familiar with the social psychological aspects of the false memory syndrome, or the role theory (e.g., Sarbin & Coe, 1972) are surprised by the conclusions of the Spanos *et al.* study (1993), that claimants are not pathological, but foster bizarre belief structures. Clinicians, researchers, and theologians have long been aware that odd beliefs or delusions are not necessarily an indication of psychopathology, but may have a considerable impact on the behaviors and perceptions of individuals embracing those beliefs.

Beliefs and Attitudes

Individuals who report abductions often do not recall any actual specifics of what has happened outright. Rather, they experience some symptoms, such as strange dreams, missing time, unexplainable physical sensations or new fears,

or even markings, and then they search for the cause. Sometimes the actual symptoms are very subtle; little more than a sneaking suspicion that something unusual has happened. Often, they connect these symptoms with UFOs after the fact. In many cases, they are helped to make the UFO connection by way of the popular culture (books, TV. shows, movies, etc.), or therapists who share these beliefs (Day & Laurence, 1996; Laurence, Day & Gaston, 1998).

Bizarre, or even delusional beliefs are, in fact, commonplace, and unless they disrupt one's ability to adjust socially and emotionally, they may actually be a useful strategy for coping with life stresses in much the same way that religious beliefs may shield the faithful from the complexities and perceived cruelty of life (Alcock, 1989; Humphrey, 1995; Nadon & Kihlstrom, 1987; Sagan, 1995). It is often easier, or more cognitively parsimonious to create a simpler understanding of the workings of our world, than to attempt to grasp all of its complexities. Even when not motivated by cognitive laziness, a lack of education or scientific understanding has not hampered Humanity from devising its own versions of how the world works, in order to fill in the "cause" part of a "cause-effect" mystery. Mythology (Campbell, 1986; 1990), folk tales (Zipes, 1992) and old wives' tales are examples of our search for ways to impose meaning, order, consistency, and at least illusory predictability on an otherwise complex and confusing world.

It would seem, then, that the personality profile of the abduction claimant is not going to clarify the mystery behind this phenomenon in any immediately useful way, at least not as a group-defined psychological marker. It may be more productive to examine belief systems, cognitive styles, and experiences that may incorporate delusional beliefs in otherwise normal individuals in certain specific circumstances (Snyder, 1984). A 1987 poll has shown that 9% of American adults had reported seeing something they thought was a UFO, 49%

(half of the population!) thought that UFOs were real whereas only 30% were convinced that they were imaginary. Clearly, belief in the possibility of extraterrestrial life, or belief in ongoing alien visitation, are large parts of today's socio-cultural makeup. Whether this form of belief is sufficient to evoke experiences of abduction is unclear, as the specifics of what the various abductees actually believe differ as much as the individuals themselves. However, it is possible that this may provide a rich medium, from which such claims can emerge. Religious beliefs have always shaped the experiences of visionaries throughout history. The saints, angels, fairies, leprechauns, or even Virgin Mary's of the past may be developing far more extraterrestrial characteristics as we move through the latter half of the twentieth century. The lines between what is accepted reality, what is popular culture, and what constitutes delusion and fiction become more and more blurred (Irwin, 1993).

Beliefs themselves represent the information a person has about an object or subject (Fishbein & Ajzen, 1975). This level of information does not necessarily influence whether a person will respond to that object favorably or unfavorably, but they do link the object to attributes, or behaviors in which the individual will engage. Beliefs are formed as individuals create links between any two aspects of their perceptions of the world. Descriptive beliefs develop from directly perceiving things in the world, whereas inferential beliefs arise from links made between beliefs and other beliefs. The distinction between these two types of belief formation is somewhat arbitrary. Trait-based and attitude-based inferences also contribute to this process, but it is a useful distinction when examining the possible origins of beliefs that seem so far removed from that which can be readily observed in our world. Beliefs are not uniform in their importance to individuals either. The more salient the belief,

the more likely it is to influence the formation of an individual's attitudes, and subsequently, the directions of their behavior (Fishbein & Ajzen, 1975).

Attitudes, much like belief systems, are the filters through which we perceive and experience the world. They are based on the evaluation of the attributes of the object in question (beliefs). They are defined as a learned predisposition, permitting individuals to respond in a consistently favorable or unfavorable manner with respect to a given object (Fishbein & Ajzen, 1975). Much of the information one considers for interpretation and decision making is already highly interpreted. One's attitudes about the world help in the interpretation of present and past. Allport (1968) wrote that "...attitudes are the most distinctive and indispensable concept in contemporary American social psychology". Although they are described in such terms as predispositions, or mental sets, they are less consistent than these descriptors would indicate. They are more like general behavioral dispositions subject to many levels of specificity. They are distinguished from traits in that they are learned, or more fluid in nature than traits.

Attitude research has touched nearly every aspect of psychology and sociology to date, but began in earnest in the area of UFOs, Flying Saucers, and extraterrestrials shortly after 1966, the year of a large wave of reported UFO sightings, and when the Condon report was being prepared for released (Simón, 1984). The research followed two different paths: one seeking to identify the various outlooks toward flying saucers, their inter-relationships, and the kind of people who held these beliefs; the other using beliefs in UFOs to test specific theories. In the case of the former, periodic Gallup polls have consistently shown that an increasing portion of the population claim to have seen a UFO, and believe in life beyond our planet. Lee (1969) underscored the importance of studying attitudes toward UFO, noting that the vast majority of such reports

were verbal reports only, lacking any physical or other corroborating evidence, and that those reports were highly colored by the beliefs and attitudes of the witnesses. Through her own attitude research, she found certain correlations existed: that (a) beliefs in extraterrestrial life were correlated with age, education, and geographical region, (b) witnesses of sightings did not differ from non-sighters with respect to age, sex, education or geographical region, and (c) adults were more likely than teenagers to view the extraterrestrial hypothesis of the origin of UFOs negatively (Lee, 1969).

In a study linking belief in extraterrestrial life with the desire to be loved and accepted by others, known as affiliation motivation, Littig, (1971) found that participants scoring strongly in affiliation motivation tended to agree with the statement: "Further research on UFOs will reveal that they come from outer space". This tendency was significantly different from low scorers, prompting Littig to suggest that a peopled universe is more reassuring than an empty one. He interpreted this trend as evidence that the psychological processes underlying belief in extraterrestrial life were normal, rather than pathological, but based on differing interpersonal needs and personality styles (Littig, 1971). More recent research on attitudes have found that those who have strong UFO-related beliefs, tend to be male, less educated, unreligious, and more highly hypnotizable (e.g., Clarke, 1991; Pekala, Kumar & Cummings, 1992).

Together, beliefs and attitudes create expectations, which serve as the filters of perception. It is through these strong subjective, and almost invisible biases that the very information which will be categorized and marshaled as evidence, is collected. In a sense, individuals often apply whatever logical and critical skills they possess at a fairly late stage in the process of critical evaluation, at a time when the information at hand is already highly distorted, making it easier to understand the origins of beliefs about extraterrestrials and abductions.

Neurological Anomalies

Hallucinations are a normal part of the human experience, and although usually infrequent in adulthood, they are even less frequently mistaken as being anything other than what they are: errors in our perceptual/cognitive processes (Sagan, 1995). Children who imagine leering monsters, witches and beasties in the darkness of their rooms may well see these creatures in vivid detail, and describe them accurately and convincingly, but they are rarely validated, or accepted as reality by the parents comforting them. Adults, for the most part, have more sophisticated, and developed sense of reality from which to monitor what their senses tell them.

Yet there remains a portion of the adult population for whom this distinction remains a difficult one. Their difficulties stem from a variety of reasons, ranging from the highly suggestible to those suffering from organic disorders, such as temporal lobe epilepsy. Similar to the effects of some of the early neurological mapping research done at the Montreal Neurological Institute, naturally occurring (but aberrant) cascades of electrical impulses reaching area beneath and to the sides of the forehead, can evoke images indistinguishable from reality, including the following features: the presence of one or more entities, anxiety, a sense of floating, sexual experiences, and a sense of missing time. In these cases, such feelings are often accompanied by profound feelings of understanding or insight into the deepest questions imaginable (along with the desire to spread this understanding). These experiences are not restricted to temporal lobe epileptics, as there is a continuum of spontaneous temporal lobe stimulation across the population, including many otherwise 'average' individuals (Persinger 1984).

Persinger (1989) has theorized that small bursts of electrical activity in the temporal lobes can induce a variety of mystical and paranormal experiences, including the perception of being abducted by aliens. Persinger has reported experimental evidence of such altered experiences created systematically in controlled laboratory conditions (Persinger, 1984; 1989; Persinger & Lafrenière, 1977), as well as creating changes in individual's unified sense of self (disembodiment, or out-of-body feelings). By using electromagnetically equipped helmets fitted over the heads of blindfolded participants, electrical fields can be generated, modulated, and moved to different regions of the brain to produce either pleasant or fearful experiences. Changing magnetic fields, either manipulated experimentally, or occurring naturally with shifts in the Earth's crust, may, in Persinger's view, contribute largely to reports of UFO activity, either individually, or occurring in waves, such as the widespread reports of odd lights in the sky in the Chicoutimi-Saguenay region in November, 1988. These reports immediately followed a large earthquake in that area.

Neuron fibers normally maintain a relative balance between left and right hemisphere via inhibitory activity across the connecting tracts in the corpus callosum. Persinger has proposed that aberrant electrical activity, such as micro seizures, may alter the relative levels of activity between right and left hemispheres. He has theorized that although a person's sense of self, which largely emerges from the language centers of the left hemisphere, are also represented in the right hemisphere in more spatial and emotional ways. An imbalance between hemispheric activity levels in these regions may cause an intrusion of one side's version of sense-of-self into the other's, creating an altered state, or a feeling of another self, or even another presence (Persinger, 1989).

Persinger has suggested that this other sense of self is less clear or defined than that which is represented in the left hemisphere, causing it to be experienced in nonverbal, visual spatial, and emotional ways. This sense of self, when experienced through the filter of the right hemisphere, may reflect distortions from these areas, producing descriptions such as disproportionate, oddly-shaped humanoids who communicate nonverbally, and who evoke strong emotional reactions in the individuals 'perceiving' them. Such imbalances, although more pronounced, are not restricted to those who suffer from temporal lobe epilepsy. Triggers for these shifts in electrical activity include fatigue, stress, mild decreases in oxygen intake, or even changes in sleep patterns, which means that these occurrences may be far more commonplace than previously thought.

Sleep Disturbances

Another important aspect to this phenomenon is the connection between UFO abduction experiences and sleep disorders. Baker (1992; 1997) has noted the similarity between reports of experiences with UFO abductions, such as the type outlined above (and typical of the experiences reported by Mack, 1994; Jacobs, 1992; Fiore, 1989; Streiber, 1987; or Hopkins, 1987) and medical reports from individuals who have experienced hypnagogic or hypnopompic hallucinations (Mavromatis, 1988; Rehm, 1991; Siegel, 1992). In many respects, these two types of reports are strikingly similar, differing in content detail only.

There seem to be few differences in subjective emotional aspects, and in process between reports of experiences associated with sleep disturbances, such as sleep paralysis or hypnagogic imagery, and many reports of UFO abductions. Instead of UFO aliens, these sleep related hallucinations may include manipulations by ghosts, demons, or other such creatures often found within

the cultural folklore. Spanos et al (1993) recognized the importance of pre-existing beliefs in shaping the content of such reports. They concluded that "among UFO believers, those with strong propensities toward fantasy production were particularly likely to generate such experiences (p. 631)" underscoring the importance of the role of imagination, fantasy and their influence on beliefs about UFO abduction reports. This conclusion was supported by Ring and Rosing (1990) in a similar study.

The majority of 'supernatural' experiences, including UFO abductions, occur during the night and more specifically around sleep, prompting researchers to suggest that sleep, combined with situations of diminished external reference are at the core of these reports (Hufford, 1988; Spanos et al, 1994). Hufford (1988) has suggested that the majority of 'symptoms' reported during these events, including the bulk of their phenomenological content, overlap significantly with symptoms of sleep disorders (see also Mavromatis, 1988). In a study by Ramsay, Barnett, McNulty & Spanos (1996) it was hypothesized that the tendency to report 'supernatural' experiences involving the presence of some form of 'entity' would be positively correlated with experiences of sleep disorders/disturbances. They found that those who have such reported 'supernatural' experiences differed significantly than non-reporters along several sleep-related dimensions, such as occurrences of sleep onset/outset imagery, sleep paralysis, sense of floating during sleep related disturbances, number of dreams recalled per night, dream vividness, the experience of "pavor nocturnis" or night terrors, hearing "strange sounds", seeing "strange sights", or being touched by an 'entity' during sleep paralysis. They interpreted these findings as evidence that sleep paralysis and other sleep-related disturbances serve as a template for range of supernatural experiences (Ramsay et al, 1996). Furthermore, they linked the tendency to experience more

frequent, intense and extended parasomnic experiences with a possible predisposition to sleep discordances. Sleep discordances are episodes during which rapid eye movement (REM) sleep processes, such as dream imagery, intrude into waking awareness at either sleep onset or outset phase.

Although most people experience sleep paralysis at least once, the experience seems to be brief in duration, allowing it to be dismissed as an aberration. Those who experience these episodes more frequently, more intensely, for longer periods, and with more bizarre sensory components would be less likely to dismiss them. Their experiences would become fertile ground for beliefs, expectations, or other sources of information to take root as spurious explanations or accounts for their symptoms (Billig, 1982). Perhaps the interaction between belief system, fantasy prone characteristics, and parasomnias increases the likelihood that they will be interpreted as having truly occurred, at least in some of those reported.

Memory

Bartlett (1932) wrote earlier this century that memory is not simply the process of storing copies of experiences, but rather a reconstitution of events within the rich medium of all experiences. He argued that people reconstruct memories using both images associated with an event and their beliefs and assumptions about how those images should relate to the actual event. In his view, then, memories can be influenced either by changes in images upon which the memories are based, or in the beliefs and expectations related to the remembered event (Bartlett, 1932).

> Remembering is not the re-excitation of innumerable fixed, lifeless, and fragmentary traces. It is an imaginative reconstruction or

> construction, built out of the relation of our attitude towards a whole active mass of organized past reactions or experiences... It is thus hardly ever really exact, even in the most rudimentary cases of rote recapitulation, and it is not at all important that it should be so. (Bartlett, 1932).

Bartlett was one of the first to recognize that memory and imagination could not be distinguished with certainty because they are not separate processes. Memory could be thought of as a form of imagination; one that creates a useful image of the past. Memory, like all other psychological and biological processes, functions to serve a specific adaptive purpose. Its aim is to help an individual adapt to present circumstances. The best adaptive strategy does not always rely on recalling accurate information. It could be argued that optimal adaptation may, at times, be supported by false, or no recollection. It is this latter point that has served as the logical basis for the concept of memory repression, which will be discussed further below.

The reconstructive nature of memory would thus be adaptive, yet there is a considerable reluctance to let go of the Aristotelian metaphor of memory as etchings in a waxen tablet: a permanent, complete, and accurate recording of events. This concept of permanent records has been the dominant metaphor until only recently, and it is therefore understandable that it lingers in the face of current evidence. Although the form of the storage metaphor has changed to reflect the technology of the times: from the development of writing to telephone switchboards, to audio and visual recordings, the metaphor of complete storage has remained the same.

Bartlett also realized that memories change in predictable ways over time. With each repeated recollection, irrelevant or unfamiliar elements tend to get

lost (described by him as leveling); details central to the memory become exaggerated (sharpening); and the memory is reinterpreted in terms of the person's beliefs and needs (assimilation). What is remembered also depends highly on the context in which the recollection takes place (Loftus & Zanni, 1975). An apt description of the reconstructive nature of memory was made recently by fiction author Robert Sawyer:

> ... we save only enough information to reconstruct events later. We save the deltas - we remember base pieces of information, and note changes. Then when we need to summon up a memory, we reconstruct it - and often do so inaccurately (Sawyer, 1995).

Recalling one's own life events, then, is essentially a reconstructive process which can be influenced by several factors (Bowers, 1990; Dywan and Bowers, 1983; Loftus, 1979). For the most part, these factors contribute to the modification, or degradation of autobiographical memories such that later recall (if any) can result in memories that contain distortions, intrusions, temporal compression, or confabulation, in addition to accurately recalled content. Forty years after Bartlett wrote about memory, psychology saw an upsurge in experimental studies addressing the malleability of memory. These studies examined such things as the effects of misleading information on recall (e.g., Loftus, 1979; Loftus, 1975; Loftus & Palmer, 1974). They were able to show consistently that many reports of past events are influenced by post-event information.

One particularly well-known study (Loftus & Palmer, 1974) showed volunteer participants a film clip of a staged auto accident. They then asked participants to estimate the speed of one of the vehicles depicted at the moment

of impact. However, the wording of the question varied: some saw the question using the word "smashed", and other saw the word "hit". Those participants for whom the question was worded with "smash" gave significantly higher speed estimates than those who were queried with the word "hit" (see also Loftus & Zanni, 1975). This interpretive recall, or misinformation effect has been replicated many times in adults and children (e.g., Gibling & Davies, 1988; Gudjonsson, 1987; Register & Kihlstrom, 1986; Sheehan, 1988; Sheehan & Tilden, 1986).

Although the power of suggestion in recall is a well established effect, the explanations for its mechanism are not. Simple compliance cannot account for the extent of the effect, nor can reporting bias (Loftus, 1979). Part of the effect seems to be due to actual changes in memory trace, which is plausible given that repeated reconstructions will incorporate errors on each iteration. Others have speculated that the effect is due to differences in the quality of the initial image associated with a given event (Dodson & Johnson, 1993). Apparently, such differences can affect how the image is associated with its origins, resulting in "source-monitoring" errors. Johnson and colleagues have found that individuals hold differing beliefs about the quality of images based on past events, and those originating from their imagination (Dodson & Johnson, 1993). Individuals tend to believe that more familiar mental image fragments are more likely to be based on actual events, and thus represent "remembered" images, rather than imagined images.

The image-familiarity attribution is linked to a corollary belief that higher sensory detail content is also indicative of memory rather than fantasy based material. These beliefs combine to directly influence, often in error, the convictions we hold about the origins of our memories. It is possible that individuals come to believe that they have been abducted by extraterrestrials

through memory errors similar to this. In the process of remembering, individuals evaluate the qualities of fragmentary mental images in an effort to determine what particular events of experiences were at their source; this evaluation process is also subject to error, and systematic experimental manipulation, as has been demonstrated repeatedly. This area of research suggests that one explanation for the power of suggestion lies in the confusion it causes the individual about the source of mental images associated with a given event.

To further complicate the mixture of accurate and inaccurate content in memories, the source of error in the inaccuracies can be from both internal and/or external origin. Internal sources of error arise from the fact that autobiographical memories also tend to be organized ways which are congruent with our current set of beliefs and expectations, such that recall of past events serve to help make sense of the present (Bartlett, 1932; Dywan & Bowers, 1983). External sources of error may be as simple as incorporating content into one's own memories from stories heard about others' lives, or information gleaned from our increasingly ubiquitous popular culture (see Cryptomnesia below).

Following the space shuttle Challenger disaster, Neisser and Harsch (1992) questioned subjects about their whereabouts and activities when they learned of the tragedy. Morning-after recollections were compared with the same individuals' accounts retold almost three years later. The results showed that although most subjects claimed that their recollections of the event were still vivid, they were almost always different from what they reported the morning after. Moreover, they found that approximately a third of their sample reported very different stories. Even when challenged with differences in the original and newer narratives, there was a considerable preference for the most recent accounts as being accurate.

Not only can we distort the details and sequence of memories for things that actually did happen, we are equally adept at creating memories for things that never happened. In a study by Laurence and Perry (1983), highly hypnotizable participants were asked to recount and relive the experience of preparing for and going to bed on a night from the previous week, during hypnosis. During this time, a suggestion was made that a loud noise was heard and had awakened them on that night. Nearly 50% of the participants incorporated that suggestion seamlessly into their own memories, and stated after hypnosis that they had been awakened by a loud noise on that night. Even being told that the memory for a noise had been suggested during hypnosis did not deter them. Hypnosis, however, is not a necessary condition to induce this kind of memory construction. Similar results can be obtained simply by asking individuals to imagine noises, and then later recall separate events (Weekes, Lynn, Green, & Brentar, 1992).

What is perhaps most striking about autobiographical memory is not simply the fact that such inaccuracies may exist, but also our inability to critically evaluate them. Source monitoring and accuracy checks would permit us to assess the fidelity of memories on a slightly less subjective level. In most cases, we do not spend much time trying to put these memories to the test, in order to evaluate their veracity. Most of us prefer to think of these inaccuracies as uncommon, and usually happening to someone else. It has even been claimed that the only errors that occur are small, concerning trivial details, while the essentials remain uncorrupted (Franklin & Wright, 1991). However, there is no clear evidence to support this supposition, while considerable experimental evidence exists to support the notion that no one, and no type or quality of memory is exempt from the rule (Loftus, 1979, 1993). If the gist of an important

event is usually correct, the actual reconstruction of the event may be the subject of considerable variations.

The subjective impression of accuracy when remembering is usually inferred from the apparent automatic, and effortless re-emergence of memories. This feeling of involuntariness in the experience of recall is more the rule than the exception; we orient the search and depending on the context of recall, one cue triggers the next one until no more memories are recalled. Constructing memories or internally generating events is usually accompanied by the impression of having to use more cognitive efforts than remembering externally generated events (Johnson & Raye, 1981). Cognitive effort, however, can be a misleading heuristic when determining the origins of a memory. "Spontaneous" and effortless imagery can be generated in certain contexts that bypass the impression of cognitive effort. This may ultimately lead to a misidentification of source (Johnson, 1988). This misattribution process has been particularly noted in aided recall whether it be by hypnosis or any other mnemonic techniques.

Often such 'false memories' are relatively innocuous shifts in perception of the past, based on the ways we perceive the present, arising when accuracy is not important (Bartlett, 1932). In this way, almost all memories, whether they represent actual autobiographical events or not, are accepted subjectively as real "records" of our lives. The familiarity of an image seems to be the main criterion we use for determining whether recall is accurate or not (Dodson & Johnson, 1993; Niesser & Harsch, 1992). Those errors go undetected simply because they are consistent with all the things we expect and believe about ourselves. Absolute accuracy simply is not all that important in how we tell ourselves (and others) our own stories. In fact, some of the changes happen precisely because they make for a better story, or they are more consistent with

how we view ourselves in the present (see Laurence & Perry, 1988). In a sense, these constructive editions reduce the strain of trying to match a current self-concept and belief structure with a past one that may differ.

The times when it matters whether our recollections are important or not, are when the claims are used to attribute causality. Most importantly, memory accuracy is required, or at least expected, when the information gleaned from one's recollections is used in the legal arena. As we move through our day-to-day lives, we rarely, if ever question the veridical nature of our own recollections. However, the necessity for critical evaluation of these uncovered 'memories' becomes essential when uncritical acceptance results in emotional trauma to the individual (Loftus, 1993, Powell & Boer, 1994), or causes these individuals to make decisions which may further damage their own lives, or the lives of those around them.

Much of the work pertaining to accuracy in recall of autobiographical events, confidence in such memories, and ways of enhancing recall, have been developed in the context of studying and assessing the reliability of eyewitness testimony (e.g., Loftus, 1979; Smith, 1983). However, there is little or no correlation between accuracy of recall, and confidence in the accuracy of recall (Schooler, Gerhard & Loftus, 1986). It is this confidence, based on one's sense of familiarity, that is so important in determining the origin of a memory image. As a group, Humans appear to be deeply invested in being able to rely on memories as accurate representations of the past, whether they are or not.

If memory is a reconstructive process[8], variations in the content of autobiographical memory over time should be thought of as the rule rather

[8] The goal of memory retrieval is the reproduction of the information that one is looking for. Although memories can be reproduced correctly (for example, retrieving the telephone number of a friend), the success of this memory function depends largely on factors such as number of initial repetitions, perceived importance of final results, and continuous rehearsal. Although perfect recall seems to be the product of some form of high fidelity playback, this function is also the end result of a reconstructive process.

than the exception (Laurence, 1988). Part of the difficulty in accepting the natural inaccuracy of memory lies in the fact that it does not sit well with the cherished notion that the current mental representation of ourselves is based on an accurate record of our past experiences. Our subjective feelings of unity and continuity are powerful determinants of the uncritical acceptance of the historical veracity of our personal experiences. Pierre Janet (1889) had already described how the views we hold about ourselves are shaped and maintained by an intricate interaction between actual self-concept and the current situation (Perry & Laurence, 1984).

Our memories of ourselves and our own lives, are often at the core of our very self-definition. Loftus and Ketcham (1994) wrote: "Our memories are so valuable because they are literally a part of us - they tell us who we are, what we have experienced, and what we should feel." However, these memories are not the accurate record of events we tend to accept them as. In fact, an individual's recollections of his or her own life may contain memories for things that did not actually happen to them at all (e.g., Neisser & Harsch, 1992). It is this phenomena which has recently garnered considerable attention in the forensic arena, known as the False Memory Syndrome (FMS). This unfortunate label is typically applied when an individual comes to believe that something has taken place in their past, when in fact, no such event took place. To refer to these reconstructions in memory as false implies that these kinds of memories happen only under certain, relatively rare conditions. In a sense, it suggests that the way in which our memories normally function is actually abnormal. By pathologizing the times when memory is imperfect, we are perpetuating the concept that when things are working normally, we are able to recall accurately the things that have happened to us. However, everything we can recall about

our own past is the result of some accurate information about events gone by, and a healthy dose of filling in the details.

'False memories' are often believed in, even when they are traumatic, because they have high levels of plausibility: they may have happened, or could have happened. Because they cannot be easily undone, they are simply incorporated as part of the record of past events. For example, sexual abuse of children does happen, in that far too many documented cases of such events exist. An individual may come to believe that they are a victim of such a crime because it is plausible, and because of other reasons relating to the culture of therapy, personal or family dynamics, or a number of other possibilities (see Laurence, Day & Gaston, 1998). However, beliefs may serve as a substitute for plausibility when realism is stretched to implausibility, as in cases of UFO abduction claims.

The frequency of 'false memories' in autobiographical recall is currently unknown, but it is likely that the existence of at least a few errors in individuals' memories is the rule rather than the exception (Laurence, Day & Gaston, 1998; Niesser and Harsch, 1992). From the early memory research of Ebbinghaus (1885) on how we remember, to the current studies in the area of declarative memory and suggestibility (e.g., Loftus, Donders, Hoffman, & Schooler, 1989; Labelle, Lamarche, & Laurence, 1990), we are becoming more certain that the ability to reminisce is dependent on more than just having witnessed or participated in a past event (Nelson, 1993). The current controversy surrounding FMS (Gardner, 1993) represents a clash between science (e.g., Kihlstrom, 1994) on the one side and clinical folklore (e.g., Fox, 1995) on the other. These positions represent two divergent ways of approaching the world, each founding their arguments on different conceptions of the memory system.

These divergent views of memory processes have led to a theoretical concept for why memory fails to operate under circumstances, but resumes operation under other circumstances. The concept of repression, different from forgetting, was developed to resolve this conundrum. Simple forgetting is differentiated from repression in several ways. Terr (1994) acknowledges that we cannot "...file away every single thing we experience. We must discard much of the new information we receive. Some material does not fully register and thus does not move well into storage. And some does not last after storage"(p. 7). According to Terr, then, forgetting is a case of letting irrelevant or unimportant information go in the interest of saving limited storage space. This is a continuation of the storage metaphor, though, which ignores what is currently known about the actual workings of memory.

Terr (1994), has described repression in terms similar to those used for forgetting: the emotional meaning of events can keep them from later recollection, in the mind's bid to protect itself. It is assumed to be an active process; a defense process that can repress repeated incidents of similar traumas (Terr, 1994; 1991). However, this claim that repeated exposure to unpleasant events produces problems with recall is also consistent with what is known about problems with recall for non-traumatic events (Lynn & Rhue, 1991).

As a concept, repression is linked to Freud's early theory of neurosis whereby a traumatic event can come to be blocked from recall unconsciously, then return to haunt an individual later in life when the adaptive value of repressing the memory declines (Holmes, 1990; Loftus 1993). However, Freud's views were based in his own observations that very often the analysand could not retrieve any appropriate memories (Bowers & Farvolden, 1996). In other words, the patient was not producing what the therapist was expecting. He then would supply the patient with his own views, and remain firm until they

acquiesced, recovering 'memories' in line with the hypothesis (Laurence, Day & Gaston, 1998)

It is clear that the construct of repression was originally merely a convenient inference to support the construction of memories that would validate Freud's theorizing. More importantly, he misattributed the fabricated memories to the patients rather than to himself. This unfortunate error has been replayed by current 'memory therapists' uncovering 'memories' of UFO abductions, as well as multiple personalities, mass abuse in daycare centers and satanic ritual abuses to name only a few of the currently fashionable topics (see Mulhern, 1994). An entire industry has emerged in mental health practice designed to assist people in regaining access to those memories (Hedges, 1994), including those who believe they harbor memories of abduction. Dream imagery, like repression, has also seen a recent revival as a source of validation for recovering memories (e.g., Mack, 1994, p. 30; Terr, 1994; Bass & Davis, 1988).

Much of what is often labeled as repression may simply be cases of motivated non-disclosure or even motivated forgetting (Spanos, 1996). One of the arguments commonly leveled against the claims of false memories is that the victims of alien abduction would never conjure up such humiliating and painful stories if they were not true. This is, on the face of it, a compelling and intuitively appealing argument: in fact, it does not make sense that someone would erroneously recall such traumatic events if they had a choice in the matter. Perhaps choice is not the issue.

One of the most emphasized characteristics of a 'repressed' memory is its involuntary quality. These 'memories' appear to emerge without consciously thinking about them. This intrusive quality is often believed by therapists to be a sign of the historical veracity of the memory (see for example Herman, 1992). Many areas of research cast a strong doubt on this assumption whether it be the

research on flashback and flashbulb memories, memories recalled through hypnosis or research on the ability of people to differentiate between externally-generated events and internally-generated events, what Johnson and Raye (1981) have labeled reality monitoring.

A recent review on the experiences of flashbacks (Frankel, 1994) makes it clear that it is nearly impossible to differentiate between a flashback stemming from a lived event or originating from an imaginary one. A flashback has as many chances of being historically correct as of being incorrect. In an attempt to capture the essence of flashbacks, researchers have developed the field of flashbulb memories, memories that are so subjectively vivid that they appear to be recalled without any forms of distortions. As Neisser and Harsh (1992) demonstrated however flashbulb memories are as subject to deterioration and reconstruction as are any other autobiographical memories.

In fact, the reconstructive aspect of autobiographical memories is so well established that few researchers object to the process of reconstruction for any life events, traumatic or not (e.g., see Kihlstrom, 1993; 1994). The more recent attempt to circumvent this challenging aspect of the memory system for proponents of recovered memories is to affirm that emotional memories would be processed in a non-reconstructive but rather reproductive mode due to mechanisms like repression and/or dissociation (Whitfield, 1995). These special mechanisms would preserve the pristine quality of the original memory to the day of its recovery. It is of course an interesting albeit self-serving hypothesis, but an assessment of the literature that deals with emotionally traumatic memories reveals a different picture.

Two different reasons are commonly offered for amnesia of abductions by extraterrestrials. One is that a memory block is actively put in place by the aliens after they have completed their tasks, so that they can their existence will

remain a secret (e.g., Hopkins, 1981; Streiber, 1987). This is difficult to address for obvious reasons, however, it does not seem to take into account what is known about the reconstructive nature of memory. Nor is this a particularly effective strategy for creatures who appear to be so advanced in other areas: a brief session of regression hypnosis seems sufficient to undo any blocks and produce full accounts of abduction activities. If they were truly effective in concealing surreptitious experimentation activities, we should not know about any of it at all. The other reason for amnesia of abduction is similar to that offered by the recovered memory community: that the trauma associated with the event is sufficient to produce a dissociative amnesia, or, in a word, repression.

One of the least frequent sequelae of trauma is a global forgetting or a global amnesia for the event. In fact the contrary is more likely: a spotty recollection of the main events with frequent intrusions in awareness. People not only can not forget their traumatic experiences, but they appear to have no control on when and how parts of the event is replayed in their mind. Psychogenic amnesia has always been defined as a temporary inability to retrieve information pertaining to a traumatic event, an inability that usually vanishes in a few days. The reluctance to relinquish this belief seems to be based on the emotional impact of the memories retrieved on the clinicians themselves. Traumatic 'memories' are retrieved with an emotional intensity that is often overwhelming, leading both clinicians and clients to potentially misattribute their origin. Emotional concomitants of memories, however, are no guarantee of historical veracity (Loftus, 1993). In fact memories from UFO abductions, or from prior lives, or even from the womb are often accompanied by intense emotional abreactions (Day & Laurence, 1996).

In summary, recent research on autobiographical memory leads to two general conclusions about representations of past events. The first is that the process of memory retrieval is reconstructive in nature. The second is that the reconstruction is guided by a number of factors relating to the individual's general metamemory assumptions (e.g., O'Sullivan & Howe, 1995). Reconstruction is influenced by beliefs, attitudes, expectations, and the individual's perceptions of ongoing experiences. Reconstructing without being aware of the process leads an individual to equate "what was" to "what is", strengthening the current mental representation of the self. Reminiscing is a social behavior aimed at strengthening one's current self-presentation.

Hypnosis

Regardless of the practices and credentials of the various individuals who document abduction cases, whether they are trained professionals or rank amateurs, the quintessential tool of the trade in investigating abductions is, or closely resembles hypnosis. The logic behind using hypnosis to obtain abduction narratives has been based on the notion that conscious access to memories of these events has been blocked either because of the associated trauma, or by design on the part of aliens interested in maintaining anonymity. Hypnosis has been credited with the power of eliciting accurate memories for events which could not be otherwise evoked in willing subjects (e.g., Reiser, 1984). The connection between hypnosis and blocked memories is directly related to repression and other efforts to circumvent such defenses (Loftus, 1993).

Hypnosis has enjoyed many spurious and unsupported claims, such as future age progression (Moll, 1889/1982), breast enlargement (Staib & Logan, 1977), or as a means of seducing women (Lyons & Goldblatt, no date), all of which hinder the scientific investigation of the hypnotic phenomenon (e.g.,

Laurence & Perry, 1988). Perhaps the most widely accepted of these misconceptions, is the notion that hypnosis can enhance recall (Reiser, 1984). In fact, until recently, the law enforcement community participated in the use of hypnotic regression to enhance memory for legal testimony, or to capture more detail from witnesses (see Laurence & Perry, 1988). Although there are techniques which can enhance the accuracy of memory, such as those taught in study skills seminars for improving efficiency of storing and retrieving memorized material, hypnosis is commonly assumed to be a superior enhancement technique.

Research on hypnotic hypermnesia over the last twenty years has clearly demonstrated that the subjective reality of memories is quite at odds with their historical veracity (Nash, 1987). Not that hypnosis cannot be used from time to time to recover some aspects of an event that seemed forgotten. It does happen, but the price to pay is high when one considers the volume of incorrect information produced (e.g., Laurence & Perry, 1988). If anything, hypnosis increases productivity rather than accuracy of recall; more to the point this productivity is not random, but guided by the verbal and non-verbal cues of the recall context (Spanos & McLean, 1986; Spanos, Burgess, & Burgess, 1994).

There is considerable evidence indicating that we should be cautious in interpreting the veracity of information obtained during hypnosis (Dywan & Bowers, 1983; Register & Kihlstrom, 1986; Sheehan, 1988). Orne (1979) indicated that recollections made during hypnosis, which appear improved when compared to non hypnotic recall, are often confounded by a tendency to confabulate. This tendency is not necessarily related to the presence of suggestion, but may occur spontaneously (Putnam, 1979). As discussed, the tendency to fill in memory gaps with fantasized material is not, in itself, a cause for concern. It is a normal and constant process, drawing heavily on one's

attitudes, beliefs and expectations about how the world operates. However, the process of hypnosis seems to produce a form of confabulation which is more compelling than waking recall, creating a higher tendency to believe in the veracity of these confabulations, and to accept them as being based in reality (Dinges, Whitehouse, Orne, Powell, Orne, & Erdelyi, 1992).

Research on hypnosis has paid particular attention to the involuntary or effortless quality of hypnotic behaviors and experiences (e.g., Bowers, 1982; Bowers, Laurence, & Hart, 1988). In fact a behavior or an experience is rarely labeled as hypnotic when it is totally devoid of this involuntary quality. For example, if an arm is hypnotically paralyzed, the arm itself is devoid of any interest if the subject recognizes that he or she is just not moving it voluntarily. What makes the experience of hypnosis fascinating for subjects is their reported inability to move the paralyzed arm in spite of their conscious efforts to do so. The apparent automaticity of the subject's behavior is one of the defining features of what is described as a "hypnotic" process. The hypnotized individual appears to be responding in a way that does not involve their own executive functioning. This automaticity is described as such both subjectively by the subject, and by the observer (Sarbin & Coe, 1972).

These aspects of hypnosis have been at the root of the ongoing discussions about what, exactly, hypnosis is. Hypnosis, from the Greek *hypnos* meaning to sleep, was equated with other trance-like phenomena. The trance background of hypnosis inferred special states. Trance came from the Latin *transire* which is a combination of *trans*=across, and *ire*=to go. This term originally described an intermediate way station between the earthly world and the spirit world, but was used to describe the transition between the mundane condition of waking, and the intriguing condition of sleeping (Sarbin & Coe, 1972). From its inception during the days of Mesmer, there were two views about what was happening

during these trance-like sessions: the trance state view, and the role-playing view (Laurence & Perry, 1988). There is a tendency in scientific theorizing to portray schools of thought in either/or terms (Perry, 1992). Hypnosis theories are no exception. In the past, the divisions separated theories into those which postulated hypnosis as a special state, more recently described as the dissociationist, or neo-dissociationist position (Hilgard, 1965; Ludwig & Levine, 1965); and those which espouse a social psychological position (Barber, Spanos & Chaves, 1974; Sarbin & Coe, 1972).

Indeed, there do seem to be two main trends in thinking about the nature of hypnosis, but they do not follow neat categorical lines as these descriptions would imply. There are those who place primary emphasis on cognitive processes (e.g., Hilgard, 1965; 1991), and those who emphasize context and social psychological variables (e.g., Sarbin & Coe, 1972; Spanos & Barber, 1974). These descriptions, most useful when investigating specific hypnotic phenomena, tend to ignore the more recent trend to describe hypnotic phenomena as a synergistic interaction between both cognitive and social processes (Bowers, 1973; Perry, 1987; Sheehan & Perry, 1976). Yapko (1995) has summarized the difficulties in arriving at a definition for hypnosis, precisely because it comprises so many possible phenomena. He provides a few theorists' views of hypnosis. Spanos and Barber (1974) characterized it as guided imagination, in which an individual acts as guide for an experience regarded as suggested imagining. Speigel and Speigel (1987) described hypnosis as a state of intense concentration, maximizing involvement with one idea or sensation at a time. Szasz (as cited in Baker, 1997) has described hypnosis as "two people lying to each other, each pretending to believe his own and his partner's lies." Others have described hypnosis as entering a distinctly altered state, different than normal consciousness (Ludwig, 1966; Ludwig & Levine, 1965). Sarbin and Coe (1972)

have pointed out that authors who embrace the "special state" or "altered state of consciousness" rely on observation and self-report. Unfortunately, much of what can be observed leads to circular reasoning. For example, if observing catalepsy, rigidity, or amnesia are the criteria used to determine that the subject is in a trance, it also follows that the subject must be in a trance in order for catalepsy, rigidity, or amnesia to be observed. Similarly, relying on self reports for definitions suggest that in order to exhibit those behaviors, the subject must be in a trance, and the defining criterion of trance is the selfsame phenomenal experience. This is just one example of the many complexities involved in trying to hold hypnosis to any single theoretically driven definition.

Most agree that hypnosis, regardless of whatever trappings may accompany the ritual, is the process of asking the subject to set aside critical judgment, without abandoning it completely (Hilgard, 1977; Perry, 1987). Similarly, most would agree that hypnosis has taken place when observable changes demark an apparent discontinuity of the subject's behavior before, during and after induction of hypnosis (Sarbin & Coe, 1972). All would agree that hypnosis presents an apparently disproportionately large effect of behavior change given the simplicity and "benign" nature of the stimulus (i.e., talking to the subject). However, one of the striking aspects of hypnotizability, and one that has produced considerable research, is the fact that individuals respond to hypnosis in very different ways.

During the modern era of scientific investigation of hypnotic phenomena (e.g., Hull, 1933) differences in responsivity to hypnosis led investigators to doubt the altered state views of hypnosis. Heterogeneity of hypnotizability was not only well established, but appeared to be a remarkably stable characteristic over time in the same individual. Hypnotizability, then, refers to an individual's aptitude to respond to the process of hypnosis (Hilgard, 1965). The

ensuing state/trait debate led researchers to concede that both the situational demands of the hypnotic context, and the stable internal capacities of the individual were essential to understanding hypnosis. Hypnosis as an altered state of consciousness, imposed on an individual by the hypnotist, could no longer be viewed as accurate. The role played by the individual being hypnotized became crucial to the process (Hilgard, 1965). However, the role played by the hypnotizee cannot fully account for the range of subjective experiences reported, so a more complex, integrative interaction has been postulated to account for the full extent of the hypnotic experience (Bowers, 1973; Orne, 1979; Perry, 1977; Spanos & Barber, 1974).

Orne (1979) extended the view that situational variables played a considerable role in the hypnotic context, by emphasizing the cognitive characteristics of the hypnotizable subject. He proposed that distortion of perception and of the memory processes made individuals particularly susceptible to the hypnotic situation (Orne, 1979). Those individuals who were capable of distorting perception, and altering memory processes without becoming distressed or annoyed at the many incongruities this would produce, would be most highly hypnotizable. Only ten to fifteen percent of the population exhibit this capacity, in that only highly hypnotizable subjects are able to display posthypnotic amnesia, produce hypnotically suggested behaviors post hypnotically, or experience sensory hallucinations during hypnosis.

Considerable research has been conducted to investigate other characteristics that render an individual highly hypnotizable, such as personality characteristics (e.g., Moss & Magaro, 1989), or cognitive styles (Hilgard, 1974; ; see also Bowers, 1976; de Groh, 1989 for reviews of this literature). In addition to the search for personality or cognitive correlates, investigators have also sought to understand what distinguishes hypnosis from

other states which appear to approximate it behaviorally, such as sleep, wakefulness, emotional states, states of intoxication (e.g., Graffin, Ray, & Lundy, 1995; Gruzelier & Brow, 1985). Studies have failed to find the predictive key to exactly what makes an individual hypnotizable, but correlates of hypnotizability have been found (e.g., Kihlstrom, Diaz, McClellan, Ruskin, Pistole, & Shor, 1980; Radtke & Stam, 1991), many of which also correlate with a tendency to experience paranormal or unusual phenomena (Nadon & Kihlstrom, 1987; Pekala, Kumar & Cummings, 1992).

The lore, the history, and the charisma of hypnosis contribute to the adherence of many practitioners and members of the public to the views that hypnosis is a special state, through which the Truth can be accessed. These views are as much rooted in the tradition of mesmerism, as they are in Shamanic rituals, or the spiritualist movements from the 19th century. Even Simon (1966), the psychiatrist/hypnotist responsible for the use of hypnosis in cases of UFO abductions, wrote:

> The charisma of hypnosis has tended to foster the belief that hypnosis is the magical and royal road to the Truth. In one sense, this is so, but it must be understood that hypnosis is a pathway to the truth as it is felt and understood by the patient. The truth is what he believes to be the truth, and this may or may not be consonant with the ultimate non-personal truth (as cited in Fuller, 1966)

Unfortunately, traditionalist views on the trance state and unconscious nature of hypnosis (e.g., Sprinkle, 1979; Fiore, 1989) continue to be more influential within the UFO enthusiast community than the more empirically based

sociocognitive views (e.g., Spanos & Barber, 1974; Perry, Laurence, Nadon, & Labelle, 1986).

The fact that hypnosis is such a central element in the abduction phenomenon is not accidental. Although the past twenty years have seen marked improvements in quality and quantity of empirical evidence for the sociocognitive and synergistic conceptualizations of the hypnotic process, the most widely held concepts of hypnosis, and how it works remain rooted in the social and historical myths of the past (Spanos, 1996; Laurence & Perry, 1988). Those who use, or advocate the use of hypnosis in order to recover stories of abduction by extraterrestrials tend to adhere to the same views of hypnosis embraced by those who recover previously unavailable memories of childhood abuse, multiple personality alters, past lives, or future lives. Those views contend that an individual's consciousness is somehow divisible, such that a subconscious or unconscious agency can assume an executive function that compartmentalizes, or dissociates parts of the conscious self such that the individual may appear to be unaware of processes in other parts. The dissociative view of hypnosis appears to be compelling in the face of such hypnotic phenomena as hypnotic amnesia, selective attention, or analgesia (Hilgard, 1965).

The application of hypnosis in the UFO abduction phenomenon also shares historical connections to phenomena in which trance states have played an integral role. Shamanistic rituals, faith healing, and spiritualist seances have all contributed to the perception that, through trance states, an individual may come into contact with, and receive wisdom from a greater force than themselves (e.g., Flournoy, 1911). Or, in the case of the UFO abduction investigator, the trance state has been interpreted as permitting abductees to come into contact with that part of themselves which contains a perfect record

of events, but which has been made inaccessible, much like Simon's "...royal road to the Truth".

The Present Studies

The purpose of these experiments was to understand the roles that hypnosis and belief systems play in the UFO abduction phenomenon. It was not the objective to support or refute the physical reality of such reports, or of the existence of UFOs. In the interest of scientific parsimony, it seemed useful to explore the more terrestrial possibilities for the origins of such claims before accepting the alien hypothesis outright. It is also of greater potential use in the sphere of psychology to investigate this phenomenon as such: a psychological one. The individuals whose lives have already been adversely affected by such experiences may be assisted more readily if we can obtain a psychologically valid understanding of what is happening to them, and apply appropriate interventions. Treating individuals who have come to believe that they've been abducted, as victims of belief, memory and attribution processes gone awry may be more beneficial than assuming that the recovery process begins with the acceptance of having been a victim of some alien medical research/breeding program.

In the present studies, we set out to compare people who claim to have been abducted, and their stories, to people who do not make such claims but were willing to be volunteer participants in a hypnosis study. In the first part, we hypothesized that individuals who claim to have been abducted by extraterrestrials would not display any greater degree of psychopathology than the general population, but that they would have a greater degree of pre-existing beliefs in UFO-related phenomena, and a higher level of the vulnerability

factors to confabulation which are consistent with fantasy proneness, such as higher hypnotizability, absorption, and rich internal imaginative lives.

We examined the narratives provided by abductees and the role hypnosis played in the process of obtaining these narratives. In general, there is no way to assess the accuracy of claims of UFO abduction, as there simply isn't much corroborating evidence. This weakness applies whether hypnosis is involved or not. However, we could look at the amount of what was described over time, and we could compare changes in the contents of their descriptions of events over subsequent sessions, and before hypnosis was introduced and after. We hypothesized that the existing narratives would become more elaborate with repeated hypnosis sessions. Using content analysis, we were able to compare the proportion of thematic content, and changes in narrative detail over sessions.

In the second part, we tested the potential role of cultural and media-related influences on reports of UFO abductions in a confabulation control experiment. Abductees' narratives serve as the basis for their credibility and the support for their belief systems. However, the emphasis placed on the narrative content as the key to their credibility may be a flaw common to many believers, investigators and therapists. We hypothesized that the themes typical in stories of UFO abduction, when manipulated and presented as pre-hypnotic suggestion material similar to what may be found in the popular culture, would become part of the narratives of volunteer participants who did not have any history of UFO-related experiences.

In the third part, we hypothesized that the content of the hypnotic narratives of abductees and those of non-abductee participants would be indistinguishable to independent raters. We surmised that volunteers, when asked to imagine abduction scenarios and describe them during hypnosis,

would produce narratives which were equal in quality and detail to those from individuals who claimed such events had actually happened.

The three parts of this study are inter-related, in that the thematic content from narratives obtained in Part 1 provided the basis for constructing the pre-hypnotic suggestions in Experiment 2. The hypnotically obtained abduction narratives from both Parts 1 and 2 could then be transcribed and coded, providing a basis for comparison by independent raters in Part 3.

Together, these studies offer further evidence for possible psychological causes of claims of UFO abductions. Although these studies support the findings of Spanos et al (1993) that abductees do not appear to be any more pathological than the general population, there are certain cognitive patterns that they seem to display, as a group, that may prove to be useful psychological markers for individuals prone to report UFO abductions. In addition, these studies suggest that the combined influences of popular culture, active imaginations, congruent belief systems, and the normal cognitive process which tend to incorporate errors into reconstructed memories can become a powerful force in developing memories for things which are unlikely to have happened. This force can influence both individuals who come to believe in their own victimization, and individuals willing to believe in the victimization of others by alien interlopers. Most importantly, these studies point out the weaknesses inherent in using hypnosis as an investigative tool for a phenomenon which warrants more empirically based investigation techniques.

PART 1

UFO Abductees and Their Narratives

Reports of UFO abductions are becoming less rare, and seem to emerge from a segment of the general population which can be described as average in most respects. The content of the stories of alien abduction appears to be developing script-like patterns, used as evidence for both their genuineness and for their fictional basis. Clearly these experiences are not what anyone could describe as normal, yet they are becoming part of the normal range of experiences for many ordinary people (George, 1995). Although research on the development of beliefs and attitudes toward UFOs and UFO-related phenomena is still nascent, it is clear that belief in these phenomena is not uniform in the population (Irwin, 1993). Moreover, experiences such as UFO abductions are more likely to occur to a certain segment of the population. Correlations between this group, and certain characteristics (psychological, demographic, etc.) have been found on some variables, but it is important to note that correlation does not indicate causation. In addition, some correlations have been reported which are actually intercorrelations, and may be artifactual. For example, hypnotizability has been found to correlate positively with absorption, and both of these variables have been found to correlate positively with paranormal experiences described as "Out-of-Body-Experiences or OBEs" (George, 1995). However, without further statistical analyses, it is impossible to determine whether the correlation between absorption and OBEs represents a true relationship, or whether it is a statistical 'afterimage' relating to a more robust relationship between hypnotizability and OBEs (or vice versa).

Correlational studies have found that the individuals who report experiences with UFOs also tend to be individuals who have reported having

had some form of childhood trauma (e.g., Ring, 1992), or having experiences involving alternate realities as children (e.g., Ring, 1992). Correlations between UFO experiences and drug use, head injuries, gender or temporal lobe anomalies have not been found to date, although the latter has been found to correlate with a number of other reported anomalous experiences such as psychic abilities, and general unusual experiences (Irwin, 1985a; 1985b; 1993; Persinger, 1984; 1989).

Correlational studies of belief systems have yielded a slightly different picture. The summary of these reports must be qualified, in that several of the studies relating "belief in UFOs" to other variables did not specify what this belief entailed; whether it was belief that people see things in the sky, or whether things seen in the sky are alien spacecraft, etc. which may be very different propositions (George, 1995). Individuals who endorse beliefs in UFOs are more likely to be male (Clarke, 1991; Gray, 1990). They tend to have achieved less in terms of formal education (Clarke, 1991) and have not attained similar levels of education as non-believers (Salter & Routledge, 1971). More specifically, believers tend to have less scientific education than non-believers (Happs, 1987). Individuals who claim to believe in UFOs also tend to be higher in hypnotizability than non-believers (Pekala, Kumar, & Cummings, 1992), and to be less religious (Clarke, 1991).

In our first study, we examined the content of reported UFO abductions from individuals recruited from the Montreal and Halifax communities. The beliefs, attitudes, and personality traits of these individuals were also examined. We predicted that the kind of people who claim to have been abducted would not be distinguishable from the general population, in terms of psychopathology, or personality variables. This prediction was based on findings from several previous studies, such as (Spanos et al, 1994) which found

that abductees come from all walks of life, and lack any identifiable psychological marker as a group. However, it was predicted that there would be a greater representation of UFO, or paranormal-like beliefs in this group, and that they would exhibit more conspiratorial -like features in their cognitive style. Individuals reporting UFO-related beliefs tend to be more highly hypnotizable (Pekala, Kumar & Cummings, 1992), but individuals reporting direct UFO experiences have not been found to be more highly hypnotizable. Since pre-existing beliefs in UFO-related phenomena are linked to reports of actual experiences in this study, we predicted that these individuals would be more highly hypnotizable than the general population.

Method

Participants

Participants were selected on a volunteer basis from cases of abduction which were either already known to individuals involved in UFO enthusiast activities in the community, or were solicited via a recruitment advertisement in the local newspapers (please see Appendix A). Eleven individuals (6 male; 5 female, with a mean age of 31.3 years) from both the Montreal and Halifax communities were interviewed, completed a number of questionnaires, and then participated in three separate hypnotic sessions. Although a total of 21 individuals were directed to this study, or contacted the experimenter with an interest in participating, ten of these participants did not complete the protocol, and are not reported below[9]. The average number of years of education for

[9] The dropout rate for this study is considerable, given the amount of interest expressed by participants on initial contact. Although the demands of the protocol were substantial and may have discouraged some of the less motivated abductees from continuing, there was another common objection to the study, once interviews were underway: Many participants objected to the primary investigator's professional position on the UFO abduction experience. The P.I. made it clear that he was neither a debunker, nor a true believer, but an interested and curious skeptic, interested in better understanding the psychological aspects of the abduction experience. Apparently, a large portion of these abductees wished to present themselves to an

participants was 4 years of secondary level education, or equivalent to grade 12. The variability in education in this group was considerable, ranging from grade 6 to completion of a Bachelor's level education. Five of the individuals were from the greater Montreal area, and the remaining six were from Halifax and its surrounding regions. A summary of the participants' demographics is presented in Table 2.

Insert Table 2 about here

Inclusion criteria. All participants were required to meet the following criteria for inclusion; (a) they were not engaged in, or seeking therapy for, psychological disturbances, (b) they were not currently taking any medication prescribed for controlling psychological disorders, such as mood, anxiety, or problems in focusing, and (c) they did not display any overt signs of psychopathology, such as psychosis, during the interview process. Subjects suspected of falling into the latter category were counseled about their therapeutic options. Referral information was then made available to them. The two participants who had previously been hypnotized in the context of memory recovery therapy pertaining to UFO abduction experiences were

investigator who shared their pro-UFO beliefs, and who would validate their experiences without question.

Table 2

Participant Demographics Summary Table

#	Sex	Age	Location	Education	Religion	Devout*	Pre-UFO	Post-UFO Beliefs
1	F	38	Mtl	12	R.C.	2.0	2.0	2.0
2	F	42	Mtl	12	Prot.	2.0	2.0	2.0
3	M	35	Mtl	13	R.C.	0.5	2.0	2.0
4	F	29	Mtl	15	Hebr.	1.0	1.0	2.0
5	M	30	Mtl	6	R.C.	2.0	2.0	2.0
6	M	27	Hfx	12	N/A	0.0	2.0	2.0
7	M	23	Hfx	13	Prot.	0.0	2.0	2.0
8	F	38	Hfx	15	R.C.	2.0	0.0	2.0
9	M	30	Hfx	12	Prot.	0.5	1.5	2.0
10	M	28	Hfx	13	Prot.	1.0	2.0	2.0
11	F	24	Hfx	12	Prot.	1.5	0.0	1.5
Mean		31.27		12.27		1.09	1.59	1.95

* A Likert-type scale was used to rate levels of belief, ranging from 0 for non-belief, to 2.0 for strong belief in the issue. The same rating system used to assess devoutness of religious beliefs, as was used to assess beliefs in UFO-related phenomena before and after their claimed experience(s), listed above as Pre-UFO and Post-UFO Beliefs, respectively.

included in this study. Participants were from the Montreal region were paid an honorarium of forty dollars for their participation at the end of the study. Those participants from the Halifax region were offered no honorarium, and agreed to volunteer for this study.

Procedure

Participants were contacted by telephone for a brief description of the study, its time requirements, and interview scheduling. Each participant attended four sessions, represented schematically in Figure 1. Each session lasted approximately 90 minutes. During the first interview, they were introduced to the Experimenter, given a more detailed explanation of the study, its purpose, and their role in it. They were then given the Participant Informed Consent Form to read and sign (please see Appendix B for Montreal and Halifax versions of this form). On each occasion, participants were given an additional option of providing consent to the Experimenter to present recordings of their hypnotic sessions for educational purposes at conferences or university presentations (see Appendix C).

After consent was obtained, the Experimenter informed the participants that the subsequent interview would proceed in two stages: first, they would be asked a series of questions as part of a semi-structured interview designed to obtain background information quickly (see Appendix D), and secondly, they would be given an opportunity to describe the events they had experienced at length.

Following the conclusion of the initial interview, each participant was given a group of 6 questionnaires to complete in the interval before the next scheduled session (see Appendices E, F, G, and H). The total time required to complete these questionnaires was estimated to be approximately one hour.

Participants were then scheduled to return for three hypnotic sessions, the first of which was the Stanford Scale of Hypnotic Susceptibility, Form C. The two subsequent sessions were devoted to hypnotic regression/exploration of their abduction experiences, and discussions thereof. Sessions were recorded, and interview and hypnotic narratives were transcribed and scored for content analysis using the scoring procedure described below.

At the conclusion of the study, they were given any honorarium that was agreed to, thanked, given a verbal and written debriefing (see Appendix I), and an opportunity to ask further questions before leaving. They were also assured that they were free to contact either the Experimenter or Dr. Laurence, the supervising faculty member if future questions or concerns arose. They were also reminded that they were able to withdraw permission to participate at any time.

Insert Figure 1 about here

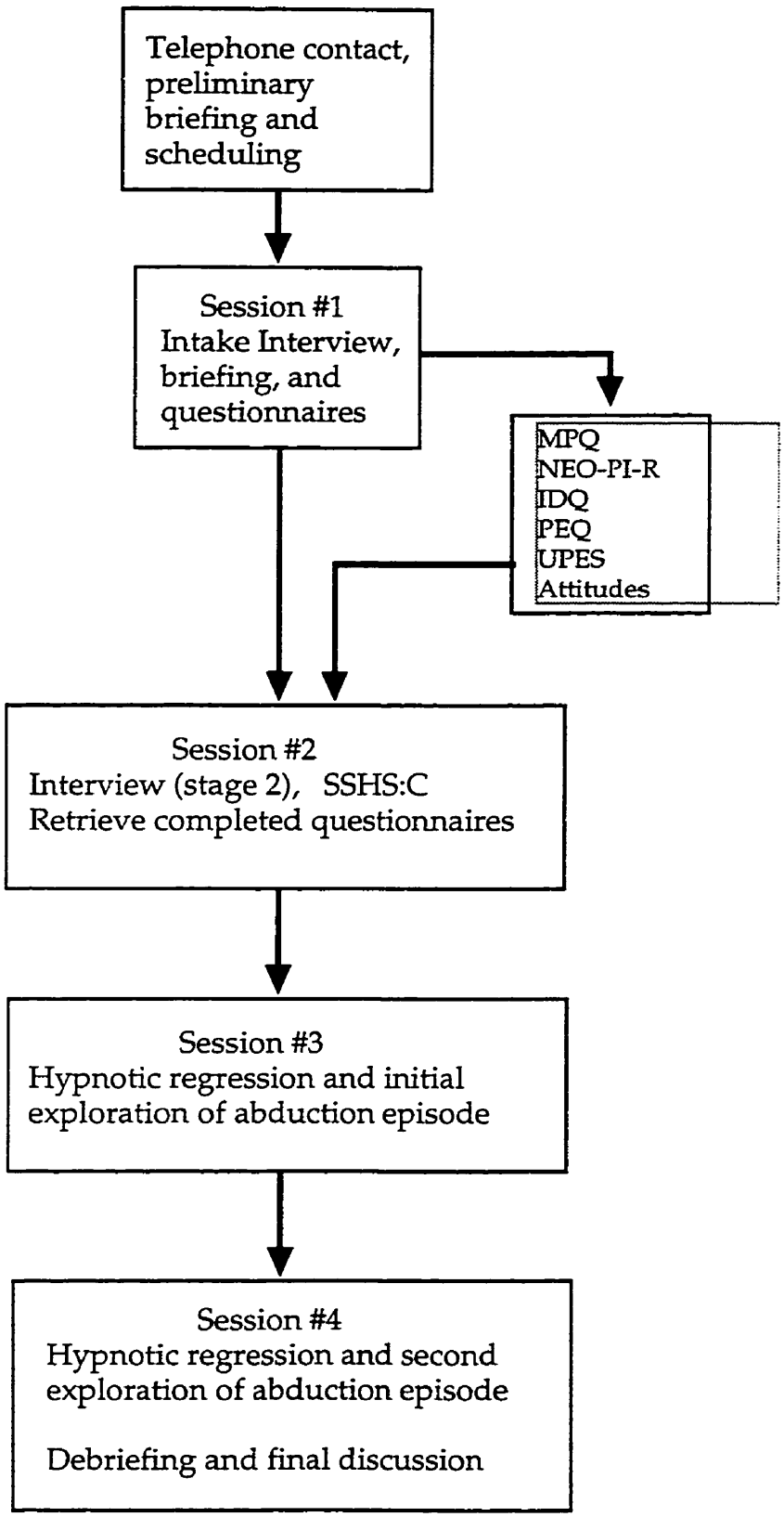

Figure 1. Schematic representation of Experiment 1 procedure.

Scoring Procedure. The scoring system for the content analysis of the participants' narratives broke the narratives down into thematic categories of Medical Examinations, Communication, Emotional Responses, Sensations, Beings, Locations and Technology (as well as non-physical aspects such as lighting, point of view, and actions). The contents of their interviews and hypnotic narratives were transcribed, scored, categorized, and compared with general findings available from the available literature on this phenomenon, including refereed journals, popular culture films and TV, books and magazines. The obtained narratives were compared to the pattern of typical features found in abduction episodes.

The scoring system in this study can be described as being two-tiered (see Appendix J). The purpose of scoring the descriptions provided by participants was to compare the content of their experiential narratives obtained in a normal waking state and during hypnosis, and compiled across narratives with a view to obtaining a composite or prototypical abduction experience. The content provided in the initial interview was contrasted with the content of the narratives obtained during hypnosis. Thematic content, as well as event sequence and manifest (detail) content, was scored on the dimensions described in detail in Appendix J. Two raters scored approximately 30% of all transcripts obtained from these studies (Experiments 1 and 2) in order to establish that the protocol was stable, valid and reliable. Reliability data are reported below.

Materials

Participants were interviewed using a semi-structured interview, and assessed on several self-reported individual difference measures, as well as on hypnotic response scales.

Interview Protocol. A semi-structured clinical interviewing technique, using guidelines provided by Morrison (1993) was employed to obtain a general history (see Appendix D). This interview obtained information about the Participants' psychosocial history, medical history, employment and educational background, and past and current beliefs about the experiences under investigation. Finally, the interview served to obtain as much information about the alleged UFO abduction episode(s) as could be consciously recalled.

The Stanford Hypnosis Susceptibility Scale: Form C (SHSS:C): The SHSS:C (Weitzenhoffer and Hilgard, 1962) is a modification of the SHSS:B (Weitzenhoffer and Hilgard, 1959) in which the anosmia to ammonia item was replaced by posthypnotic suggestion. This modification resulted in a greater representation of cognitive items (vs. sensory), offering a wider sampling of hypnotic experiences. This individually administered, experimenter scored scale, yielding a Küder-Richardson reliability of .85 (Hilgard, 1959, p. 237), assesses an individual's responsivity to hypnotic suggestions of different levels of difficulty.

The suggestions range in response difficulty from motoric (least difficult) through challenging to more cognitive items. Motoric items involve suggestions requiring a motor response, such as experiencing a feeling of heaviness in an arm when the suggestion of weight is given to the individual with his or her arm extended, and then lowering that arm. A challenge item requires a motor response to be challenged by the participant him/herself. For example, when a participant is asked to imagine that his arm is too stiff to bend,

he is then challenged on this when asked to see "how difficult it is to bend", by trying to bend that arm. Suggestions requiring more cognitive responses include suggestions of imagining a voice asking questions, experiencing a negative hallucination, or forgetting the events of the session post-hypnotically until a reversal cue is given to reverse the suggested amnesia. All responses are observed and scored objectively by the test administrator, based on the manifest response of the participant.

Overall, the session lasts approximately 50 minute, after which the participant reports on his/her experience by answering a single free recall question and several elaborative/experiential questions. Participants' scores are calculated by summing the items which they objectively have passed. Additional points are scored for those participants who pass the amnesia suggestion, as assessed by the number of items recalled in the free recall portion question, and for those passing the post-hypnotic suggestion item for an action occurring on cue after hypnosis has been concluded. The scale is scored out of a total of 12 points.

Personality Measures.

Two comprehensive, multidimensional, non-clinical personality assessment measurements were administered: the Multidimensional Personality Questionnaire (MPQ) (Tellegen, 1982), and the (NEO-PI-R) (Costa and McCrae, 1992). Each instrument provides a scaled score on a number of descriptive dimensions.

Multidimensional Personality Questionnaire (MPQ). This scale developed by Tellegen, (1982) is a self-report based on factor-analytically developed scales. Its scales represent 11 factors, or primary dimensions of personality, as well as three "higher-order" traits, or factor clusters (see Table 3). In addition, there are

six validity scores. The strengths of this scale's factor structure lies in the fact that the scales are clear, replicable, and conceptually meaningful (Tellegen, Kamp, & Watson, 1982). Its measures have acceptable internal consistencies, and retest reliability, and relate well to other non-test variables, such as information gleaned in interview. This scale was selected, over other personality measurement scales, for its inclusion of the Absorption scale, which has been shown to correlate well with hypnotizability, as well as for its specificity of coverage within the non-clinical, or average range. It is a scale which has the additional advantage of providing self report material based on individuals' belief systems as well.

Insert Table 3 about here

NEO-Personality Inventory-Revised (NEO-PI-R). Developed by Costa and McCrae (1992), this revision of the earlier personality inventory is a measure of five factors, or dimensions, of personality, and the 30 facets that define each of these domains. Together, they constitute a comprehensive assessment of adult personality, with more than adequate flexibility and

Table 3

Content Summaries of Eleven Primary MPQ Scales

Scale	High Scorers	Low Scorers
1. Well-Being	Happy, cheerful disposition; feels good about self; positive outlook; lives an active life	Few experiences of joy seldom really happy
2. Social Potency	Forceful and decisive; persuasive and likes to influence others; enjoys leadership roles	Prefers that others take charge; does not aspire to leadership
3. Achievement	Works hard; likes long hours; enjoys demanding projects and challenges; persistent in work; perfectionist	Tends not to work any harder than strictly necessary; avoids high demanding projects; not ambitious
4. Social Closeness	Sociable; likes people; values close personal relationships; warm and affectionate	Likes being alone; prefers to work things out on his/her own
5. Stress Reaction	Nervous; often feels vulnerable prone to worry; sensitive; easily upset and irritable; troubled by guilt; often feels miserable	Copes well with fears and worries; quick to recover from upsets; not troubled by guilt
6. Alienation	A victim of bad luck; feels mis-treated or target of false rumor; believes others wish him harm	Does not see self as a victim; feels treated fairly overall
7. Aggression	Will hurt other for own advantage; is physically aggressive; vindictive; likes to frighten others	won't take advantage of others; non-violent does not seek revenge
8. Control	Reflective; cautious; careful and plodding; rational; sensible; plans	Impulsive; spontaneous can be reckless

Table 3 (Continued)

9. Harm Avoidance	Does not enjoy excitement of adventure and danger; prefers safer activities, even they are dull	Enjoys risky stunts and adventures; enjoys the excitement of danger
10. Traditionalism	Holds high moral standards; supports religious values and institutions; hates permissiveness	High morality is not a high priority; finds that religions are outdated
11. Absorption	Emotionally responsive to engaging sights and sounds; readily captured by entrancing stimuli; thinks in images; can summon vivid and compelling recollections and imaginings; has episodes of expanded awareness and other altered states	Not easily caught up in sensory and imaginary experiences; maintains a realistic frame of reference

sensitivity within the average range, and with demonstrated utility for both clinical and research settings (Costa and McCrae, 1989). The five major dimensions of personality measured by this scale are Neuroticism (N), Extroversion (E), Openness (O), Agreeableness (A), and Conscientiousness (C). All five factors enjoy an internal consistency alpha coefficient of .86 or higher, with retest reliabilities for the N, E, O, A, and C scales at .87, .91, .86, .63, and .79 respectively.

The Neuroticism scale consists of such personality traits as anxiety, anger-hostility, depression, vulnerability, and impulsiveness. Although it is not to be considered a measure of psychopathology, it provides an index of the general tendency to experience negative affects, such as fear, sadness, anger, or guilt. Extroversion consists of such facets as warmth, gregariousness, assertiveness, excitement-seeking, and positive emotions. It indicates the tendency of the respondent to like other people, be outgoing, to be of cheerful disposition, and to like excitement and stimulation. Openness consists of measures of aesthetics, feelings about things, ideas, actions, values, and fantasy. Open individuals tend to be curious about both their inner and outer worlds, entertain unconventional ideas and values, and lead rich imaginative lives. Clearly, this is a characteristic of interest in the abductee group. Agreeableness, a dimension of interpersonal tendencies, consists of trust, straightforwardness, altruism, compliance, modesty, and tender-mindedness. Conscientiousness consists of competence, order, dutifulness, achievement striving, self-discipline, and deliberation. In addition to the personality domains, the NEO contains validity indicators, such as Acquiescence, for individuals who use an excessive number of *strongly agree*, or *strongly disagree* responses, Nay-saying, which indicates a paucity of either *strongly agree* or *strongly disagree* responses, and Random

Responding, which suggests that individuals completed the questionnaire in a random or careless fashion.

Attitude and Belief Measures.

Four scales, the Paranormal Experiences Scale (Nadon, Register, & Kihlstrom, 1989), the Unusual Personal Experiences Questionnaire (Hopkins, Jacobs, & Westrum, 1992), Attitudes Toward Hypnosis, and Individual Differences Questionnaire (Paivio, 1971) were administered to measure individuals' tendency to believe in paranormal and UFO-like phenomena, their preconceptions of hypnosis, and their mental imagery abilities.

The Paranormal Experiences Questionnaire (Nadon, Register, & Kihlstrom, 1989). This is a 23-item self-report questionnaire designed to assess individual differences in reported paranormal experiences, assuming a stable cognitive basis for such anomalous experiences (see also Nadon & Kihlstrom, 1987). For example, the scale includes such questions as, "Have you ever felt that you were in communication with someone who had died?", "Have you ever felt that you were directly able to influence others through your thoughts?", and "Have you ever felt that your body was emitting a light or energy?" (see Appendix E). Participants are asked to respond to each item in a yes/no format both "as a child" and "as an adult". The questionnaire is scored separately for each subscale (child and adult), by summing "Yes" responses. This questionnaire has demonstrated an internal reliability alpha coefficient of .82 and .84 for adult and child scales respectively, and has accounted for a portion of variability in Hypnotizability (between .3 and .5 in the Concordia Hypnosis Laboratory)(Radtke & Stam, 1992; Labelle, Dixon, & Laurence, 1992), as measured by the HGSHS:A (Shor & Orne, 1962) comparable to that accounted for by the Absorption subscale of the MPQ (Tellegen, 1982).

Unusual Personal Experiences Questionnaire (Hopkins, Jacobs, & Westrum, 1992). This scale was devised by Hopkins et al., 1992, in order to obtain population estimates of the overall frequency of the UFO abduction phenomenon. It consist of 24 items, each requiring a "Yes/No" type answer. For example, questions ask participants about symptoms frequently associated with UFO abduction, such as "Waking up paralyzed with a sense of a strange person or presence or something else in the room", or actual sightings , such as, "Seeing a UFO", or dreams, such as "Having vivid dreams about UFOs" (see Appendix F). This scale was also expanded to include items relating to conspiratorial thinking and paranoia, as assessed by such items as "High government officials were involved in the Kennedy assassination", "The AIDS virus was created deliberately as part of a conspiracy against certain groups in our society", and "I sometimes feel that people are conspiring against me."

Attitudes Toward Hypnosis Scale (Spanos, Brett, Manary, & Cross, 1987). This scale is a 14 item self-report measure providing a useful index of participants' preconceptions and expectations of the hypnotic process. Statements, such as "I would not mind being known as someone who can be deeply hypnotized", or "Those who are easily hypnotized are weak people", are responded to on a seven-point Likert-type scale, from 1 (not at all true) to 7 (very true), based on how well the individual feels that response matches their position for each statement. This scale is response-bias corrected, such that half of the questions are scored with reversed score values, providing an assessment of individuals' perceptions of hypnosis which is counter-balanced for pro and con positions. Scores are summed for total, and three subscales measuring respondents Positive Beliefs toward hypnosis, their perceptions of Mental Ability as a requirement, and their Fearlessness in engaging in the process (see Appendix G). Subjects with very negative attitudes are almost always low in

hypnotic susceptibility, whereas participants with positive attitudes may be either high, medium or low hypnotizable.

Individual Differences Questionnaire (Paivio, 1971). This is a 21 question self-report scale measuring individual differences in imagery and visualization abilities (Appendix H). Participants respond to each question on a 5-point Likert scale rating how characteristic a given statement is of themselves ranging from being "Extremely Uncharacteristic" to being Extremely Characteristic. Statements address visual abilities, richness of imagination, and dream imagery. Examples of these statements include, "By using mental pictures of the elements of a problem, I am often able to arrive at a solution", "I have only vague impressions of visual scenes I have experienced", and "My dreams are extremely vivid". Visual imagery ability, like absorption, has been found to correlate well with hypnotizability (e.g., de Groh, 1989).

Apparatus

Audio Recording. Initial intake interviews and hypnotic sessions were recorded on audio tape (Fuji, 90 minute audiocassettes) using a Panasonic tape recorder and a Realistic PZM omni-directional microphone, for the purpose of facilitating the transcription and scoring of participants' narratives. Tape recordings were kept until three months after transcription was complete, then erased (if recording consent was not given), in order to protect the identity of participants. If recording consent was granted, then recordings were labeled with a participant subject number, and filed for potential presentation at a later date.

Results

Interrater reliability was calculated for the portion of transcripts that were scored by two raters (approximately 30% of all transcribed material). The reliability for the two raters was r^2=0.88, suggesting a sufficiently stable and reliable scoring protocol. The participants' hypnotizability scores and other measures of belief and attitude are summarized in Table 4. It is possible that hypnotizability is a relevant variable to distinguish this group from the general population. Mean (Stanford) hypnotizability scores were in the medium range (μ=6.0; SD=3.52) overall, suggesting that abductees do not differ from the general hypnotizability levels in the non-abductee population. However, examination of the distribution of hypnotizability scores amongst abductees showed an interesting pattern. Hypnotizability scores are described as falling within three possible ranges of the SSHS:C: Lows score between 0 and 4, Mediums fall between 5 and 8, and Highs score between 9 and 12. Since the general population estimates for representation in each of the three ranges follows a normal distribution, 70-80% are expected to fall within the Medium range, and between 10 and 15% each at either of the extremes (High and Low respectively). The distribution of abductee scores is best described by a bimodal curve, rather than by the expected Gaussian curve. Only three of the abductees hypnotizability scores fell within the mid range, as opposed to the expected 8. The rest of the abductees were either below 4 or above 8 on the SSHS:C, suggesting a disproportionate representation of highs and lows in this particular group.

There were differences in terms of richness of imaginative cognitive style, and beliefs. As a group they reported more rich and highly imaginative internal fantasy lives, than found in the non-abductee sample. Abductees were more likely to endorse belief in unexplained, parapsychological, paranormal and

spiritual phenomena. Mean scores on the adult scale (μ=7.3; SD=5.52) of the Paranormal Experiences Questionnaire were higher than the norm as reported by Nadon, Register & Kihlstrom (1985). Abductees also showed a greater degree of conspiratorial or paranoid-like thinking. Scores on the Unusual Personal Experiences Questionnaire (Hopkins, Jacobs, & Westrum, 1992) were elevated on factors such as paranoid thinking, conspiratorial beliefs, and paranormal beliefs, supporting previous findings about this group. Not surprisingly, their UFO-related belief scores were also elevated on this measure.

Insert Table 4 about here

Abductees' mean Individual Differences Questionnaire score was 57.1 (SD=14.7) out of a maximum possible 84 points, suggesting they enjoy greater mental picture/ visual imagery abilities than are found in the general population. Their scores on the Attitudes Towards Hypnosis Questionnaire were comparable to those found in the general public, though slightly higher (μ=78.6, SD=11.3), with average levels of Positive Beliefs (μ=23.45, SD=8.3) toward hypnosis, assumptions about the role of Mental Ability (μ=25.7, SD=2.1) in the hypnotic process, and general Fearlessness of engaging in hypnosis (μ=29.4, SD=3.9).

Although abductees showed higher than average beliefs in paranormal and psychic phenomena, conspiratorial styles of thinking, and UFO visitations, most of the measures used could not differentiate between pre-existing and current beliefs in these phenomena. All subjects reported a strong current belief in the existence of extraterrestrial life, and in an extraterrestrial presence or regular visitation in today's world. However, information obtained during interviews resulted in subjective retrospective evaluations of interest levels in

Table 4

Participant Beliefs and Attitudes Summary Table

Subject Number	Paranormal Experiences Questionnaire		Individual Differences Questionnaire		Unusual Personal Experiences		Attitudes Towards Hypnosis		
	Child	Adult	IDQ	SSHS:C	UPEQ	Attitudes Total	Positive Beliefs	Mental Ability	Fearless -ness
1	5	14	40	8	11	74	22	26	26
2	0	11	36	9	16	90	28	27	35
3	1	3	68	5	8	62	9	25	28
4	8	10	74	10	17	98	35	28	35
5	4	12	59	3	12	66	11	24	31
6	8	17	66	0	14	74	26	25	23
7	1	2	43	4	6	76	26	23	27
8	0	3	48	4	8	87	29	28	30
9	3	2	47	12	6	70	23	22	25
10	12	4	71	4	9	77	17	28	32
11	3	3	76	7	7	90	32	27	31

these phenomena, showing a trend toward an elevated interest in UFOs before any abductions were reported to have happened (an average of 1.6 on a 3 point Likert-type scale from 0 which is skeptical, to 2 which is a True Believer). In fact, eight of the 12 indicated that they had always had a strong (pre-existing) interest in UFO-related phenomena, the remaining four indicated that they had little or no interest (see Table 2).

The Abductees participating in this study demonstrated a few striking differences from the general population in terms of basic personality measures, as measured by the MPQ and the NEO-PI-R. We sought to test the hypothesis that abductees' scores on personality measures would not differ (either significantly elevated or depressed) from the population norms. The test statictic for this, then is a directional, two-way test of means for each subscale, using the "z" distribution. Table 5 presents the mean scores for both the Multidimensional Personality Questionnaire and its 11 subscales, and the NEO-PI-R and its five dimensions for each gender. Mean absorption scores from the Multi-dimensional Personality Questionnaire (Tellegen, 1982) were lower (μ=14.6, SD=6.7) than those found in the normed average range in the general population (X=20.5).

Insert Table 5 about here

Mean scores for selected subscales of the MPQ were as follows: Well-Being μ=19.6, SD=3.1, Achievement μ=8.91, SD=3.52, Social Closeness μ=10.36, SD=2.3, Alienation μ=5.36, SD=4.3, Aggression μ=6.73, SD=3.6, Control vs. Impulsiveness μ=14.2, SD=3.4, and Absorption μ=14.64, SD=6.7.

Scores for each gender group were compared to published population means. Both male and female abductees scored lower on Social Closeness than

the general population (with "z" scores of -2.19 and -3.23 respectively). Female abductees (only) scored higher on Alienation, and male abductees (only) scored lower on absorption, suggesting that in addition to differences, as a group, from the general population, there are gender-related differences within abductees as well.

Insert Table 5a about here

Abductees scores, as a group, on the five factors or dimensions of personality as measured by the NEO-PI-R were: Neuroticism μ=83.8, SD=16.3, Extroversion μ=115.6, SD=9.4, Openness (anticipated to be somewhat elevated in this group) μ=117.9, SD=19.8, Agreeableness μ=119.6, SD=18.8, and Conscientiousness μ=118.36, SD=17. Pooled, the male and female abductees, again, exhibited differences from the general population on two of the five factors of this scale. Overall, abductees scored higher on the Openness factor, andlower on the Conscientiousness factor.

Insert Table 5b about here

Males scored within the low range on the Agreeableness dimension (μ=106), with particularly low scores on such aspects of Agreeableness as Trust (μ=18), Straightforwardness (μ=16), and Compliance (μ=15). They also scored within the low range on the dimension of Achievement Striving (μ=17), part of the Conscientiousness, factor, which was otherwise average overall.

Table 5

Multidimensional Personality Questionnaire (MPQ) Group Scores

11 Scales

	Mean	SD
Well-Being	19.6	3.1
Social Potency	13.0	2.5
Achievement	8.91	3.52
Social Closeness	10.36	2.3
Stress Reaction	9.27	6.4
Alienation	5.36	4.3
Aggression	6.73	3.6
Control vs. Impulsiveness	14.2	3.4
Harm Avoidance	13.91	2.3
Traditionalism	12.91	3.8
Absorption	14.64	6.7

NEO-PI-R Group Scores

5 Dimensions

	Mean	SD
Neuroticism	83.8,	6.3
Extroversion	115.6	9.4
Openness	117.9	19.8
Agreeableness	119.6	18.8
Conscientiousness	118.36	17

Table 5a

Multidimensional Personality Questionnaire (MPQ) Group Scores

			"z" Scores	
	Mean	SD	Males	Females
Well-Being	19.6	3.1	-.584	.745
Social Potency	13.0	2.5	-.11	.497
Achievement	8.91	3.52	-1.82	1.047
Social Closeness	10.36	2.3	**-2.19 ***	**-3.23****
Stress Reaction	9.27	6.4	-1.03	.378
Alienation	5.36	4.3	1.72	**2.65****
Aggression	6.73	3.6	.71	.271
Control vs. Impulsiveness	14.2	3.4	-.05	.0414
Harm Avoidance	13.91	2.3	.24	-1.098
Traditionalism	12.91	3.8	-1.56	.848
Absorption	14.64	6.7	**-2.27***	-1.49

Test of means:

H_{01}: $\mu_x = \mu$ $\qquad$ $^*\alpha = .05$

H_{11}: $z_{1-\alpha/2} < z_{obs} < z_{\alpha/2}$

Reject H_0 when: $-1.96 > z_{obs} > 1.96$

Test of Variance:

H_{02}: $\sigma_x^2 = \sigma^2$

no significant differences

Female abductees displayed a different overall pattern of personality tendencies on the NEO-PI-R, with higher than average scores on the dimensions of Extroversion (μ=122), and Agreeableness (μ=137). Their scores were particularly high for such aspects of Extroversion as Activity (μ=22), and Positive Emotions (μ=24). Other scores which tended to be higher than average in female abductees were Values (μ=23), Altruism (μ=28), and Tender-Mindedness (μ=24).

When male and female abductees' scores were pooled, they were different from the general population, as a group, on several of the subscales of the NEO-PI-R. They scored higher on the Depression and Impulsiveness subscales of the Neuroticism Factor. They scored higher in both Fantasy, and Openness to Values subscales in the Openness factor. They scored lower on the Straightforwardness subscale of the Agreeableness factor. On the Conscientiousness factor, they scored lower on the Competence, Dutifulness, Achievement Striving, and Deliberation subscales.

Insert Table 5c about here

Table 5b

NEO-PI-R Group Scores

		Combined (weighted m and f) Mean "z" scores	
	Mean	SD	"z"
Neuroticism	83.8,	6.3	1.81
Extraversion	115.6	9.4	.96
Openness	117.9	19.8	**2.241***
Agreeableness	119.6	18.8	-.966
Conscientiousness	118.36	17	**-2.541***

Test of means:

H_{01}: $\mu_x = \mu$ $\quad$ $*\alpha = .05$

H_{11}: $z_{1-\alpha/2} < z_{obs} < z_{\alpha/2}$

Reject H_0 when: $-1.96 > z_{obs} > 1.96$

Test of Variance:

H_{02}: $\sigma_x^2 = \sigma^2$

no significant differences

Table 5c

NEO-PI-R Group Subscale Scores

	Combined (weighted male and female) Mean "z" scores "z"
Neuroticism facets	
N1: Anxiety	.769
N2: Angry Hostility	.253
N3: **Depression**	**2.23***
N4: Self-Consciousness	1.269
N5: **Impulsiveness**	**2.499***
N6: Vulnerability	1.748
Extraversion facets	
E1: Warmth	-.561
E2: Gregariousness	.429
E3: Assertiveness	-1.326
E4: Activity	.949
E5: Excitement-Seeking	1.168
E6: Positive Emotions	1.639
Openness facets	
O1: **Fantasy**	**2.41***
O2: Aesthetics	.531
O3: Feelings	-.024
O4: Actions	1.825
O5: Ideas	1.467
O6: **Values**	**2.891***
Agreeableness facets	
A1: Trust	-1.578
A2: **Straightforwardness**	**-2.422***
A3: Altruism	.147
A4: Compliance	-.424
A5: Modesty	-.995
A6: Tender-Mindedness	1.353

Table 5c (continued)

Conscientiousness facets	
C1: **Competence**	**-2.181***
C2: Order	-.727
C3: **Dutifulness**	**-3.438***
C4: **Achievement Striving**	**-2.212***
C5: Self-Discipline	-1.27
C6: **Deliberation**	**-2.221***

These scales provide a complementary composite of the personalities and cognitive styles of the abductees from this sample. No clear psychopathology was evident in their scores on the factors measured. However, certain subscales of the MPQ and the NEO-PI-R showed clear group differences in certain aspects of abductees' personalities. They tended to score lower on Achievement, or Achievement Striving, meaning that they tended not to be all that ambitious, or to work harder than necessary. They also scored low on Social Closeness, meaning that they preferred greater self-sufficiency. Similarly, they scored higher on the Alienation scale, meaning that they often felt themselves to be victims of bad luck, persecution, the targets of false rumors, and betrayals. They scored higher on a Depression suggesting that they tend to view the world more negatively, or pessimistically than most, and they scored higher on Impulsiveness, meaning that they tend to act or decide on things without due consideration. This was also corroborated by a low group score on Deliberation. they also scored higher on Fantasy scales, suggesting that they indulge more in fantasizing, and the lead a rich internal life. Higher scores on Openness to Values also suggests that they are more willing to entertain alternate world views, religious doctrines, or philosophies than most. The fact that they scored significantly lower on Straightforwardness suggests that they are more likely to

mislead others, or to misrepresent things, through deceit, charm, or omission. Finally, their low scores on Competence suggests that these abductees tend to hold poor views of their own abilities, making them more likely to see themselves as lacking in control, or view themselves as victims.

Together these measures suggest that, although abductees as a group do not display any clear psychopathology, they show considerable differences on measures of personality, beliefs, and cognitive style when compared to the general population. They tend to be more depressed than is generally found. They have stronger beliefs in UFO-related phenomena. They tend to show more of a somewhat isolationist, conspiratorial, and paranoid-like cognitive style. Scores on the NEO-PI-R corroborated this finding, in that abductees tended to report elevated levels of mistrust, social isolation, and fantasy-related imaginal abilities.

Content Analysis

The contents of abductees' hypnotic narratives were scored, categorized, and compared with general findings available from the literature. Much of the content of the narratives obtained from abductees during the present study agrees with the pattern of features found in the popular culture. The specific details of these encounters, such as the ships and the beings involved, differed considerably from individual to individual, but certain themes seemed to emerge which may be described as typical. Themes typical to abduction narratives included medical experimentation and reproductive themes with their attendant invasive effects, and communications with aliens, such as apocalyptic themes communicated specially for the benefit of the abductee. Religious themes were also communicated to abductees regarding some greater spiritualism.

The content analysis data from these narratives were distributed in a "J"-shaped distribution, tending toward zero. Since there is no statistical operation which can transform this distribution to a normal distribution, the test statistic for evaluating the hypothesis must be non-parametric. The Wilcoxon Signed-Ranks Test, or "U" test was used to test whether there were significant increases in narrative content (elaborations) from the time of initial interview, to the time of the first hypnotic session (t_1), and to the time of the second hypnotic session (t_2). These tests are summarized in Table 5d. There were significant elaboration effects for medical procedure content only, despite apparent increases in overall narrative scores from t_1 to t_2.

Insert Table 5d about here

Non-Parametric statistics are, by nature, less powerful than parametric statistics, which may have accounted for the lack of effects. However, the sample size may have also contributed to the negative finding. As a test for this, the minimum statistical power required to detect an effect 80% of the time was calculated (parametrically), as an upper limit of statistical power available, or as a lower bound on effect size required (see Appendix N). It was found that an effect size of at least .98 SD would be required in order to detect it 80% of the time, were parametric tests available. In fact the size required would be greater than 1 SD, in this instance, which is considerable given the sample size. As a result this statistical weakness, and the very exploratory nature of this study from the outset, the remaining portion of the results are treated descriptively.

Table 5d

Content Elaboration Statistical Tests

Wilcoxon Signed Ranks Test (non-parametric)

Test:	Mean	SD
New Material Introduced Since Interview; t1	13.9	29.7
New Material Introduced Since Interview; t2	19.4	22.27

z = -.845 Asymptotic Sig. (2-tailed) = .398
(based on negative ranks)

Test:		
General Communication; t1	2.7	4.74
General Communication; t2	3.4	3.89

z = -.679 Asymptotic Sig. (2-tailed) = .497
(based on negative ranks)

Test:		
Medical Procedures Content; t1	2.1	4.58
Medical Procedures Content; t2	5.0	6.41

z = **-2.207*** Asymptotic Sig. (2-tailed) = .027
(based on negative ranks)

Test:		
Alien Being Content; t1	2.0	3.2
Alien Being Content; t2	2.7	3.37

z = -1.219 Asymptotic Sig. (2-tailed) = .223
(based on negative ranks)

The most common features (highest scoring elements in the content analysis) for first session narratives were the various features relating to uncertainty (hesitations, pauses, self-doubting comments, etc.), and expressions of emotions (see Appendix M). Fully three-quarters (77%) of those emotions expressed were negative, making the experiences recounted acquire more unpleasant characteristics during hypnosis. The next most frequently occurring features of the scored narratives were descriptions of things experienced (setting, beings, lighting, etc.) and descriptions of physical sensations (cold, heat, pain, etc.) and actions. Clearly the experiential aspects of hypnotic regression dominated their narratives, above and beyond the actual sequence of events described, or the thematic details pertaining to them. After experiential aspects, the most commonly described events in their narratives were (in order of frequency) communications, medical procedures, the aliens themselves, and references to their craft.

Abductees reported significantly more medical information about their putative abductions during the second session ($z=2.207$, $p<0.05$). During the second session, all experiential scores increased, but retained a similar pattern to that observed during the first session. This elevation reflects the overall increase in narrative content during the second and final session, as more abductees recounted more experiences relating to their abductions. The degree of scorable narrative content themes pertaining to abduction also increased, but the relative frequencies shifted. The most frequently occurring theme during the second session was related to medical procedures, followed by communications, then alien beings, then references to ships. References to medical procedures tripled, and communications doubled from their narrative levels during the first session, as the total volume of scorable narrative content of the second session was only 71% greater than the first.

As was predicted, the more highly hypnotizable participants produced more elaborations and more new content in their hypnotically obtained narratives, and the lower hypnotizable participants produced the least to none (see Table 4). During the first hypnotic exploration session, only two abductees produced new material about the same encounters they had previously described non-hypnotically during interview (84% and 78% new material respectively). These same two abductees also produced entirely new episodes of abduction, previously unsuspected by themselves during the same first session of hypnotic regression. Their SSHS:C scores both fell within the High hypnotizability range (participants 9 and 10 respectively).

During the second hypnotic exploration session, seven participants produced new material with respect to what had been described during their pre hypnotic interviews, ranging from 22% to 100% new material. The mean percentage of new material for second session narratives was 35.7%, whereas it was only 14.7% during the first session. The mean SSHS:C scores for those whose narratives contained more than 50% new material was 6.8, whereas the mean SSHS:C score for those whose narratives contained less new material was 4.5. The same two abductees who produced entirely new episodes of abduction during the first session did so yet again during the second session (participants 2 and 4). Their scores on the various demographic, belief, and attitude measures are presented in Table 4 for comparison to those abductees who produced no new material in either of the hypnotic explorations sessions (participants 5, 8, and 11).

Absorption is a measure of the construct of selective attentional focus. It has been found to correlate reasonably well with hypnotizability scores (although in a non-linear fashion, see Spanos, et al, 1987). The mean Absorption scores from the MPQ (Tellegen, 1982) were low, but within the

normal range (μ=14.6) compared to the general population (X=20.5) for the group. Males scored significantly lower on Absorption than the population norms. However, it was the distribution that was interesting: the individuals who scored as Highly hypnotizable were the lowest on Absorption, and vice versa, with the Medium Hypnotizable falling in the middle of the Absorption score as well. This inverse relationship is an interesting contradiction to the expected pattern, but it did seem to be related to those individuals who were lower hypnotizable, but who produced an increase in elaborations or new information during hypnosis relative to their accounts during interview (i.e., participants 6 and 10).

Overall, abductees produced more elaborate and more emotionally laden narrative content during hypnosis than was obtained during non-hypnotic interview, and repeated sessions produced more of these elaborations. Only two participants produced entirely new episodes of abduction during hypnosis, seven elaborated on those episodes already described on interview, and only two participants produced no new information at all during hypnosis.

Discussion

In view of the fact that there is so little scientific support for the extraterrestrial explanation, it easy to see why we question the psychological makeup or motivations of the individuals themselves. However, as a group, abductees don't appear to manifest any greater degree of psychopathology than can be found in the general population (e.g., Spanos, et al., 1993). The view that they don't tend to be any more different than the rest of us no longer appears to be entirely accurate. They do express differences in terms of richness of imagination, social isolation, cognitive rigour, and beliefs. Abductees were more likely to endorse beliefs in unexplained, parapsychological, paranormal

and spiritual phenomena than the general population. They also showed a greater degree of conspiratorial or paranoid-like thinking relative to what is generally found. The abductee group in the present study were within the average range with respect to attitudes toward hypnosis, and overall hypnotizability. However, the relative numbers of very high and very low hypnotizable participants was greater than would have been expected in a sample this size.

Abductees also tended to have greater visualization and mental imagery skills than are generally found in the population. They tended to endorse more items on personality scales characteristic of social isolation and alienation from others, and they clearly held strong UFO-related beliefs. It is unclear which caused which, but such characteristics are consistent with known vulnerability factors for confabulation, errors in attribution, and memory disotrtion (Labelle, Laurence, Nadon, & Perry, 1990; Laurence, & Perry, 1983), as are seen in individuals who are described as being fantasy-prone (Lynn and Rhue, 1986).

Individuals who claim to have been abducted by aliens were evaluated as well as hypnotized to assess how their stories evolved with repeated hypnosis. Narratives not only become more complex with each hypnotic recall, but their narratives appeared to continue to evolve between sessions (seen in the amount of new medical procedure material in session #2). Although we lacked the statistical power to demonstrate a robust effect across sessions, most abductees elaborated on the original episodes described during non-hypnotic interviews. Complex memories of events require rehearsal and often become embroidered during repeated tellings. This is particularly reminiscent of cases of satanic ritual abuse or complex multiple personalities that have been publicized in the recent years (e.g., Mulhern, 1994).

The typically reported aliens, or "grays", are usually small, pale, sexless creatures with large, dark, expressionless eyes set in a proportionately large, smooth, almost featureless head. The nose and mouth are minuscule or nonexistent by comparison. Their hands are often reported as being elongated, fine-boned and nimble, although abductees often report having been handled very roughly as well. They apparently do not speak using words, but communicate through thought transmission, and their gaze has been reported to have a paralyzing or hypnotic effect. There are also reports of two or even more different subtypes of aliens: the smaller, more common "workers" (described above), and a larger, wiser, "elder race" often portrayed as having the answers to deep questions, or as being the harbingers of a new era equated with Utopia or salvation.

There have also been descriptions of beings almost indistinguishable from ourselves, except for their height, fair coloring, and physical beauty. These "Blondes" may be the twentieth century's angelic incarnation, as they are typically viewed by those in the UFO community as benevolent and protective. 'Protection' implies that we Humans either need to be protected from ourselves, which is a common theme in abduction communications, or from other meddling space-faring species. Anyone who has seen a western movie, or any other action format version of the standard morality play knows that a 'good guy' is only as good as the 'bad guy' is bad. Predictably, we earthlings apparently face other species of abducting aliens, also of nefarious intent. These aliens, known as "reptoids" to several groups of believers, resemble the cinematic monsters of the '50's drive-in movies: large, reptilian, gray-green, sharp teeth, sinister eyes, and sharp claws. In short, as much as the blondes represent everything that is angelic, beautiful, and good, the reptoids are tailor-made villains, equipped with everything to evoke fear in Homo Sapiens.

The cast of characters could not have been better designed by Hollywood special effects teams in order to play out another new struggle between the forces of light and dark, with Humans as the pawns. Interestingly, the drama plays itself out in remarkably humanoid terms, making it easy to relate to each of the participant species. There are those who represent the good and benevolent side of our nature (blondes); there are the dispassionate neutral intellects, whose description resembles their emotional valence (gray); and those who represent the more sinister/predatory side of nature (reptoid). The resemblance to the many creatures of mythology is uncanny, and has not gone unnoticed by many scholars (e.g., Campbell, 1986; 1990). Unfortunately, rather than simply taking the form of myth, from which we struggle to understand our own existence and place in the universe, it has become a truly believed-in reality for many. Thompson (1991) stated that the ancient mythical creatures, such as harpies and centaurs that we now view as being clearly fictional, were deeply believed-in in their day. Perhaps the power of myths is that, at least for a time, they can be believed in.

The fact that the various universes of science fiction stories in print and television are populated with highly anthropomorphic characters is based on a similar literary device, well-known to mythology: identification. We seek to observe and understand the mysteries of the universe and the drama of life in forms that we can identify with, as reflections of ourselves (Baker, 1997). Coffey (1992) also wrote about our tendency to project Human qualities on the external world. He noted that, not only is there no evidence that extraterrestrial life exists, but evolution itself is not a universal process linked to physical laws, as we assume it is. Evolution is a chain of contingent events, which could easily have been otherwise if any of the events in our biological history had been different.

> The evolutionary conclusion that humanoid intelligence elsewhere is improbable is not due to any anthropomorphic bias, but it is because of the deep understanding that evolution has no real goal other than adapting creatures to specific local environments. Neither we, nor our mode of intelligence, are the high point of evolution. The pathways of evolution are too circuitous for that to ever be the case." (Coffey, 1992, p. 28).

It seems unlikely that evolutionary processes would produce little humanoid creatures with slender necks, enormous crania, and no discernible reproductive organs, who resemble Human fetuses and who communicate telepathically. Elves and fairies are equally, if not more, probable. Coffey felt that the hope of finding Human-like intelligence elsewhere in the universe was akin to a religious conviction. He added that "It is religious in that it rests upon faith - not a rational comprehension of the message the evolutionary record cries out to us, of humans elsewhere there will be none forever." (Coffey, 1992).

PART 2

A Confabulation Control Experiment: Modeling Cultural Influences

Inspired by the controversy revolving around reports of UFO abductions and hypnosis, Lawson (1977; 1980) sought to experimentally produce UFO abduction stories from people who did not claim to have been abducted. He subjected 20 volunteers, who reported no particular interest in UFOs, to hypnotic induction; then asked them to imagine what it would be like to be abducted. More specifically, he asked them to imagine that they had been abducted by aliens, and to describe the experience (see also George, 1995). Lawson found, to the surprise of many, that "...imaginary subjects under hypnosis report UFO experiences which seem identical to those of 'real' witnesses." The conclusions he arrived at are consistent with the notion that many, if not all, abduction accounts are based on imagination, not accurate memories.

He later re-examined the data obtained from this study, and adjusted his interpretation. Lawson felt that there were subtle, but reliable differences between the real and imaginary abduction narratives in his study, in that the real accounts seemed to contain a greater frequency of reference to the physical effects and sensations associated with their abduction experiences, whereas the imaginary abductees did not. This discrepancy might have been expected given the differences in convictions about the reality of the experience between the two groups. However, Lawson later suggested that UFO abduction experiences were founded on trace memories of the abductees' own birth experiences, richly embroidered with elements of fantasy and influences from contemporary popular culture (Lawson, 1988).

Although this interpretation may be more terrestrial, it is no more plausible, given what is known about childhood amnesia (Howe, Courage & Peterson, 1994; Michaels, 1991; Peterson & McCabe, 1983). Nevertheless, the concept of creating experimental conditions under which the abduction phenomenon can be studied was sound. By creating abduction scenarios during hypnosis in non-abductee volunteers, Lawson was able to gain access to the general knowledge held about the nature of abduction phenomena. The fact that the participants so effectively mimicked the content of abductee narratives may have been interpreted differently by Lawson, but it points to the lack of special interest, skill, or training required to successfully fabricate such stories. Those highly hypnotizable subjects illustrated the power of information unrelated to hypnosis on the hypnotic situation.

Perhaps the most well-known area of research in this effect is the "misinformation effect" through which some post-event misinformation influences or changes subjects' recall of the original event. Although there are still contentions about the exact cognitive mechanisms at play in the misinformation effect, the available research indicates that memories for observed events can be altered in many ways. Studies assessing how leading questions can selectively bias the ways subjects report an event (Loftus, 1979), or how leading questions can create an event that, in fact, did not happen (e.g., Ceci & Bruck, 1993; Hyman, Husband, & Billings, 1995) have severely challenged the traditional views of memory as a repository of information. Most importantly, not only does post-event misinformation change the content of what one remembers, but the same effects have been found when pre-event misinformation is presented (Kenney & Laurence, 1990; Laurence, Kenney & Cassar, 1997). This is particularly relevant when abduction therapists and UFO investigators convey their expectations and beliefs before engaging in the

process of recovering memories (see also Jacoby & Whitehouse, 1989 for an experimental demonstration of non-conscious influences on memory; Harris, Lee, Hensley, & Schoen (1988) on the non-conscious influence of cultural scripts on recall).

Simulation Versus Confabulation

By asking participants to imagine abduction scenarios while hypnotized, Lawson (1980) employed an aspect of real vs. simulator paradigms used in hypnotic research (e.g., Orne, 1970). Orne recognized the power inherent in the real-simulator approach to study outward differences between hypnotic and non hypnotic behavior (Orne, 1979; see also Sheehan & Perry, 1976, for a review of procedures). Briefly, the real-simulator approach compares highly hypnotizable participants in hypnosis with low hypnotizable participants asked to simulate hypnosis. Logically, if a difference were found, then one could infer that hypnosis and possibly hypnotizability might be responsible. If no difference were found, then the data could be interpreted in terms of the demand characteristics of the situation. Orne (1959) defined these demand characteristics as implicit cues in the design and/or in the procedures of an experiment which communicate the experimental hypothesis to the subject. Very few behavioral differences have been found to differentiate highly hypnotizable subjects during hypnosis from their faking low hypnotizable counterparts (Sheehan & Perry, 1976).

Although not a true real-simulator paradigm, Lawson's study could be described as an imagination-, or confabulation-control, paradigm. Lacking properly designed tests and controls, though, his study could not provide a clear interpretation, as was evident in his later theorizing (Lawson, 1988). In the present study it was proposed that by elaborating on Lawson's confabulation-

control paradigm, by presenting controlled pre-hypnotic suggestions prior to administering a modified SHSS:C, the influence of the pre-hypnotic information could be observed. The suggested information was predicted to produce a clear effect on the narrative content in the stories told by non-abductee volunteer participants, about imagined UFO abductions during hypnosis.

Hilgard, Crawford, Bowers & Kihlstrom (1979) demonstrated that by replacing one of the original SHSS:C items at the option of the investigator for the purposes of an intended study did not violate the usefulness of the established norms of the standardized SHSS:C. They dubbed this form the *tailored* SHSS:C (Hilgard, Crawford, Bowers & Kihlstrom, 1979) allowing the design of an experiment for its logical requirements. By modifying the Dream item of the SHSS:C (item #6) we are able to replicate the UFO abduction exercise conducted in the Lawson study,

Based on the common emerging themes from abductees' stories in Part 1, two separate pre-hypnotic suggestions were constructed and applied to a group of non-abductee, volunteer participants who were randomly divided into three groups, two suggestion conditions (groups A and B) and one no-suggestion control (group C). Medical examinations and special communications were the main features of the abduction accounts obtained in Part 1 (and are also reflections of the trends seen in television, film, and printed media). Although they were not equally represented in the abductees' stories (medical experimentation, overall, seemed to dominate the communication themes), they were the two most commonly described features of abductions, other than the narrative content devoted to describing details of the beings and settings. Based on these features, we constructed two separate suggestions designed to reflect these themes, when informing participants of what is generally known,

to date, about UFO abductions. The suggestion conditions emphasized medical examinations over other aspects in one group (A), communicated messages over other aspects in another group (B), and no suggestion in the third group (C). These pre-hypnotic suggestions mimic the kinds of information, although distorted, available through various media in the popular culture. It should be re-emphasized that this is not a conclusive test for confabulation as an explanation for this entire phenomenon. The information in the popular culture is not necessarily the causal source for the kinds of reports commonly made, but more likely an interactive component, both feeding, and being fed by reports of abduction. However, by comparing the narrative content to a no-suggestion control group, we may interpret positive findings as meaning that expectation has a marked and measurable effect on experience.

It was predicted that the narrative content from group A would reflect the pro-medical bias of the pre hypnotic suggestion they received, as measured by the amount of medical-related content in the hypnotic narratives of their imagined abduction, relative to control. Group B was predicted to present more communication-related content in their hypnotic narratives than control. Group C, having received no additional information in their pre-hypnotic suggestions, were predicted to represent a baseline of what is generally known in the culture about the features of UFO abductions. Figure 2 presents the ideal predicted interaction pattern for the three groups and the two suggestion conditions graphically.

Insert Figure 2 about here

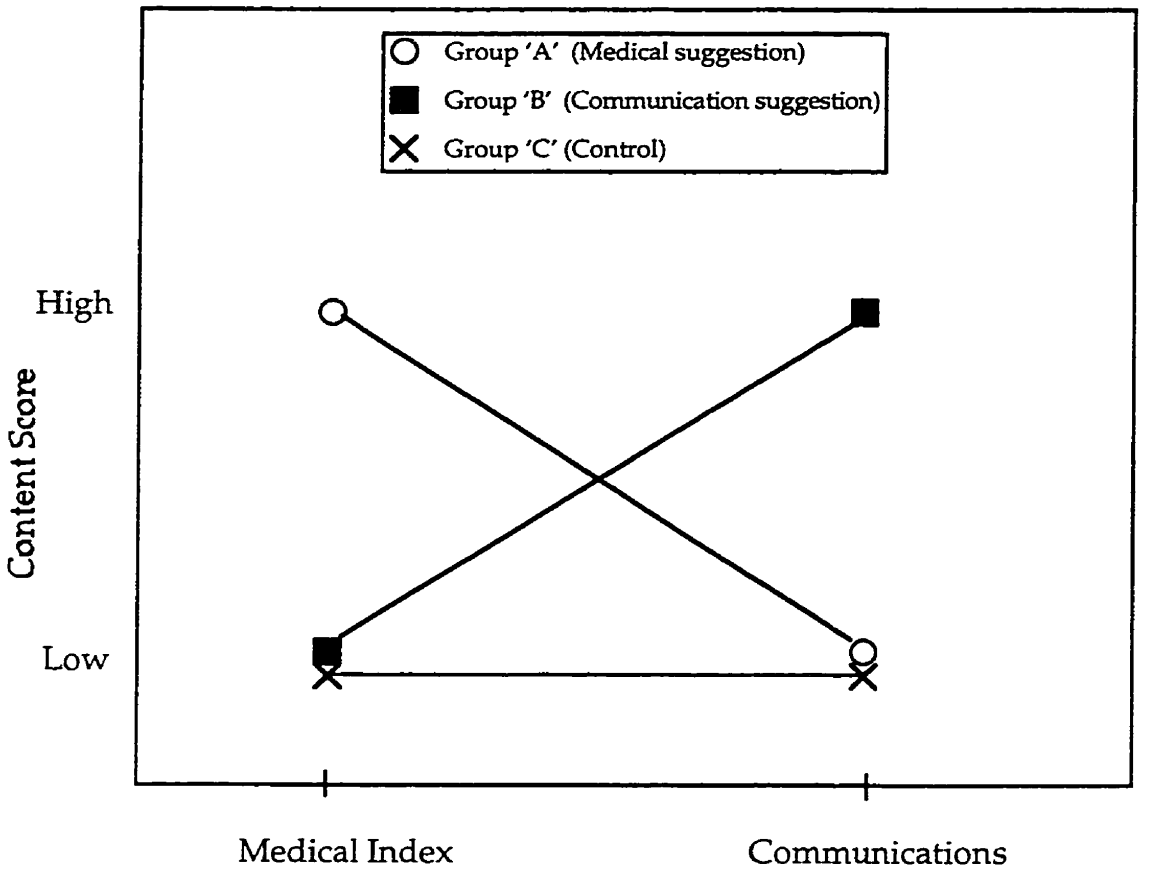

Figure 2. Predicted group means for medical procedure content, and special communications content in non-abductee hypnotic narratives of abduction.

Method

Participants

Forty-five non-abductee, volunteers (24 male, 21 female, with a mean age of 26.6 years) took part in this study. Participants were quasi-randomly divided into three equal groups (n=15), two suggestion conditions and one no-suggestion control group. Participants were matched across groups for gender (approximately equal numbers of males and females per group). Table 6 present summaries of each of the groups' respective demographics, as well as summary demographic means collapsed across groups.

Insert Table 6 about here

Procedure

Participants were recruited for participation in ongoing hypnosis experiments at the Concordia University Hypnosis Laboratory through advertisements printed in the student papers, and posted announcements on campus. Participants previously underwent an introductory hypnotic session to assess hypnotizability (Harvard Group Scale of Hypnotic Susceptibility, Shore and Orne, 1962), without prior knowledge of the nature of the experiment for which they were to be contacted. Volunteers were then contacted by telephone, scheduled for interview, and seen for an additional two sessions lasting approximately 90 minutes each. During the first session, participants were briefed about the general nature of the study, asked for their consent, and then interviewed to obtain a brief history (in shortened form of the semi-structured interview used in Part 1), and to assess their level of knowledge and belief in the UFO abduction phenomenon.

Table 6

Participant Demographics Summary Table

Group	Sex	Age	Education	Religiosity*	UFO Beliefs*	Poss. ET Life*
'A'	M= 7/F= 8	27.6	14.9	0.65	0.8	1.47
'B'	M= 8/F= 7	27.8	14.53	0.87	1.0	1.53
'C'	M= 9/F= 6	24.7	14.5	0.9	0.63	1.47
Collapsed	M= 24/F= 21	26.7	14.6	0.81	0.81	1.5

* An identical Likert-type scale was used here as was used in Experiment 1 to rate levels of belief.

After the first session was completed, participants were given questionnaires to complete at home (see Part 1 Materials section), and were scheduled for the subsequent, final session, to be held approximately one week after the first. These appointments were later confirmed by telephone, when participants were given an opportunity to ask questions regarding the questionnaires, or to voice any concerns about participation. The second session consisted of a brief summary of the hypnotic procedure to be done, following the general format of the SHSS:C introductory preamble, with the insertion of the pre-hypnotic suggestion material (one of three conditions) before beginning

the hypnotic induction. The modified SHSS:C (see above, and Appendix K) was then administered, including the follow-up interview questions. Participants were then thanked, debriefed, and remunerated for their participation. They were also given an opportunity to provide feedback, or voice any questions they had about any aspect of the study. The procedures for Experiment 2 resemble those depicted in Figure 1, except that the latter two hypnotic exploration sessions depicted in that figure were absent in this experiment.

Each participant's hypnotic narrative was transcribed, and scored by two raters according to the same scoring protocol established for Part 1. The same interrater reliability applied for this experiment as well.

Materials

Harvard Group Scale of Hypnotic Susceptibility: A (Shor and Orne, 1962). All Participants in this experiment underwent an introductory hypnosis session involving the administration of this scale, which is designed to test hypnotic responsivity in a group context. Participants listened to a tape recorded version of this scale, including an initial relaxation induction, followed by 11 hypnotic suggestions. These suggestions ranged in response difficulty from motoric (least difficult) through challenging, to more cognitive items. Motoric items involve suggestions requiring a motor response, such as experiencing a feeling of heaviness in an arm when the suggestion of weight is given to the individual with his or her arm extended, and then lowering that arm. A challenge item requires a motor response to be challenged by the participant him/herself. For example, when participants are asked to imagine that their arm is too stiff to bend, they are then challenged on this when asked to see "how difficult it is to bend", by trying to bend that arm. Suggestions requiring more cognitive responses include suggestions of imagining a fly in the room, or forgetting the

events of the session post-hypnotically until a cue is given to reverse the suggested amnesia.

Overall, the session lasts approximately 45 minutes, after which participants report on their experience by answering a single free recall question and 11 forced choice questions (one for each suggestion). The forced choice questions ask the participant to select the responses which best correspond to their own responses to the suggestions, but based on what they felt an onlooker would observe. This introduces an element of objectivity by making the response based on an impression of what an outside observer would perceive, rather than on a subjective experience. Participants' scores are calculated by summing the responses indicating a positive effect of suggestion, or those items for which they objectively have passed. An additional point is scored for those participants who pass the amnesia suggestion, as assessed by the number of items recalled in the free recall portion of the scale. The HGSHS:A is traditionally scored out of 12. However, since one suggestion occurs out of hypnosis, one item has been dropped, and the scale ranges from 0-11. Standardization of this scale has been documented in Montreal as well as elsewhere (see Laurence & Perry, 1982).

Stanford Hypnotic Susceptibility Scale, Form C: Modified. The SHSS:C was used both to supplement estimates of hypnotizability established by the HGSHS:A, and to provide an experimental platform for the confabulation control paradigm. Item 6, the hypnotic dream in the SHSS:C, was modified (see Hilgard, Crawford, Bowers & Kihlstrom, 1979) to produce a *tailored* SHSS:C. Instead of suggesting that the subject will fall asleep and dream about the meaning of hypnosis, subjects were instructed to fall asleep and dream about a

UFO abduction, as if they were themselves being abducted by aliens (see Appendix K).

Suggestions. Based on the common emerging themes from our work with abductees, two pre-hypnotic suggestions were constructed and applied to two of the three non-abductee, volunteer participant groups. Prior to administering the modified SHSS:C, and during its introduction, participants were provided with a brief outline of what UFO abductions seemed to be like. Three outlines were provided resulting in 3 different pre-hypnotic suggestions (see Appendix L):

Group A received the information that the majority of UFO abductions reported some kind of medical examinations, while only a minority reported receiving special information in the form of a message of some kind.

Group B received the reverse information, in that they were told that the majority of reported UFO abductions received some kind of special message, while only a minority involved some kind of medical examination.

Group C received no additional information about UFO abductions, serving as control.

Participants' narratives from the SHSS:C dream item were transcribed and scored according to the same protocol for Part 1. Story content was categorized according to the same criteria used for abductees.

Additional Questionnaires. With the exception of the NEO-PI-R, the same battery of personality and belief questionnaires was used for this Experiment as was used in Part 1. The NEO-PI-R was not included in the questionnaire package given to participants in this experiment in order to reduce the time demands placed on volunteers.

Results

Demographics for participants from Experiment 2 are grouped and presented according to both experimental condition, and as a whole. These findings are summarized in Table 6. There were no differences between groups in basic demographics, in that each group represented similar age, religious type and devoutness, education, with gender distributed roughly equally across the three groups. Overall, participants in this study were younger (μ=26.7, SD=6.5) than the abductees examined in Part 1 (μ=31.3, SD=6.2). They were also more educated (μ=14.6, SD=1.7), in general, than abductees (μ=12.1, SD=2.3). The participants in Part 2 were asked about their beliefs in UFO-related phenomena, as well as in their own religion (based on beliefs, not extent of practice). Using the same three-point scale used in Part 1, participants described themselves, overall, as being medium in their level of religious devotion (μ=0.81 on a scale from 0 to 2), and equally accepting in their beliefs in present-day UFO visitations (μ=0.81 on a similar scale). Interestingly, their willingness to believe in the possibility of extraterrestrial life (independent of whether such life may be visiting us) was considerably higher (μ=1.49 on a scale from 0 to 2).

Hypnotizability, attitudes, beliefs systems and personality characteristics were also measured, and are presented in summary form in Tables 7 and 8.

Insert Table 7 about here

No differences were found between groups on measures of hypnotizability, the Absorption scale, Individual Differences Questionnaire, Paranormal Experiences Questionnaire, Unusual Personal Experiences, and Attitudes Toward Hypnosis, as presented in Table 7a. The Attitudes Toward Hypnosis scale is divided into three subscales which assess one's Positive Beliefs about

Table 7

Experiment 2 Group and Collapsed Means Summary Table for Hypnotizability, Beliefs and Attitudes

Group	Paranormal Experiences Questionnaire	Individual Differences Questionnaire		Unusual Personal Experiences		Attitudes Towards Hypnosis		
	Adult	IDQ	SSHS:C	UPEQ	Attitudes Total	Positive Beliefs	Mental Ability	Fearless -ness
'A'	5.8	63.5	6.7	5.4	74.5	26.4	23.3	25.3
'B'	8.4	67.7	5.7	6	70.1	21.9*	23.1	25.2
'C'	7.1	67.4	6.2	5.3	69.5	26.7	24	28.4
Mean	7.1	66.2	6.2	5.6	74.5	25	23.5	26.3

hypnotic procedures, the role of Mental Ability in hypnotic response, and Fearlessness toward hypnosis. Group differences were found on the Positive Beliefs subscale between groups. Group 'B' participants held significantly fewer positive beliefs about hypnosis than their counterparts in the other two groups ($F=3.283$, $p=0.047$). The potential impact of this difference is discussed below.

Insert Table 7a about here

Participants' Hypnotizability scores were measured by two scales in this study, providing a better estimate of their responses to hypnosis. Both the HGSHS:A and the SSHS:C scales provided measures of individuals' hypnotizability in this study. Participants' scores on the HGSHS:A were weighted (adjusted) to match the scale range of the SSHS:C. Hypnotizability is reported here as a combination, or Hypnotizability Index (HI), rather than as separate hypnotizability scores. Where the two scores were discrepant, an arithmetic mean is reported. Participants hypnotizability indices were comparable to those expected in the population ($\mu=6.2$; $SD=2.3$). Group means follow a similar distribution, with a slight, non-significant elevation of overall Hypnotizability within Group A ($\mu= 6.7$; $SD= 2.5$) with respect to Group B ($\mu= 5.7$; $SD= 2.7$) whereas Group C had a comparable mean ($\mu= 6.2$; $SD= 1.9$). The overall distribution of scores in the HI followed the expected Gaussian distribution. The drop in Group 'B's HI may reflect lower Positive Beliefs about hypnosis.

Table 7a

Analyses of Group Differences for Three Key Variables

Group Differences in Absorption? No

Analysis of Variance

Source	Sum of Squares	df	Mean Square	F	Probability
Between Gps	44.844	2	22.422	.464	.632
Within Group	2030.998	42	48.357		

Differences in Hypnotizability? No

Analysis of Variance

Source	Sum of Squares	df	Mean Square	F	Probability
Between Gps	8.533	2	4.267	.764	.472
Within Group	234.667	42	5.587		

Differences in UFO Beliefs? No

Analysis of Variance

Source	Sum of Squares	df	Mean Square	F	Probability
Between Gps	1.011	2	.506	1.163	.322
Within Group	18.258	42	.435		

Does narrative content correlate with hypnotizability? Mildly

Highest correlation of content indices with Hypnotizability is:
Medical Index
Pearson's = .26
Bartletts' Chi-Square = 2.967 p = .085

Personality traits were measured using the Multidimensional Personality Questionnaire (MPQ). No differences between groups were anticipated, and no differences were found between groups on any of the 11 subscales. Moreover, all scores on the 11 subscales fell within average ranges for similarly aged individuals in the populations used to norm this scale (see Tellegen, 1982). Mean subscale scores, collapsed across groups, are presented in Table 8. As can be seen, the non-abductee participants from Part 2 scored higher on measures of achievement (μ=10.4, SD=2.9) and social closeness (μ=12.6, SD=2.2), and were lower on alienation (μ=6.1, SD=3.8), than their abductee counterparts in Part 1.

Insert Table 8 about here

Interestingly, the mean Absorption scores for the non-abductee group (μ=21.8) were well within the average range, and were somewhat higher than those found in the abductee group (μ=14.6).

Participants' dream narratives from all three groups contained a remarkable range of UFO abduction-related material, with the critical aspects of medical procedures and special communications following predicted patterns according to the pre-hypnotic suggestion condition emphases. Table 9 summarizes the results found in Experiment 2. Participants experienced few difficulties engaging in the exercise of imagining an abduction scenario during hypnosis. Indeed their narratives contained a wealth of detail, emotion, and sensations; characteristics often used as the hallmarks of real events.

Table 8

Multidimensional Personality Questionnaire (MPQ) Experiment 2 Group Scores Collapsed Across Groups.

	Mean	SD
Well-Being	16.8	4.6
Social Potency	13.1	3.2
Achievement	10.4	2.9
Social Closeness	12.6	2.2
Stress Reaction	14.0	6.5
Alienation	6.1	3.8
Aggression	8.1	3.1
Control vs. Impulsiveness	14.6	2.3
Harm Avoidance	14.7	2.4
Traditionalism	13.9	4.3
Absorption	21.8	6.9

Insert Table 9 about here

Each group provided stories of abduction during hypnosis which could be scored, quantified, and compared. Again, the distributions of the content data were "J"-shaped, requiring non-parametric statistical analyses to make the planned comparisons for group by content index. The null hypothesis was that simulators hypnotic narratives would not reflect the content biases provided in each groups' pre-hypnotic suggestion condition. The Mann-Whitney Test provided the appropriate test statistic with which to test this. Before testing nthe planned comparisons, however, it was necessary to check the distributions of the content data for bivariate correlation. Using the Spearman's rho correlation, the Medical Content Index was found to correlate non-significantly with the Special Communications Index overall ($r = 0.211$). Each of the three groups were also tested separately, and found also to have no significant correlations between content indices, demonstrating that these indices are indeed unrelated, and orthogonal (see Table 9a).

Insert Table 9a about here

Group 'A', although no different from the other two groups on any of the substantive measures obtained, produced more information in its narratives than either of the other two groups individually. Although the independent category scores did not differ between groups, the mean category scores from each category, with the exception of the dependent variable categories and

Table 9

Experiment 2 Group and Collapsed Means Summary Table for Selected Narrative Content Categories

Group	Medical Procedures	Special Communic'n	General Communic'n	Alien Beings	Space-Craft	Technology	Emotions Positive	Emotions Negative	Sensations
'A'	3.33*	0.47	2.6	2.07	2.2	1.47	0.27	1.07	1.4
'B'	0.67	1.2*	1.53	0.93	1.8	0.13	0.87	0.4	1.13
'C'	0.6	0.07	0.87	1.27	3.27	0.47	0.2	0.6	0.87
Mean	1.53	0.58	1.67	1.42	2.42	0.69	0.44	0.69	1.13

references to alien beings were greater for Group 'A' than either of the other groups. This may have contributed to an effect in which the content scores for the dependent variable in Group 'A' (i.e., references to medical procedures) were relatively elevated. The scored category of General Communication, distinct from Special Communication, served as an index of general narrative activity, providing a means of testing the covariance of general information content with the variance accounted for by the dependent categories alone.

Table 9a

Test for Bivariate Correlation of Content Distributions

All Three Groups Together			
	Spearman's rho	Medical index	
		Special Communications	0.211
		Sig. (2 tailed)	.164
		N = 45	
Separate Groups			
A	Spearman's rho	Medical index	
		Special Communications	0.379
		Sig. (2 tailed)	.163
		N = 15	
B	Spearman's rho	Medical index	
		Special Communications	0.444
		Sig. (2 tailed)	.097
		N = 15	
C	Spearman's rho	Medical index	
		Special Communications	-0.133
		Sig. (2 tailed)	.637
		N = 15	

∴ These two content indices are orthogonal (unrelated)

Once it was determined that the content indices do not vary in any systematically related fashion, it was possible to carry out the planned comparisons for the groups and content indices, using non-parametric Mann-Whitney U tests, as shown in Table 9b. In Group 'A', participants' narratives of UFO abductions contained significantly more references to medical examinations or experimentation-like procedures (μ=3.33) than those in the control group and Group 'B' together (z=-3.194; p=0.001). Narratives from Group 'B' contained more references to Special Communication than Groups 'A' and 'C' together (z=-2.369; p=0.018). Although a less robust effect, it nonetheless supports the hypothesis that the information provided pre-hypnotically, pertaining to the special communication nature of abductions, would influence the content of the narratives from the group receiving this information. The pooling of Groups 'B' and 'C' in the first comparisons was justified, in that there were no mdifferences in Medical Content between these groups. Similarly, the second comparison demonstrated no differences in Special Communications content between Groups 'A' and 'C', making them effectively one group against which to test for effects. Other comparisons found that the Medical Content in Group 'A' was greater than the Special Communications Content for the same group. The reverse, however was not true for Group 'B'. The interaction was found to be significant (z=-3.284; p=.001). As predicted, the Control Group 'C' demonstrated no differences in either Medical or Special Communications Content.

Insert Table 9b about here

Table 9b

Test Statistics for Planned Comparisons in Experiment 2

Test Content Index Effect:

Is the medical content in group "A" greater than "B" and "C"? Yes
Mann-Whitney Test (non-parametric)

Test: Index	Group	N	Mean Rank	Sum of Ranks
Medical Index	No Medical Suggestion	30	19.15	574.5
	Medical Suggestion	15	30.70	460.5

Mann-Whitney U	109.5
Wilcoxon W	574.5
z	-3.194*
Asymp. Sig. (2-tailed)	.001

Is the Special Communication content in group "B" greater than "A" and"C"? Yes

Test: Index	Group	N	Mean Rank	Sum of Ranks
Special Communic'n	No Comm'n Suggestion	30	20.45	613.5
	Communic'n Suggestion	15	28.10	421.5

Mann-Whitney U	148.5
Wilcoxon W	613.5
z	-2.369*
Asymp. Sig. (2-tailed)	.018

Table 9b (Continued)

Test Statistics for Planned Comparisons in Experiment 2

Is the medical content in group "B" greater than "C"? No
Mann-Whitney Test (non-parametric)

Test: Index	Group	N	Mean Rank	Sum of Ranks
Medical Index	Communic'n Suggestion	15	15.87	238
	Control	15	15.13	227

Mann-Whitney U	107
Wilcoxon W	227
z	-.308
Asymp. Sig. (2-tailed)	.838

Is the special communication content in group "A" greater than "C"? No

Mann-Whitney Test (non-parametric)

Test: Index	Group	N	Mean Rank	Sum of Ranks
Special Comm'n	Medical Suggestion	15	17.07	256
	Control	15	13.93	209

Mann-Whitney U	89
Wilcoxon W	209
z	-1.503
Asymp. Sig. (2-tailed)	.345

Table 9b (continued)

Test Statistics for Planned Comparisons in Experiment 2

Is the medical content in group "A" greater than the special communication content? Yes

Test:		N	Mean Rank	Sum of Ranks
Special Commun'n - Medical Index	neg ranks	15	6.45	64.5
	pos ranks	15	1.5	1.5

z	-2.817*
Asymp. Sig. (2-tailed)	.005

Is the special communication content in group "B" greater than the medical content? No

Test:		N	Mean Rank	Sum of Ranks
Special Commun'n - Medical Index	neg ranks	2	4.5	9
	pos ranks	6	4.5	27

z	-1.279
Asymp. Sig. (2-tailed)	.201

Table 9b (continued)

Test Statistics for Planned Comparisons in Experiment 2

Is the Control group different in terms of medical or Special Communications Content?
No

Mann-Whitney Test (non-parametric)

Test:		N	Mean Rank	Sum of Ranks
Index Special Communic'n - Medical Index	neg ranks	3	3	9
	pos ranks	1	1	1

z	-1.473
Asymp. Sig. (2-tailed)	.141

Is the interaction significant? Yes

Mann-Whitney Test (non-parametric)

Test: Index	Group	N	Mean Rank	Sum of Ranks
Med-Com Difference	Medical Suggestion	15	20.63	309.5
	Commun'n Suggestion	15	10.37	155.5

Mann-Whitney U	35.5
Wilcoxon W	155.5
z	-3.284*
Asymp. Sig. (2-tailed)	.001
Exact Sig. (1-tailed)	.001

Figure 3 presents the data for the suggestion conditions graphically, for comparison with the predicted pattern shown in Figure 2. The predicted interaction pattern, although somewhat distorted by the differential volume of information provided across groups, is obtained, supporting the main hypotheses.

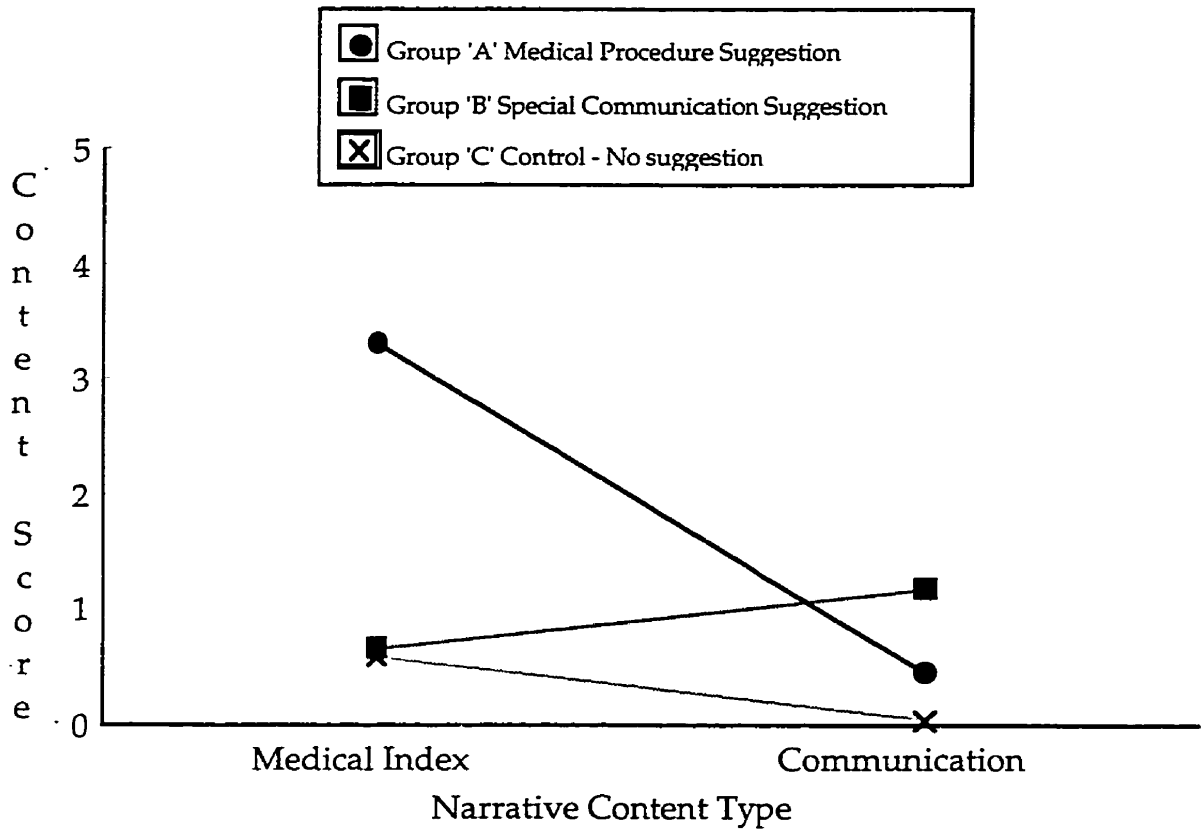

Figure 3. Experiment 2 mean content scores by suggestion condition

Discussion

As Lawson (1980) found, abduction-like experiences can be evoked in non-abductee volunteers during hypnosis with considerable ease. The vast majority (76.6%) of participants in this study were able to produce detailed, compelling, and logically sequenced narratives of imagined UFO abduction scenarios during hypnosis. None of the participants became convinced that the experiences they described during hypnosis were based in actual events, but several subjects were surprised by the intensity and frightening reality of their hypnotic dreams.

The participants in this study did not display any psychological traits that would indicate they were different from the general population. Their scores on measures of personality traits (MPQ), hypnotizability index, attitudes toward hypnosis, beliefs and individual differences indicated they were within the average range for the populations on which these measures were normed. There were no differences between groups on these measures which would have accounted for the pattern of results found.

In an effort to model the potential influences of popular culture, and media portrayals of this phenomenon, two fictitious suggestions were used in an attempt to influence the reports. In the case of the suggestion that most abduction reports featured medical examinations/experimentation (Group 'A'), the narratives obtained clearly reflected this information, confirming the hypothesis that information made available pre-hypnotically would influence the content of hypnotic narratives. It also provided support for the correlational studies charting frequency of UFO reports and release of movies or books about the phenomenon (see Simón, 1981; 1984). The narratives from this group contained more references consonant with this suggestion than those from the control group, who were given no pre-hypnotic suggestions, but produced

abduction narratives based solely on their existing impressions of this phenomenon.

The suggestion that most abduction reports featured some form of special communication (Group 'C') appears to have had less of an effect that the previous suggestion, but the narratives of the group receiving this suggestion reflected this content more than control nonetheless. Communication was scored according to two principles: general communication described in the narratives, reflecting the fact that individuals in the story were communicating with one another, was scored separately from cases of special communication. Special Communication describes instances in which aliens convey special information to their captives for the purpose of instruction. The pre-hypnotic suggestion referred to this form of communication as being a part of their purpose, but perhaps was not as stringent in its statement as desired, potentially producing some confusion about the specific nature of communication sought. In either case, Group 'B' contained more references to special communication than control, supporting the hypothesis. Even in the absence of any pre-hypnotic suggestion about the nature of UFO abductions, participants in the control condition were able to produce stories which closely resemble those found in actual accounts from abductees. This pattern supports the task demand characteristics view of UFO abduction phenomena in general.

Those participants who demonstrated greater hypnotic ability, as measured by higher than 8 scores on their Hypnotizability Index, were compared with those with little or no ability (lower than 4), in an effort to determine the effects of hypnotizability on the degree and type of narrative provided. The more highly hypnotizable subjects tended to produce more elaborate stories (containing more information) than lows, but the effect was not significant, suggesting that hypnotizability itself is not a requirement for confabulation.

Although these findings do not address the reality or unreality of UFO abductions, nor is it assumed that all abduction accounts are the product of confabulation, they do point out the limitations of using hypnosis to recover abduction accounts (Lawson, 1977; 1980). During hypnosis, non-abductee participants, when asked to explore what a UFO abduction scenario would be like, were able to do so with remarkable ease, regardless of pre-existing hypnotizability or Absorption capacity. Hypnosis, in this instance, produced a reliable confabulation effect, one that would possibly fool both the hypnotist and the hypnotizee had they both been willing to accept the resultant narratives as being reality-based. However, several questions remain: To what extent were the non-abductee narratives like those of actual abductees? Would their respective stories be distinguishable one from the other in some systematically identifiable way? Could a clinician make a distinction between a purely fabricated abduction story, and one that was believed?

PART 3

Comparison of Narrative Content: Believe it or Not

In an effort to address the previous questions regarding the similarity of real and fabricated narratives of UFO abduction, samples from each were compared and categorized by independent raters. If the experiences of abductees were based in reality, presumably they would be privy to aspects of the phenomenon that would not be available to the general public. Common media portrayals of abductions often reflect many of the details present in the stories told by abductees. However these portrayals often function as entertainment, and would present adjusted versions to meet this purpose, whether more sanitized, demonized, anthropomorphized, or mythologized. Even when abduction stories are portrayed in earnest attempts to document, they reach the public in relatively interpreted form (from the description of the abductee to the interpretation of the investigator, through editing and publishing stages, etc.). At the very least, some aspects seen in abductions, no matter how minor, would differ from those seen on television, movie screens, or in enthusiast publications. Presumably, then, the real thing should be discernible in some aspect from fabrications based more or less on the versions presented in the media. Moreover, if the fabricated versions arise from non-experts in the phenomenon (i.e., non-enthusiast, random volunteers), then the difference should be more evident.

Signal Detection

Detecting differences between distributions of data points is a process of separating one set (signal) from the other (noise). The task can be easy or difficult based on a number of factors, such as the relative distance between the

two distributions. For example, the more closely the signal resembles the noise, the more difficult it will be to separate from that set. The task may be further complicated by changing the strictness of the detection rule, based on the need for accuracy, or the cost associated with inaccuracy. For example, if the cost for false detections is low, than one can gain accuracy by simply claiming detection (hits) most of the time. More commonly, the cost associated with error is higher, and false claims of detection (false alarms) are discouraged. At times, the cost of inaccuracy is extremely high, so avoiding false claims of inaccuracy is paramount, making the task of accurately detecting signals far more difficult. In this instance more actual signals will go unclaimed (misses), and more non-signal events will be rejected (correct rejections) in order to avoid any false alarms. Confidence limits can be shifted, depending on the degree of accuracy desired, whereas the actual distance between the signal and noise distributions remains fixed. In this study, the confidence rule is set evenly, as there is no contingency associated with false alarms or misses.

Narratives from both the abductees in Part 1, and from the non-abductee participants in Experiment 2, when stripped of any identifying material, present an opportunity for raters to perform a signal detection task. Raters, asked to detect the abductees (signal) from the non-abductees (noise), may make one of the four possible responses described above when categorizing transcribed narratives: they may correctly identify abductee transcripts as being abductees (hit), they may identify non-abductee transcripts as being abductees (false alarm), they may identify transcripts from abductees as being non-abductees (miss), or they may correctly identify transcripts from non-abductees as being non-abductees (correct rejection).

Hypothesis

One of the hypotheses tested, also based on Lawson's (1980) research, was that volunteer participants would be able to provide UFO abduction accounts that so closely resembled those of the abductees, as to be indistinguishable from them. In a sense this would place the two distributions (i.e., signal and noise) so close together as to be overlapping, so as to make the signal detection task impossible. We asked a similar question: Do abductees narratives contain specific, special, or disticnt information that is detectable by independent raters? It was hypothesized that independent raters, including trained clinicians, would not be able to distinguish those hypnotically obtained narratives which came from individuals who claimed to have been abducted, from those who did not make such claims. It was also hypothesized that the strategies typically used by clinicians in order to evaluate the veracity of their clients' claims would not assist the raters with clinical training in obtaining greater accuracy. These strategies include using the presence of a greater degree of affective, or sensory content, as an indicator of events based in reality (see Kenney & Laurence, 1990).

Method

Of the forty-five hypnotic narratives obtained in Part 2, eleven were selected based on narrative length. These narrative selections were made regardless of the experimental group or condition in that experiment. The eleven imagined accounts were selected from all three of the experimental groups, and from all levels of hypnotizability. The narratives from both abductee and non-abductee samples were truncated, so as to consist of approximately 35 lines of text fitting on a single $8^1/_2$ X 11" page of paper. They were truncated by eliminating the introductory (induction) aspects of the hypnosis session, and its conclusion. Abductees in Part 1 were hypnotically

regressed to the claimed abduction episodes, whereas the non-abductee participants produced their abduction stories when asked to dream about an abduction episode during hypnosis. As a result, any references to the word "dream" were also eliminated from the non-abductees' transcripts, as this would make the detection task obvious. The non-abductee volunteers' stories were compared to narratives obtained from individuals claiming to have been abducted. The process of sampling and truncating the narrative transcripts resulted in two sets of excerpts, or fragments, of equal length: eleven from the abductee sample, and eleven from the non-abductees simulators.

Participants

Six independent raters examined the text fragments provided in order to determine the group from which the narratives originated. The raters (three male, three female) ranged in age from 28 to 76 years of age, with a mean age of 43. All raters had at least Bachelor's level education, with three having obtained Master's level and two Doctoral level education. Three of the raters were trained in clinical psychology. All raters were volunteer participants with no knowledge of the hypotheses other than that information provided in the rating instructions.

Procedure

Ratings. Raters were approached and given brief written instructions regarding their task. They were informed that there were 22 excerpts, or fragments of narratives, at least one of which was from an abductee, and at least one of which was a simulator (see Appendix M). The instructions to the independent raters were simply to carefully read each excerpt, and then to decide whether it was from a real abduction narrative, or a simulated one.

Instructions also asked the raters to note any rules or strategies they used to assist them in evaluating the excerpts. At the conclusion of their participation, their performance was scored and feedback was given, along with a brief verbal debriefing of the hypothesis being tested.

Materials

Narrative Excerpts. The hypnotic sessions for both groups were transcribed and then broken into an equal number of excerpts, or fragments. Twenty-two excerpts of equal length were prepared, 11 from each group. The contents of the narratives were then compared and categorized by six independent raters. Their instructions were simply to carefully read each excerpt, and then decide whether it was from a real abduction narrative, or a simulated one. Of the six raters, three were experienced clinicians, the other three were educated at graduate level or higher.

Results

The raters' mean performance of determining the source of the transcripts was at chance level. They ranged in accuracy from 82% to 18%. They were able to correctly identify the excerpts from abductees only 44% of the time, and correctly identify simulators 52% of the time, with a mean accuracy of 48%. Figure 4 presents the accuracy of raters schematically.

Insert Figure 4 about here

In order to test the null hypothesis that raters' performances would not differ from chance, we used the z statistic, on the unit normal distribution, as described in Table 10.

Table 10

Analysis of Rater's Performances

Null Hypothesis: Rater's performances are not different from chance.

H_{01}: $z = 0$

Test Statistic: Unit Normal Distribution $2\alpha = .05$ (two-tailed)

Reject H_{01} if :

$-1.96 > z > 1.96$

$\sqrt{n}(z) = -0.0408$

∴ Cannot reject the null hypothesis. Raters are performing at chance.

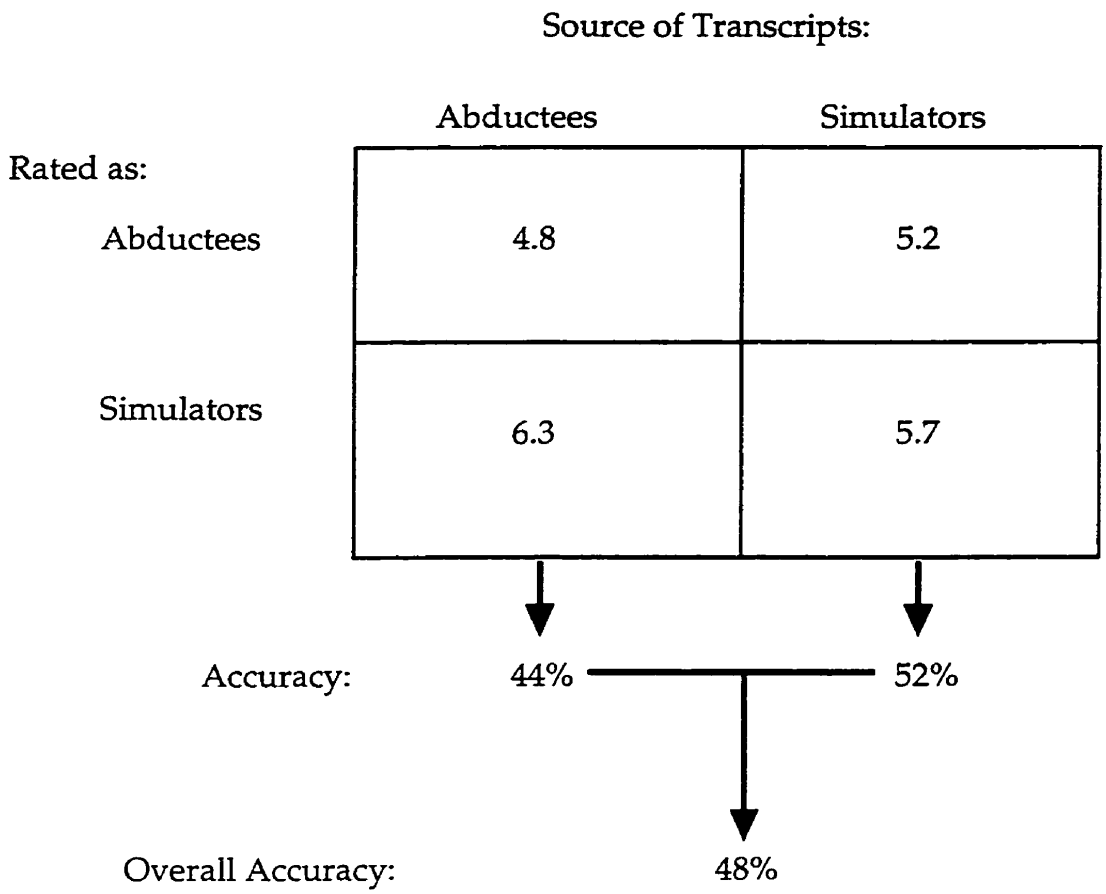

Figure 4. Mean rating accuracy for abductee and non-abductee narrative content

Insert Table 10a about here

Raters' performances were converted to Probability scores, then tested on the z distribution, as presented in Table 10a. When asked about their criteria for making their decisions, most raters made the degree of affective content of the narrative the tell-tale sign of a real abductee. This strategy did not assist them in more accurately identifying the real abductees. Both the most accurate and the least accurate raters used similar strategies to assist them in discerning real from simulating abductees. Interestingly, this is one of the more common clinical rules of thumb for determining whether client claims are based in reality. Raters' comments regarding decision strategies are cited in Appendix O.

Table 10a
Rater's Performances

Rater 1	p = .0044		
	Accurately Identified Abductees	82%	
	Accurately Identified Non-Abductees	82%	z = 2.62
Rater 2*	p = .5		
	Accurately Identified Abductees	55%	
	Accurately Identified Non-Abductees	45%	z = 0
Rater 3*	p = .9018		
	Accurately Identified Abductees	27%	
	Accurately Identified Non-Abductees	36%	z = -1.29
Rater 4	p = .6791		
	Accurately Identified Abductees	45%	
	Accurately Identified Non-Abductees	36%	z = -.47
Rater 5*	p = .6791		
	Accurately Identified Abductees	42%	
	Accurately Identified Non-Abductees	40%	z = -.47
Rater 6	p = .6886		
	Accurately Identified Abductees	18%	
	Accurately Identified Non-Abductees	64%	z = -.49

Discussion

The contents of the stories were indistinguishable between the abductee and non-abductee groups except in terms of the quantity the abductees produced. Having controlled for quantity by selecting excerpts, or fragments, raters could not distinguish between the two based on content alone, suggesting that there is sufficient information in today's popular culture, and in the imaginings of most people, to create compelling stories of UFO abductions when, in fact, no such event had taken place. Moreover, the view that abductees' narratives would contain some aspects of information not generally available to the public, or not portrayed completely or properly in the culture, seems unwarranted. Their stories seemed no more nor less believable than those produced by a group of simulating non-experts. Interestingly, using the degree of affective response in the narratives did not help the raters more accurately identify abductees from non-abductees.

The abductors and myth

The typical picture of UFO occupants is becoming more uniform, as the composite portrayal has become more and more entrenched in popular culture. This was not always the case. Monsters and angels embodying our primal hopes and fears, such as were seen in various cinematic offerings of the early 1950's, both contributed to and were influenced by reports of extraterrestrial contacts prior to the earliest abduction accounts. These creatures seemed to require a certain consistency in order to attain credibility, so certain features, such as the variants seen today, became standardized. Disproportionately large heads and prominent eyes were reported more and more frequently. Unfortunately, it will never be known whether these descriptions were modifications of Hollywood portrayals, or whether the reverse is true.

The problem facing the surface literalists (those who accept the alien hypothesis as reality) is not only how to explain the lack of evidence, but also how to explain the agenda of such creatures. As Brin (1994) puts it: "If aliens really are swooping down to twirl wheat, abduct folks, and stick needles in our brains, our natural question is why? Why high-IQ vandals instead of honest, open visitors?" Indeed, it has been argued that the procedures described by abductees: immobilization, medical experiments, and release with imperfectly wiped memories, and dermal scars, is remarkably clumsy and low-tech for beings capable of interstellar or transdimensional travel. And, if they prefer anonymity, why are they so utterly incapable of keeping their presence secret? UFOs, aliens, and abduction scenarios may be among the best known popular cultural stories in existence. Some would argue that it is their fear of us that prevents open contact, or that we are in no position to judge their motives or agendas since their standards will be different. The trouble is, we are in a perfect position to be judgmental; after all this *is* our planet. Why can't they devote some of their curiosity-fueled inquiries to such cultural aspects as diplomacy, or simply being good guests? The same question could be asked of elves, fairies and little demons of old legends, for none of them seemed to have good manners, or to like the light either (Brin, 1994).

These findings don't mean that all abduction accounts are easily explained as confabulations, nor do we suggest that the entire phenomena may be understood in this framework. These findings do point out the limitations of using Hypnosis to recover abduction accounts (Lawson, 1980), and using standard cognitive or clinically-informed heuristics to determine veracity of such claims.

General Discussion

The Possible Psychological Explanations

A variety of psychological explanations for reports of UFO abductions have been offered. From the unsupportive view that claimants are simply liars fabricating their experiences, to the popular theories of the '50's and 60's of some form of hysterical contagion or cold war stress outlet, to the more recent new age theories of channeling, or simply the strong will to believe in extraterrestrials, the surface-literalist theories have received only a lukewarm reception among the scientific community, and for good reason. All of the explanations to date, including the scientific, have had the difficulty of accounting for the outliers and exceptional cases in a phenomenon where the evidence varies considerably (if it exists at all).

As mentioned, sleep disturbance may be a very plausible reason for a number of abduction reports. Sleep disorders, parasomnias, and otherwise normal but relatively rare sleep phenomena may not successfully account for the small but significant proportion of abduction reports which do not take place either at night, nor when the abductees claim they were abducted while fully awake. However, the majority of abductions are reported to occur at, or around the time of sleep, making this the best possible candidate theory for much of this phenomenon. The fantasy prone personality may be a major factor in abduction reports, but one would expect more personalized, idiosyncratic content in such reports, (and less completely unpleasant detail) if this explanation were to be used exclusively. However, as mentioned, attempting to apply any given theory in isolation misses the complexity of this phenomenon, and the importance of belief systems and cultural influences in asserting their conforming effects.

Some of the more psychiatric explanations have suggested that abductees suffer from temporal lobe dysfunctions, or are prone to psychogenic fugue states. Some evidence exists to support these theories (Persinger, 1984). Lawson postulated that memories for abductions were actually masked memories based in the original birth experience, but such theories themselves begin to sound as bizarre as the abduction accounts and their extraterrestrial explanations. Moreover, theories of this ilk, whether plausible or not, do not advance our understanding of this phenomenon when they are untestable.

Part of the difficulty the UFO enthusiast community has had in accepting the various psychological explanations for abductions (aside from the threat posed to their belief system) has been that no one scientific explanation can adequately explain all reported cases of UFO abduction: there is always a percentage of cases which defy a given explanation. Moreover, with the extraterrestrial hypothesis in its various forms they feel that they have one all-encompassing theory which can account for the various cases reported, at least more than any single scientific theory can explain. Unfortunately, this logic is flawed in two ways First, the scientific community does not, as a whole, seek to explain things away. That is the domain of the debunker, in the pure sense of the word, which does not at all reflect the scientific agenda. Debunkers are believers of another strain, who are as invested in their beliefs that UFOs do NOT exist as the UFO enthusiasts are that they do exist. They tend to stretch truths and strain plausibility as much as the believers in their efforts to put the issue to rest *once and for all.* Secondly, the scientific approach is not constrained to finding a single answer, hypothesis or theory which will account for all reports of abduction. It may be that UFO abduction reports are the common final result of many possible causes. Sleep disorders, hysterical contagion, wishful thinking, cultural influence, fantasy proneness, neurological

anomalies, and strong beliefs in extraterrestrials may account for everything, in combination or separately.

Scientific exploration of this issue will illuminate how much, if any, of each of the hypotheses offered can account for the observed phenomenon, including the extraterrestrial hypothesis. The difficulty arises in considering what constitutes evidence, or how to evaluate a hypothesis in the absence of evidence that can be evaluated. The scientific community needs to continue developing adequate paradigms to investigate the experiences of individuals claiming to have been abducted. The temptation to indulge UFO enthusiasts in their challenge that no one terrestrial theory, psychological or other, can explain this phenomenon in its entirety is a trap in which many find themselves held. It may be characteristic of Humans to simplify things, but this tendency does not assist us in understanding phenomena which are complex (Ackerman, 1997). Plausibility must not be completely sacrificed for the sake of coverage or elegance. Parsimony, even in the face of multifactored, complex interactive phenomena, is still more desirable than belief-based explanations.

> We forget that the world is always more and stranger than we guess. Or can guess. Instead, we search for simple answers, simple laws of nature, in a sleight of mind that makes us uniquely Human. Just as we're addicted to rules, home-truths, and slogans, we're addicted to certain ways of explaining things. There's bound to be a simple answer to everything, we insist. Maybe not. Maybe complexity frightens us. Maybe we fear becoming as plural as all we survey. Maybe we still tacitly believe that the universe was created for our pleasure, that we pint-sized demigods are its sole audience and goal. (Ackerman, 1997, p. 11).

Given the unreliability of eyewitness testimony (e.g., Loftus and Palmer, 1974), and the increasingly unreliability of so-called repressed memories recovered under hypnotic states (e.g., Loftus, 1993; Gardner, 1993), there is less reason for constructing a hypothesis around the reality of such reported events as UFO abductions before investigating the possibilities which exist closer to home. This is not to say that the potential reality of extraterrestrial intelligence, nor abduction experiences, be rejected outright. It is simply more useful to proceed by investigating thoroughly in a realm that is more available to us than the reaches of outer space, and that realm is Human psychology.

It is to our advantage to search for explanations that are plausible, parsimonious and useful to our overall understanding of human psychology when investigating claims of UFO abduction before looking for explanations that cannot be validated in any way, or that require us to accept a fairly radically altered view of the universe. Such a shift in perspective may eventually be warranted, but in the meantime, the maxim that extraordinary claims require extraordinary support remains valid. The two polarized sides of the debate between UFO believers (surface literalists) and debunkers (depth literalists) seem to have downplayed the importance of the role of culture in these experiences (Zweig, 1992).

The role of science fiction and the media inundation of aliens as a part of pop culture should not be underestimated in providing content, uniformity, or structure to a large number of recent reports of UFO abduction. The issue of cultural specificity is likely to be mixed in with these explanations (i.e., why is this primarily a western cultural phenomenon?). UFO cultism is, itself, a prime example of magical thinking which has become a part of the mainstream through the rapid dissemination of information and pop culture in the

information age. Again, it is likely that sleep disorders, anomalous neurological events, and FPP account for a significant proportion of abduction reports. But the beliefs of otherwise average individuals, in combination with exposure to our various cultural media, may be sufficient to produce accounts of UFO abduction. Regardless of the view of who or what these nighttime visitors represent, the psychological, sociological, mythological, religious, and cultural explanations offer more fertile ground for understanding than that of the surface literalist who accepts them as enigmatic, but very real, visiting creatures.

The fact that little people and abduction-like experiences exist in folklore throughout history does not provide much of an explanation except to say that UFO occupants may be modern versions of the dwarves, elves, and goblins of yesteryear. Comparisons with folkloric creatures may also be taken as evidence that alien visitations have been occurring throughout history, and told by storytellers in the context of their time and place. Several questions remain to answered about our own sociological and psychological makeup: Why did we ever see them in the first place, why do we continue to see them now, given the relative sophistication of many claimants?

The collective unconscious, first explored by Jung (1959), has been implicated in the UFO phenomenon. The abduction reports may represent certain archetypal memories, the content of which are derived from certain symbolic representations of our desires and fears. It may be possible but, unfortunately, as a psychological explanation, this fares no better than the extraterrestrial hypothesis for abductions simply because it is equally untestable.

Acquiring memories for UFO abduction

Most areas of Human cultural and scientific history point to the incontrovertible fact that Human beings are adept at handling ambiguity.

Indeed this seems to be one of the key characteristics that continue to elude researchers in their quest to create thinking machines or artificial intelligence, in that they have difficulty understanding ambiguous input. We seem to excel at seeing patterns in chaos, or imposing order where none exists. We need look no further than the constellations overhead in the night sky, or the face of the man in the moon to illustrate this: we create patterns, connect the dots, and fill in missing bits of information as effortlessly as we see and hear. Indeed, a considerable part of very basic perceptual processes involves pattern extraction. It may be that, when faced with a few fragments of ambiguous information, such as the cause of a strange dream, unexplained bruises, etc. paired with the belief in UFO abductions, we engage in a similar form of pattern recognition, one in which patterns are extracted where none may actually exist.

Individuals with these symptoms or suspicions, accompanied by beliefs in extraterrestrials, may possibly already believe that they are the victims of UFO abduction. Any number of physical or psychological symptoms have been attributed to alien abductions (Spanos, 1996). However, despite their beliefs, abductees usually cannot 'remember' these episodes outright. Such individuals will normally seek assistance in these matters from members of the UFO enthusiast community, or self-proclaimed UFO investigators. Investigations usually initially consist of two phases. The first phase consists of interviews, during which the litany of symptoms is validated, legitimized, and linked to UFO abductions. Furthermore, these interviews also actively seek information from individuals regarding other symptoms they may not have understood as being part of the phenomenon, such as missing time, bizarre dreams, other physical symptoms (often cast as "body memories') also defined by the investigator liberally as distorted memories, or sequellae of UFO abduction. In a sense, these interviews bring individuals *up to speed* in the lore and culture of

the UFO abduction phenomenon. By probing in this manner, the investigator or therapist is assuring a certain level of indoctrination and expertise in the phenomenon, creating all the expectations which will be fulfilled during the subsequent phase of the investigation: hypnosis.

During the second phase, hypnosis, or some hypnosis-like procedure, such as guided imagery, etc. is used to facilitate remembering episodes of abduction. Having already created the expertise in these individuals, they are also prepared for frightening and frustrating sessions. Ambiguous and vague statements are shaped and interpreted according to the expectations established before beginning, and non-compliance by the individual is labeled as *blocking*, requiring continued, often exhausting, effort until the individual provides what is expected. In some cases, where regressive sessions are not successful spontaneously, the investigators instruct their charges explicitly to imagine themselves being abducted, and being taken into alien spacecraft (Kagan & Summer, 1983).

This formula is generally very successful at generating numerous, emotionally laden, coherent narratives of abductions (Spanos, 1996). It has become a lucrative industry for investigators and therapists alike. Indeed hypnosis is not required to obtain these results. The effectiveness of the priming interview, combined with a willing subject and some persistent prodding about memory blocks will eventually be effective in producing abduction narratives without regression hypnosis. However, hypnosis and its cousins seem to be rapid and effective means of obtaining satisfaction for customer and provider alike. The compelling and effortless nature of hypnotic experiences result in greater conviction that the experiences produced are indeed based in reality, making it a preferred mode for most UFO investigators. However, as has been shown, it is prone to the most dangerous kinds of misuse.

The UFO phenomenon is one of the most popular in North America today. No explanations satisfactorily explain all aspects of reports, and no clear cut answers are forthcoming. What is becoming clearer is that the very way we approach the issue must change. Neither debunkers nor believers are asking the right questions in their constant struggle to find that elusive explanatory edge. Until we learn to approach the problem differently, it will remain in a scientific limbo. Some have claimed that the very fact that we cannot resolve the question one way or another is giving the UFO issue the power to create its own reality, and to affect our cultural consciousness (Stacy, 1992).

Conclusions

The present studies of procedures related to the recovery of 'memories' of UFO abduction should call into question the rampant, unwavering acceptance of these reports. UFO abductions exhibit many similarities in both content and process to other memory distortion phenomena. Hypnosis, commonly used as the tool of the trade in recovering memories of UFO abductions, contributes to the memory distortion process. These findings are not intended to suggest that all abduction accounts are easily explained as confabulations, nor do we suggest that the entire phenomena may be understood in this framework. These findings do point out the limitations of using hypnosis to recover abduction accounts. Hypnosis does not contribute new or unique information toward a greater understanding of this phenomenon. It does produce a reliable amount of error and confabulation. This should serve as a clear signal to anyone interested in shedding light on this mystery that they do a disservice to any investigation into phenomena of this nature if they use hypnosis in the way it is typically used at present. Hypnosis is a powerful therapeutic tool, and an

effective adjunct to many clinical interventions. Its use as a memory enhancement technique should be avoided.

> As children tremble and fear everything in the blind darkness, so we in the light sometimes fear what is no more to be feared than the things children in the dark hold in terror....
>
> Lucretius,
> *On the Nature of Things*
> ca. 60 BC

> From ghoulies and ghosties and long-legged beasties, and things that go bump in the night, may the Lord preserve us...
>
> Scottish anonymous.

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Appendix A

Participant Recruitment Advertisement

UFO Abduction Study

Do you feel that you may have been abducted by aliens, but have little memory of the events? Interested in learning more about such possibilities, using hypnosis? Researchers from Concordia University are studying the role of hypnosis in reports of UFO abduction experiences. Volunteer participants, willing to spend four 90 minute sessions exploring such issues (participants will be interviewed, and be hypnotized in three separate sessions), are requested to send their name, and telephone # by mail to Duncan at P.O. Box 36077, Halifax, NS, B3J 3S9. This research is being conducted through the Department of Psychology at Concordia University, Montreal.

Appendix B

Informed Consent Form

Our studies are concerned with understanding more about the role of hypnosis in memory, and related phenomenon. The current experiment involves four ninety minute-long sessions. The first session will involve an interview, a simple memory test, and the distribution of questionnaires. The second session will involve testing on a combination of hypnotic test items (e.g., Hand-Lowering will be tested by holding one's arm out and seeing if it will move downward with a suggestion of heaviness), a brief exploration of the event specified by the volunteer, and answering questions in a brief post-hypnotic interview, concerning experiences during hypnosis. The third and fourth sessions will consist of further hypnotic explorations of any putative abduction phenomena. The success of our research depends very much upon the participation of volunteers like yourself and we are very grateful for your participation.

In all aspects of this research, the identity of participants will remain confidential. Interviews will be audio taped, hypnosis sessions will be videotaped in order to ensure consistency, and accuracy of scoring. The contents of interviews, discussions, questionnaire documents, or recordings of any of the above are confidential, and will be used for the purposes of research only. Only the direct research associates of Dr. Laurence will be permitted access to any material obtained through volunteer participation. The data obtained from this study may be published.

If you have any questions about the nature of this research, or your commitment, please ask. If questions arise at a later date, you may ask Dr. J.-R. Laurence, or myself (at Concordia University Hypnosis Laboratory, Room 531/81, at 1455 de Maisonneuve W., Montreal, Quebec / Tel: 848-2213 or 848-7555). You are free to withdraw from the experiment at any time. If you

decide to participate, you will be provided a copy of this form to keep for your records.

You are making a decision whether or not to participate in about hypnosis and memory. Your signature below indicates that you have read the information provided above and have decided to participate. You may withdraw at any time after signing this form if you wish to discontinue participating in this study.

_____

Print name

_____

Signature

_____

Date

Informed Consent Form

Our studies are concerned with understanding more about the role of hypnosis in memory. The current experiment involves four ninety minute-long sessions. The first session will involve an interview, a simple memory test, and several questionnaires. The second session will involve testing on a combination of hypnotic test items (e.g., Hand-Lowering will be tested by holding one's arm out and seeing if it will move downward with a suggestion of heaviness), and answering questions in a brief interview, about your experiences during hypnosis. The third and fourth sessions will consist of further hypnotic explorations of any abduction phenomena, or related episodes identified by you. The success of our research depends very much upon the participation of volunteers like yourself and we are very grateful for your participation.

In all aspects of this research, the identity of participants will remain confidential. Interviews and hypnosis sessions will be audiotaped in order to ensure consistency, and accuracy of scoring. The contents of interviews, discussions, questionnaire documents, or recordings of any of the above are confidential, and will be used for the purposes of research only. Only the direct research associates of Dr. Laurence will be permitted access to any material obtained through volunteer participation. All recordings made will be erased after transcription, or two months after your participation is concluded, whichever comes first. The data obtained from this study may be published, but will not refer to the identities of participants.

If you have any questions about the nature of this research, or your commitment, please ask. If questions arise at a later date, you may ask Duncan Day, (902) 429-0868, Dr. Sherry Stewart, (902) 494-3793, or Dr. J.-R. Laurence, at Concordia University Hypnosis Laboratory, Room 531/81, at 1455 de Maisonneuve W., Montreal, Quebec / Tel: (514) 848-2213. You are free to withdraw from the experiment at any time. If you decide to participate, you will be provided a copy of this form to keep for your records.

You are making a decision whether or not to participate in a study about hypnosis and memory. Your signature below indicates that you have read the information provided above and have decided to participate. You may withdraw at any time after signing this form if you wish to discontinue participating in this study.

_____

Print name

_____

Signature

_____

Date

Appendix C

Recording Consent

Our studies are concerned with understanding more about the nature of the psychological components of UFO abduction phenomena, the role of hypnosis in memory, and related phenomenon. The success of our research depends very much upon the participation of volunteers like yourself and we are very grateful for your participation.

In all aspects of this research, the identity of participants will remain confidential. Interviews and hypnotic sessions may be audio taped, videotaped, or both. The contents of interviews, discussions, questionnaire documents, or recordings of any of the above will be used for the purposes of research only. There may be an occasion to use recordings of hypnotic sessions for the purposes of instruction at a university setting, or for conference presentation. Signing this form constitutes permission to use said materials for these instructional purposes. Only the direct research associates of Dr. Laurence will be permitted access to any material obtained through volunteer participation.

If you have any questions about the nature of this research, or your commitment, please ask. If questions arise at a later date, you may ask Dr. J.-R. Laurence, or myself (at Concordia University Hypnosis Laboratory room 531/81, at 1455 de Maisonneuve W., Montreal, Quebec / Tel: 848-2213 or 848-7555).

If you decide to participate, you will be provided a copy of this form to keep for your records.

You are making a decision whether or not to permit the use of audio or video recordings made during your volunteer participation for instructional purposes within the confines of Concordia University. Your signature below indicates that you have read the information provided above and have decided to participate. You may withdraw your permission at any time after signing this form if you wish by notifying us.

_____

Print name

_____

Signature

_____

Date

Appendix D

Semi-Structured Interview

1) Initiation and Introduction:
    - Introduce self, help them to feel comfortable
    - Outline initial goals, approximately how the interview should proceed, and the expected duration of the session
    - remind them of recording devices, confidentiality, and consent form

    - listen for areas of clinical interest, such as:
        - cognitive disorder (difficulty thinking or organizing thought)
        - substance abuse
        - psychosis
        - mood disorders (mania/depression)
        - anxiety, level of arousal, avoidant behaviours
        - body language/posture
        - physical complaints
        - social or personality disorders

2) Beliefs:
    - what brought them today?
        - interest....and belief level in UFO's

3) Personal and Family/Social History:
    - childhood and growing up
        - where and when born
        - # of siblings/ position in birth order
        - reared by...?
        - parental situation (together, separated, strained, happy?)
        - were their needs met as a child/ felt wanted?
        - were they ever abused
        - health as a child
            - diabetic
            - asthmatic
            - epileptic
            - allergic
        - education
            - last grade completed
            - feelings about education; scholastic problems/strengths
            - active/passive
        - sociable as a child?
        - internal life/ level of imaginary activity/ fantasy

- hobbies and interests
- adolescence
  - age of first sexual activity/ sexual development/dating
  - reactions to sexuality
  - history of sexual abuse/rape
- adult life
  - current situation
    - how do they sleep?
    - appetite, weight?
    - living with anyone?
    - where, how long?
    - finances
    - homeless ever?
    - support network (family, friends)
  - marital
    - sexual activity level/pleasures/problems
    - # of marriages / problems with spouses?
    - ages at each
    - children, ages, genders, stepchildren
  - employment history
    - current job
    - # of previous jobs
    - reasons for changes (if fired, why?)
  - more recent medical history (injuries, diseases, etc.)
  - legal problems ever?
  - leisure activities, clubs, organizations
***- belief system ***
    - religion? (same as one raised in?)
    - how devout?
    - other fantastical beliefs
  - substance use and abuse
    - type, onset, frequency, quantity
    - consequences
- family/ nature of relationships with them
  - history of medical problems
  - mental disorders
- previous hypnosis
  - hypnotized before? when, where, by whom, results, etc.
  - effects and side effects

Appendix E

Paranormal Experiences Questionnaire

Nadon, Register, & Kihlstrom Scale

The following questions are about various experiences you may have had as a child and/or as an adult. Do not include any experiences you may have had while under the influence of alcohol or drugs. Please circle your answer for both parts of each question.

Name:_____

(1)	Have you ever had, while awake, a strong feeling, impression, or vision, that a previously unexpected event had happened, was happening, or was going to happen?	as a child	Y	N
		as an adult	Y	N
(2)	Have you ever felt that a dream. "vision', or definite feeling provided you with information about an event or another person which you could not have gotten in any "normal" or conventional way?	as a child	Y	N
		as an adult	Y	N
(3)	Have you seen, or though you saw, an object move with no "natural' or physical means of motion that you could discover?	as a child	Y	N
		as an adult	Y	N
(4)	Have you ever had an experience in which you felt that "you" were located "outside of' or "away from" your physical body, i.e., the feeling that your consciousness, mind, or center of awareness was at a different place than your physical body?	as a child	Y	N
		as an adult	Y	N

(5)	Have you ever had, while awake, a vivid impression of seeing, hearing, or being touched by another being whose impression, as far as you could discover, was not due to any physical or "natural" cause (exclude religious experiences)?	as a child as an adult	Y N Y N
(6)	Have you ever felt that you were in communication with someone who had died?	as a child as an adult	Y N Y N
(7)	Have you ever felt that you were being controlled or were possessed by a spirit?	as a child as an adult	Y N Y N
(8)	Have you ever lived in a house that you felt was haunted?	as a child as an adult	Y N Y N
(9)	Have you ever had what felt to be a memory of a previous lifetime?	as a child as an adult	Y N Y N
(10)	Have you ever had the strong feeling or impression that you had been someplace or in the same situation before, even though you had never actually been there before or were experiencing the event for the first time in "real life"?	as a child as an adult	Y N Y N
(11)	Have you ever seen light or lights around or about a person's head, shoulders, hands, or body which as far as you could tell, were not due to "normal" or "natural" causes?	as a child as an adult	Y N Y N
(12)	Have you ever felt that you were able to receive thoughts through telepathy?	as a child as an adult	Y N Y N
(13)	Have you ever felt that you were able to transmit thoughts through telepathy?	as a child as an adult	Y N Y N
(14)	Have you ever felt that you were able to receive	as a child	Y N

	information though a "sixth sense"?	as an adult	Y N
(15)	Have you ever felt that your body was emitting light or energy?	as a child as an adult	Y N Y N
(16)	Have you ever felt that some inanimate objects have consciousness?	as a child as an adult	Y N Y N
(17)	Have you ever experienced God in a profound or mystical way?	as a child as an adult	Y N Y N
(18)	Have you ever felt that God was communicating with you directly?	as a child as an adult	Y N Y N
(19)	Have you ever felt that a particular occurrence or feeling was a sign or an omen of the future?	as a child as an adult	Y N Y N
(20)	Have you ever felt that all events are interdependent and that nothing that happens, has happened, or will happen is purely accidental?	as a child as an adult	Y N Y N
(21)	Have you ever felt that you were able to directly others through your thoughts?	as a child as an adult	Y N Y N
(22)	Have you ever felt that you were being influenced directly by someone else's thoughts?	as a child as an adult	Y N Y N
(23)	Have you ever felt that you were able to make something happen solely because you willed it?	as a child as an adult	Y N Y N

Appendix F

Unusual Personal Experiences Scale (Modified)
Hopkins, Jacobs, & Westrum (1992)

Answer "yes" or "no" (circle one) to the following descriptions of experiences if you believe that you have ever been through such experiences, or if you agree or disagree with the statements made.

1)	Waking up paralyzed with a sense of a strange person or presence or something else in the room.	Yes	No
2)	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.	Yes	No
3)	Feeling that you were actually flying through the air although you don't know why or how.	Yes	No
4)	Seeing unusual lights or balls of light in a room without knowing what was causing them.	Yes	No
5)	Finding puzzling scars on your body, and neither you nor anyone else remembering how you received them or where you got them.	Yes	No
6)	Feeling as if you left your body.	Yes	No
7)	Having seen, either as a child or as an adult, a terrifying figure - which might have been a monster, a witch, a devil, or some other evil figure in your bedroom, closet or somewhere else.	Yes	No
8)	Seeing a ghost.	Yes	No
9)	Seeing a UFO.	Yes	No
10)	Having vivid dreams about UFOs.	Yes	No
11)	Having a sudden feeling that something bad was happening someone you know, and later finding out that you were correct.	Yes	No

12) Seeing a halo, or ring of light around another person which other people couldn't see.	Yes	No
13) Being visited by a deceased relative or friend who spoke to you by name.	Yes	No
14) High government officials were involved in the Kennedy assassination.	Yes	No
15) The AIDS virus was created deliberately as part of a conspiracy against certain groups in our society.	Yes	No
16) The Air Force is hiding evidence that the United States has been visited by flying saucers.	Yes	No
17) I believe in Astrology.	Yes	No
18) I can usually trust my neighbors.	Yes	No
19) I can usually trust my relatives.	Yes	No
20) When I was growing up, I could usually trust my parents.	Yes	No
21) I often wake up in the middle of the night worrying about things.	Yes	No
22) I sometimes feel that people are conspiring against me.	Yes	No
23) I sometimes find it difficult to deal with all the stress in my life.	Yes	No
24) I enjoy reading books about UFOs and other strange phenomena.	Yes	No
	____	____
Total	Yes	No

Appendix G

Attitudes Towards Hypnosis Questionnaire

Please answer each of the following statements by circling he number on the scale which best describes you.

1. I find the whole idea of becoming hypnotized an attractive prospect.

1	2	3	4	5	6	7
(not at all true)						(very true)

2. I would like to become deeply hypnotized.

1	2	3	4	5	6	7
(not at all true)						(very true)

3. I would not mind being known as someone who can be deeply hypnotized.

1	2	3	4	5	6	7
(not at all true)						(very true)

4. I am totally open to being hypnotized.

1	2	3	4	5	6	7
(not at all true)						(very true)

5. One's ability to be hypnotized is a sign of their creativity and inner strength.

1	2	3	4	5	6	7
(not at all true)						(very true)

6. I wonder about the mental stability of those who become deeply hypnotized.

1	2	3	4	5	6	7
(not at all true)						(very true)

7. Those who are easily hypnotized are weak people.

1	2	3	4	5	6	7
(not at all true)						(very true)

8. Those who can become deeply hypnotized are as normal and well adjusted as anyone.

1	2	3	4	5	6	7
(not at all true)						(very true)

9. Intelligent people are the least likely to get hypnotized.

1	2	3	4	5	6	7
(not at all true)						(very true)

10. I have some apprehensions about hypnosis and being hypnotized.

1	2	3	4	5	6	7
(not at all true)						(very true)

11. If someone attempted to hypnotize me, I would tend to hold myself back, rather than let myself get carried away by the process.

1	2	3	4	5	6	7
(not at all true)						(very true)

12. I'm not afraid of becoming hypnotized.

1	2	3	4	5	6	7
(not at all true)						(very true)

13. I am wary about becoming hypnotized because it means giving up my free will to the hypnotist.

1	2	3	4	5	6	7
(not at all true)						(very true)

14. A deeply hypnotized person is robot-like and goes along automatically with whatever the hypnotist suggests..

1	2	3	4	5	6	7
(not at all true)						(very true)

Appendix H

Individual Differences Questionnaire (From Paivio, 1971)

Name: _____

Date: _____

The statements on the following pages represent ways of thinking, studying, and problem solving. No two statements are exactly alike, so consider each statement carefully before answering. You are asked to rate each item on a 5-point scale which relates to how characteristic the statement is of you. Circling a rating of -2 indicates that the statement is extremely uncharacteristic of you, a rating of +2 indicates that the statement is extremely characteristic of you, a rating of 0 indicates that the statement is neither characteristic, nor uncharacteristic of you.

It is important that you answer as frankly and honestly as you can. Your answers will be kept in the strictest confidence.

	-2	-1	0	+1	+2	
Extremely Uncharacteristic						Extremely Characteristic

1.	Listening to someone recount their experiences does not usually arouse mental pictures of the incidents being described.	-2	-1	0	+1	+2
2.	By using mental pictures of the elements of a problem, I am often able to arrive at a solution.	-2	-1	0	+1	+2
3.	I enjoy visual arts, such as paintings, more than reading.	-2	-1	0	+1	+2
4.	My daydreams are so vivid I feel as though I actually experience the scene.	-2	-1	0	+1	+2
5.	I do not have a vivid imagination.	-2	-1	0	+1	+2
6.	I can easily picture moving objects in my mind.	-2	-1	0	+1	+2

Individual Differences Questionnaire (From Paivio, 1971)

Name: _____

Date: _____

7.	I can form mental pictures to almost any word.	-2	-1	0	+1	+2
8.	I have only vague visual impressions of scenes I have experienced.	-2	-1	0	+1	+2
9.	I think hat most people think in terms of mental pictures whether they are completely aware of it or not.	-2	-1	0	+1	+2
10.	My powers of imagination are higher than average.	-2	-1	0	+1	+2
11.	I can close my eyes and easily picture a scene I have experienced.	-2	-1	0	+1	+2
12.	When someone describes something that happens to them I find myself vividly imagining the events that happened.	-2	-1	0	+1	+2
13.	I seldom dream.	-2	-1	0	+1	+2
14.	I never use mental pictures or images when trying to solve problems.	-2	-1	0	+1	+2
15.	I find it difficult to form a mental picture of anything.	-2	-1	0	+1	+2
16.	My dreams are extremely vivid.	-2	-1	0	+1	+2
17.	My thinking often consists of mental pictures or images.	-2	-1	0	+1	+2
18.	My daydreams are rather indistinct and hazy.	-2	-1	0	+1	+2
19.	I enjoy the use of mental pictures to reminisce.	-2	-1	0	+1	+2
20.	I often use mental images or pictures to help me remember things.	-2	-1	0	+1	+2
21.	I do not form a mental picture of people or places while reading of them.	-2	-1	0	+1	+2

Appendix I

Debriefing

You have been participating in a study which examines the effects of individual belief systems and indirect suggestions on the content of autobiographical memories recalled during hypnosis. You were initially interviewed in order to get a sense of your pre-existing set of beliefs about certain phenomena which seem to continue to defy empirical or reproducible verification (i.e., UFO phenomena). You were then given an hypnosis ability measure while being hypnotized during the first hypnosis session. The following sessions examined how information supplied by the experimenter prior to being hypnotized may have influenced the nature and content of the things you reported to have experienced during hypnosis.

The purpose of this study is not to debunk beliefs that you may or may not have about extraterrestrial life, nor to diminish the value you may place in such beliefs, but merely to better understand how these beliefs, when combined with suggestions may effect the content of abduction reports obtained during hypnosis. **This research does not, in any way, seek to prove or disprove the actual existence of UFO's, aliens, or alien abductions.**

If you would like to discuss any concerns with the research team about the study, either now or later, your feedback or questions are welcome. If you wish you may contact the experimenter later to discuss the goals of the experiment further. Approximately one month from now, the experimenter will be contacting you by telephone as a follow-up to this experiment.

All recordings made of your participation in this study are confidential. Audio or visual recordings, and results of any questionnaires will be used for the purposes of research only. Access to these materials is restricted to those individuals who are involved in this research.

These studies will potentially benefit professionals in the clinical and forensic communities, particularly in such situations where hypnosis is used for the purposes of enhancing recall. This work will provide further evidence for the potential influence of internal factors, such as belief systems, and external factors, such as context and/or subtle suggestions, in the memory of autobiographical events recalled during hypnosis.

If you have any questions that you wish to address now, or later, please feel free to contact either Duncan Day, M.Sc., or Dr. Jean-Roch Laurence, at 848-2213, or 848-7555, or write to: The Concordia University Hypnosis Laboratory, Concordia University, Department of Psychology, H-663, 1455 boul. de Maisonneuve West, Montréal, Québec, H3G 1M8. We thank you again for you participation, your assistance has been invaluable.

Appendix J

Scoring Protocol for UFO Abductee Hypnotic Narratives

The purpose is to identify and categorize as many different types of information as possible. In hypnotic narratives such as these, dealing with subject material that is often fantastic, it is important to be as inclusive as possible. For the purposes of this study, the main thematic categories for UFO abductions are: Medical-type Examinations, and Communication. Other categories include Emotional Reactions, Sensations, Beings, Locations, Technology (including vehicles), and a special category to include descriptions of non-physical aspects, such as Lighting, Point of View, and Actions.

Any repeated phrases, or phrase fragments are marked with an "R" enclosed in a small circle above the appropriate word(s), so as not to be scored a second time. This code applies to repeats in any category.

Similarly, uncertainty when describing things, such as long pauses (marked in the transcripts as a pause, and not simply as dotted lines), or words such as "I'm not sure but", or I don't know, but", will be coded with a simple black underline (pencil or black pen will suffice)

Medical Examinations:

To be underlined in Red. References to medical type examinations or any quasi medical procedures include any form of procedure that was for the purpose of collecting samples, or learning more about Human biology. The things to be scored will include the following characteristics:

Paralysis/Immobilization

Supine position (Lying on a Table)

Presence of Instruments/Equipment for Examining

Probing, Inserting things, Poking, or Touching by any Beings

Surgery, Removing Tissue or Implanting objects

The quality of these experiences will vary, and may include simple cursory examinations (such as touching and/or studying closely), to more invasive procedures (such as inserting probes, or even urogenital examinations).

If the medical procedures are not seen, but are sensed, then underline with a dotted red line rather than solid. For example, in "I felt like they'd done something to me, like studied me" you would underline the word "studied" with a broken red line.

Physical sensations associated with medical procedures are coded with a red circle. For example, in "I was lying on a table and I couldn't move. It was cold but I wasn't afraid", the word and "cold" would be circled in red. In another example, in the phrase, They placed something on my belly, and it hurt" the word "hurt" would be circled in red.

Emotional reactions to Medical Procedures are coded with a double underline in red. This code includes impressions, which are more interpretive than straightforward emotions, but which are emotionally laden nonetheless. In the previous example, the words "wasn't afraid" would be doubly underlined. Similarly, in the phrase, "I felt like I was going to die", the words "like I was going to die" are also doubly underlined

Any descriptive reference to the location of the medical examination are placed in red parentheses. This code refers to the setting where the procedure takes place. For example, in the phrase "They took me into a room...it looked

like a big bathroom", the words "room....it looked like a big bathroom" would be enclosed in red parentheses.

Any descriptions of the Medical instruments, or Technology are given red square brackets. This code refers to descriptions of any of the props involved in any of the procedures. For example, in the phrase, "There was this little metal hat on my head, and...many instruments attached to my body", the words "little metal hat" and "many instruments" are enclosed by red square brackets.

Qualifiers of any above descriptions, such as when a described item is elaborated upon, using analogy, or metaphor, then the words are not coded, but are marked with a Q in a small circle above the appropriate word(s).

Communications that take place between the subject and any other beings, which relate to the medical procedures are also underlined in red, but are also enclosed in blue quotation marks. For example, in the phrase, "They told me they were going to examine me for reproductive reasons", the entire phrase would be underlined in red, and the words "they were going to.....reasons" would be enclosed in blue quotation marks.

Beings, Entities, or People:

Descriptions of any beings involved in these procedures are colored in Green. This code refers to other actors present in the narrative, whether they are Human or not. Mentioning beings or creatures or people that were seen are underlined in Green. For example, in the phrase, "Three little men, were walking toward me" the entire phrase would be underlined in green. Descriptions of these beings, whether physical or not, are enclosed by Green parentheses. For example, in the phrase, "They had big heads, and there eyes were like...a cat's, only bigger", the words "big heads" and "eye's like a cat's only bigger" would each be enclosed a set of Green parentheses. Often, descriptions include more and more detail. If a given feature is being elaborated, as in the use of an analogy or metaphor, then this is coded as a qualifier, and marked with a Q. If it is a new feature (ANY new feature) then it is given it's own set of parentheses. For example, in the phrase, "his hands were long and very thin, and his fingers were incredibly long", both the fragments "hands were very long and very thin" and "fingers were incredibly long" would be enclosed in their own set of parentheses.

Any sensed presence, lacking directly observed descriptions are underlined with a broken green line. This refers to the impression that someone is there, without being able to clearly see or describe them. For example, the phrase, "I could tell that there were a few of them around me, but it was too hazy to see" would be underlined with a green dashed line.

Sensations about any beings (not including vision) are circled in green. These include sensations such as the temperature of the beings, odors, tactile textures, or sounds (other than communication) they make. For example, in the phrase, "Their skin felt cool, like leather", the words "skin felt cool, like leather" would be circled in Green.

Emotional reactions to any beings are underlined twice in green. For example, "They were so ugly, ...they terrified me" the word "terrified" would be doubly underlined.

Communications:

All references to Communications in the hypnotic narratives are coded in Blue. Communications include any form of information exchange (whether successful or not).

Descriptions of the mode of communication, or speculations about how communication occurred are enclosed in blue parentheses. For example, the phrase, "They were talking to me in some language I don't understand, but somehow I just understood" would be enclosed in Blue parentheses. Similarly, if the communication takes place in a specific location, this also is placed in blue parentheses.

If the communication is verbal, then it is enclosed in Blue quotation marks. This code is for simple accounts of what was said. For example, in the phrase, "They say they're taking tissue sample because they want to study Human Beings, our DNA and all that...", the words "they're taking tissue samples to study Human beings, our DNA, and all that" would be enclosed in Blue quotation marks.

If the communication is visual (pictorial, or imagery), then the words are underlined with a broken (dotted) blue line. For example, in the phrase, "Then I see images...of the Galaxy, I guess", the words "see images...of the Galaxy" would be underlined with a single blue dotted line.

If the communication is nonverbal (telepathy), then it is underlined once in Blue. Telepathy includes hearing "dialogue" but without hearing any actual words, or seeing any mouth movements. It also includes sensing new

information, or feeling that one simply, inexplicably understands without knowing how, as in "Just knowing..." something that they didn't previously "just know".

If the communication is nonverbal-gestural, then the words are enclosed in square blue brackets. This code refers to phrases in which body language is interpreted. For example, the phrase, "He waved me over to the ship...for me to follow him, and I did" would be enclosed in Blue square brackets.

Emotional reactions to any communications are underlined with two blue lines. For example, in the phrase, "I was terrified but then they told me they wouldn't hurt me, and suddenly I was calm" the words "suddenly I was calm" would be underlined in Blue twice.

Sensations associated with communication (other than emotional) are circled in blue. For example, in the phrase, "Their messages sounded like a thousand people screaming into my head, it hurt so much", the first part of that phrase would be enclosed in blue parentheses, and the words "hurt so much" would be circled in blue.

Special Communication: Teaching

Specific communications, like teaching, for the purpose of informing the Subject about something (rather than simply calming them, or clarifying) use the same code lines as above, but with the addition of a purple line. This code is to be used when the other entities seem intent on giving the Subject some kind of information (i.e., the purpose of the abduction is not for medical experiments, but to tell the Subject something important, or meaningful). For example, the phrase, "They want to reproduce us out of scientific curiosity", would be underlined once in Blue (as it is a form of nonverbal communication), and again in Purple. Although this phrase pertains to

medical experiments, it is information being offered about the motivation/purpose of the beings, without actually subjecting the individual to an examination. Also, references to individuals who are captured and then shown things during their capture will also be included as teachings.

Other:

Emotional reactions, Sensations, and other descriptions not related to either Medical procedures, nor Aliens, nor Communication are coded in Yellow.

Double Yellow underlining denotes words related to general emotional reactions or states. For example, in the phrase, "I was walked in, and I didn't feel nervous" the words "didn't feel nervous" would be underlined twice in Yellow. This code also applies to impressions or interpretations of events that are emotionally laden.

Sensations, or other sensory impressions (which are not visual) are circled in Yellow, if they do not relate to either of the above. Being cold, warm, comfortable, hearing sounds made by saucers, smelling odors, etc. are all coded by being encircled in Yellow.

Descriptions of Ships, or other aspects of Technology not outwardly related to either Medical examination, nor to communication, and enclosed in Yellow square brackets. For example, in the phrase, "Then the light rushed toward me and it's a big saucer, with lights all around it", the words "it's a big saucer, with lights all around it" would be enclosed in Yellow brackets.

Descriptions of lighting, and time references, are given Yellow parentheses. For example, in the phrase, "It shone this incredibly bright light on me from above" the words "incredibly bright light" would be enclosed in Yellow parentheses.

Transitions from the ground to a ship, or back, are coded with a Lellow broken (dashed) line. For example, the phrase "I don't know how, but suddenly I was inside the ship" would be underlined in a dotted Yellow line.

References to changes in point of view, shifts in perspective and out-of-body experiences are enclosed in Yellow boxes. For example, the phrase, "I was still standing there, but I was also levitated, rising up somehow" would be enclosed in a Yellow box.

Actions

Actions are coded with Brown underlining. For example actions, or physical movement, such as walking, climbing, floating, driving, running, etc. are underlined once in Brown.

Appendix K

Modified Stanford Dream Item

6. Dream

We have been going through some suggestions, since you started being so deeply relaxed, in order to learn more about how you respond to the experience of hypnosis. It helps me also to learn more about the process of hypnosis in general. One of the things I am interested in is learning how people can use hypnosis to create unusual experiences. As I mentioned, before we began, I am very much interested in finding out what it might mean to people to be abducted by extraterrestrials or UFOs. One of the best ways of finding out is through the dreams that people have about UFO abductions while they are hypnotized. Some people dream directly about this kind of experience, as if they were being abducted themselves. Some aspects of these dreams may be pleasant, and some may be not-so-pleasant, but they are always interesting. Other people may have more symbolic dreams that may not outwardly relate to anything resembling a UFO abduction. I'm going to ask you to dream or fantasize about just such an experience. Now, neither you nor I know what sort of dream you're going to have, but I'm going to ask you to rest comfortably for a while, and imagine yourself alone on a beach in the evening, or maybe driving in your car on a road at night. You're just enjoying the solitude of whatever you see yourself doing, when you see something appear in the sky off to the side. The object is nothing like any kind of aircraft you've seen before, and it seems to be approaching. Now rest for a little while and you are going to have a dream about an encounter with extraterrestrials ....a real dream.....just the kind you have when you are asleep at night. When I stop talking to you in a moment,

you will begin to dream. You will have a dream about an encounter with beings you've never seen before. You may find the dream to be vivid and real, as if you were really there while this encounter takes place. Now you are falling asleep.....deeper and deeper asleep.....very much like when you sleep at night.....soon you will be deeply asleep, soundly asleep. As soon as I stop talking you will begin to dream. When I start talking to you again, you will stop dreaming if you still happen to be dreaming, and you will listen to me just as you've been doing so well. If you stop dreaming before I speak to you again, you will remain pleasantly and deeply relaxed.....now let yourself fall deeply asleep.....sleep and dream....

(Pause for 2 Minutes)

The dream is over now; if you had a dream, you can remember every detail of it clearly. Did you have a dream? (IF YES) The dream is over, and you can remember every detail of it clearly.

(IF YES OR NO, CONTINUE...)

You do not feel particularly sleepy or different from the way you felt before I asked you to fall asleep and to dream, unless maybe you feel better rested, and you continue to remain deeply hypnotized. Whatever you dreamed, you can remember quite clearly, and I'd like you to describe it to me from the beginning in as much detail as you can. Now, tell me about your dream, right from the beginning....

(If Subject had NO Dream)

That's all right.....not everyone dreams in hypnosis.

(If he/she hesitates, or reports vaguely, probe for details)

(If Subject DID Dream)

That's all for the dream now. For the time being we'll just leave behind anything to do with aliens or UFOs.

(Continue on to item 7 "Continue to go deeper and deeper in hypnosis.....").

Appendix L

Pre-Stanford Protocol For Experiment 2: Group A

Introduce yourself

Remind Ss of the agreement in the consent form.

Explain the Stanford procedure (i.e., it's similar to the Harvard). It begins with a lengthy relaxation induction, followed by suggestions that will assess their hypnotizability.

There are a few important differences from the Harvard:

1) The hypnosis will be conducted by me (an individual) so the procedure will be a little more interactive.

2) Most suggestions are similar, but some are different, such as:

Age-Regression. During which you are asked to return to a time when you were much younger, and see if there are things you can remember that were previously forgotten.

Dream, which you are also asked to talk about during hypnosis.

Suggestion Condition 'A' (Groups 'B' and 'C' follow identical procedures except for this section)

"Researchers and Clinicians have been using Hypnosis in order to aid recall of past events for several decades. It is believed that through hypnosis, individuals may be able to recall more details of some events than during the normal conscious state. For individuals who claim to have been abducted by extraterrestrials, hypnosis has revealed an interesting pattern of recollections. Most individuals reporting such events claim to have undergone some kind of quasi-medical examination while they were held by aliens. These experiences typically include being restrained and probed by alien objects resembling medical instruments, sometimes even feeling tissue being removed or objects

implanted. A much smaller minority of reports described memories of being shown images in some kind of viewing room. These images are sometimes mental pictures, and sometimes auditory "voices" apparently for the purpose of conveying some kind of message or information.

I will be asking you to have a dream or to fantasize about UFOs and alien encounters, as if you were one of these abductees. We'll start the dream out with you being alone somewhere comfortable, but relatively secluded, then I'll just ask you to dream or to fantasize about an alien abduction. After you've had some time to have a Hypnotic dream, I'll ask you to tell me about everything you can remember from this alien abduction dream. If at any time you feel that the dream is too unpleasant, or you feel uncomfortable, simply let me know, and I'll remind you of where you are, and ask you what you'd like to do."

The hypnotic session will be taped for two reasons:

1) so that I can watch myself, and make sure my style is consistent.

2) for accurate scoring of the test items, and to be sure I get all the information correct about the reported dream. At the time of testing, I'll be concentrating on too many things at once to be sure of my accuracy. Remember that these tapes are confidential, numbered, and for the purposes of this research only....just me viewing them.

Are there any questions?

Have they been tested on the Harvard group scales? If not, schedule them for a session. If so, find out their impressions and subjective experience of their first experience with hypnosis.

Try to find out more about what they may expect from this session. This gives them a chance to voice any misgivings or fears about the procedure. It gives you, the experimenter, the chance to allay any fears, and to help them become more relaxed and at ease with the hypnotic context.

If they are still nervous or uncomfortable, continue to educate them on hypnosis, demystify it, address their fears directly, and do your best to put them at ease, even if it means ending the session there or rescheduling.

Ask them if they are ready to begin the hypnosis.

Just before proceeding to, the Stanford script, ask them to get themselves physically comfortable. Remind them that they can adjust their position at any time through the hypnosis with out disturbing the hypnosis. Tell them that if they hear any sounds from outside the room, that they should use these sounds as a reminder or a cue to relax even more, rather than to let the sounds distract them. Remind them that you'll be turning on the videotape and audio tape only after the relaxation/induction, so they need not be startled by the sounds it may make.

Star the Stanford script.....

Pre-Stanford Protocol For Experiment 2: Group 'B'

Dream, which you are also asked to talk about during hypnosis.

"Researchers and Clinicians have been using Hypnosis in order to aid recall of past events for several decades. It is believed that through hypnosis, individuals may be able to recall more details of some events than during the normal conscious state. For individuals who claim to have been abducted by extraterrestrials, hypnosis has revealed an interesting pattern of recollections. Most individuals reporting such events described memories of being shown images in some kind of viewing room. These images are sometimes mental pictures, and sometimes auditory "voices" apparently for the purpose of conveying some kind of message or information. A much smaller minority of reports claim to have undergone some kind of quasi-medical examination while they were held by aliens. These experiences typically include being restrained and probed by alien objects resembling medical instruments, sometimes even feeling tissue being removed or objects implanted.

I will be asking you to have a dream or to fantasize about UFOs and alien encounters, as if you were one of these abductees. We'll start the dream out with you being alone somewhere comfortable, but relatively secluded, then I'll just ask you to dream or to fantasize about an alien abduction. After you've had some time to have a Hypnotic dream, I'll ask you to tell me about everything you can remember from this alien abduction dream. If at any time you feel that the dream is too unpleasant, or you feel uncomfortable, simply let me know, and I'll remind you of where you are, and ask you what you'd like to do."

Pre-Stanford Protocol For Experiment 2: Group 'C'

"Researchers and Clinicians have been using Hypnosis in order to aid recall of past events for several decades. It is believed that through hypnosis, individuals may be able to recall more details of some events than during the normal conscious state. For individuals who claim to have been abducted by extraterrestrials, hypnosis has revealed some very interesting recollections, some of which you may already be somewhat familiar.

I will be asking you to have a dream or to fantasize about UFOs and alien encounters, as if you were one of these abductees. We'll start the dream out with you being alone somewhere comfortable, but relatively secluded, then I'll just ask you to dream or to fantasize about an alien abduction. After you've had some time to have a Hypnotic dream, I'll ask you to tell me about everything you can remember from this alien abduction dream. If at any time you feel that the dream is too unpleasant, or you feel uncomfortable, simply let me know, and I'll remind you of where you are, and ask you what you'd like to do."

Appendix M

Instructions to Raters for Experiment 3

Instructions:

The following pages contain fragments from a number of narratives obtained during hypnosis. Some of them are from individuals claiming to have been abducted by extraterrestrials. Some are from volunteer participants, simulating such experiences. There is at least one from each category.

Please categorize all of the following fragments according to which you feel are the abductees, and which are the simulators. Please categorize ALL of the narratives into one or the other category.

When finished, please write down, by category, the code numbers from each fragment (at the top left of each list). Finally, please describe briefly the method, if any, you used to help you to complete this task

Thank you.

Appendix N

Power Test

Problem:

The effects found in Part 1 seem adequate, but are non-significant. The data are distributed in a "J"-shaped fashion. Non-central distribution requires non-parametric statistics (which are necessarily less powerful than parametric statistics). Calculate power for parametric statistics, which will represent an upper bound on the power of the statistics used, or a lower bound on effect size.

Effect Size: How large must the effect size be (in this sample) in order to detect it accurately 80% of the time. Using the following statistic:

$$\frac{\delta}{\sqrt{\delta^2 + 1}} = 0.7$$

(Solve for δ^2)

$$\frac{\delta^2}{\delta^2 + 1} = (0.7)^2$$

$$\delta^2 = (0.7)^2 \delta^2 + (0.7)^2$$

$$\delta^2 = (0.7)^2 \delta^2 + (0.7)^2$$

$$.98 = \frac{(0.7)^2}{1 - (0.7)^2}$$

∴ We require an effect size of .98 SD (min) in order to detect it 80% of the time, greater, in fact since the test statistic is non-parametric.

Appendix O

Rater's Strategies
(*=clinician)

Rater 1 p = .0044

"I selected as abductees those subjects who were more vague as to detail, [and] who did not seem to worry if their stories were somewhat incoherent or had inexplicable gaps. I also selected as abductees those who concentrated more on affective response."

Rater 2* p = .5

"For real [abductees] I used description of affect, rather than specific memories, and personal feelings over actual memories. For [non-abductees], popular culture descriptions and too many specific memories."

Rater 3* p = .9018

"When they refer to a specific time, it sounds more..real. When the scene seems real (not dreamlike), that sounds more like an abduction... more like a memory. Speaking in the present tense made it seem more like hypnosis [non-abductee]. Saying 'I remember...' is more like an abduction. When they're especially confused - or they sound like they're trying to figure out what's happening or what they see = hypnosis [non-abductee]."

Rater 4 p = .6791

"Simulators: indulging in sexual fantasies, speaking in present tense, providing *Star Wars* details. Abductees: adventurous experiences, using past tense to describe prior experiences."

Rater 5* p = .6791

"Really, it was more of a feeling than anything else, although it was difficult because I lacked facial expression, etc. There was no rule used. At times, if the fragment contained references to the present, I put them in the simulator group."

Rater 6 p = .6886

"[abductees] The sense of uncomfortableness, and/or fear (not a good place to be), and the attention to specific kinds of details. [non-abductees] Generalized observations and the sense of coolness and/or curiosity"

CURRICULUM VITAE

June 1998

Duncan J.A. Day

Information

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Languages

English	Read, write, and speak fluently
French	Read and speak fluently. Write
Icelandic	Read, comprehend/speak some

Education

1996 - 1997 — Queen Elizabeth II Health Sciences Centre
Clinical Psychology Pre-doctoral Internship
Neuropsychology;, Gerontology, Health Psychology

1992 - 1998 — Concordia University,
Doctorate in Psychology (Ph.D.) - Clinical Profile
Specialization in Clinical and Experimental Hypnosis
(Expected completion: January 1998)

1990 - 1992 — Purdue University
Master of Science in Psychology - Experimental
Specialization in Cognition and Perception

1986 - 1988 — McGill University
Bachelor of Science in Psychology
Graduated with Distinction

1982 - 1986 — McGill University
Bachelor of Science in Anatomy

1981 - 1982 — Seminaire de Floreffe, Belgium
Sciences (Rhéto.)
Rotary International Exchange Student

Awards and Scholarships	1996	SCEH Dr. Milla Alihan Student Scholarship
	1993 -1995 inclusive	Concordia University External Award Holders Doctoral Scholarship
	1993 - 1995 inclusive	Fonds pour la Formation de Chercheurs et l'Aide à la Recherche (FCAR)
	1983 - 1985 inclusive	A. S. Hill Bursary, McGill University

Comprehensive Examination Topics

Models of Visual Texture Discrimination
Differences in the perception of simple and compound visual stimuli at threshold and suprathreshold contrasts, and the relative effects of phase relations, orientation tuning, and spatial frequency.

Theories of the Etiology of Infantile Autism.
The effectiveness of biological models at explaining the etiology of the characteristic symptoms of infantile autism.

Clinical Experience

1996 - 1997

Clinical training as part of the Pre-Doctoral Internship at the Queen Elizabeth II Health Sciences Centre, Halifax, Nova Scotia.
(CPA accredited; APA re-accreditation pending completion of site visit in spring, 1997).
[approx. 1800 hrs.]

1992 - 1996

Clinical Training at Concordia University, Montréal, Québec (APA Accredited).
Applied Psychology Centre (A.P.C.) [approx. 700 hrs.]

February - March 1995

Institut Québecois d'Hypnose Clinique et Experimentale, Montréal, Québec
Hypnosis and Psychotherapy, Parts I and II [40 hr. Clinician Training Workshops each]

May - August 1994

Douglas Psychiatric Hospital, Verdun, Québec
Psychogeriatric inpatient and outpatient; Day Hospital [600-hr. Summer Internship]

September 1995 - August 1996

Lifespan Psychological Services (LPS), Montréal, Québec.
Child and Geriatric Cognitive and Neuropsychological Assessment Clinic.
[Approx. 75 hrs.]

Related Employment History	1998 - present	Queen's University, Department of Psychiatry Kingston Psychiatric Hospital. Coordinator, Program for the Study of the Effects of Trauma and Violence; Clinical Research Associate.

1996 - 1997	Pre-Doctoral Clinical Psychology Intern, QEII Health Sciences Centre, Halifax, Nova Scotia
1995 - 1996	Co-founder; Lifespan Psychological Services Montréal, Québec
	Assistant Writer and Technical Consultant Double Trace, Entertainment Software Montréal, Québec
1992 - 1996	Teaching Assistant: (same year-long course for 4 years) Advanced Experimental Psychology [Psyc 400; Undergraduate Thesis Projects] Concordia University, Montréal, Québec
	Research Assistant, F.C.A.R. supported Concordia University, Montréal, Québec
1990 - 1992	Research Assistant, N.I.H. supported Purdue University, West Lafayette, Indiana.
1988 - 1989	Residential Counselor Assistant Supervisor Group Home Peterborough, Ontario.
1987 - 1988	Teaching Assistant: Introduction to Psychology; Introduction to Research and Laboratory Methods McGill University, Montréal, Québec.
1986 - 1987	Research Assistant McGill University, MontréalQuébec.

Professional Affiliations

Member of L'Ordre des Psychologues du Québec (O.P.Q.).	- Registered Psychologist
American Psychological Association (APA)	- Student Affiliate.
*APA Division 30 for Clinical Hypnosis_*	- Affiliate.
The Society for Clinical and Experimental Hypnosis (SCEH)	- Student Affiliate.
The Association of Psychologists of Nova Scotia (APNS)	- Student Member.

Related Activities

Clinical Training Committee, Queen Elizabeth II Health Sciences Centre. 1996 - 97.
University Agreement Committee, QEII Health Sciences Centre-Dalhousie Univ. '96-'97
Association of Graduate Students in Psychology (AGSP). Concordia 1995 - 96.
Departmental Ethics Committee: Ph.D. Student Representative. Concordia 1995 - 96.
Le Bon Dieu Dans La Rue: food distribution program for street kids and runaways in Montreal. Volunteer worker/crew chief on van circuit 1995 - 96.
Student Government Representative (Ph.D.) Sir George Williams Campus: Concordia University, Montréal, Québec, 1994-96.

Theses

First Year Thesis [M.Sc. level]	Dimensional Primacy in Vibrotactile Pitch and Loudness.

Master of Science Differential Effects of Dual Context on Classification of Interacting Vibrotactile Dimensions.

Doctorate Psychological Correlates of the UFO Abduction Experience: The Role of Beliefs and Indirect Suggestion on Abduction Accounts Obtained During Hypnosis.

Publications

Melara, R. D., & Day, D.J.A. (1992) . Primacy of Dimensions in Vibrotactile Perception: An Evaluation of Early Holistic Models. Perception & Psychophysics, 52(1), 1-17.

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