

**Need for Cognition, Need for Affect and Their
Relationship to Hypnotic Susceptibility**

by

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Abstract

Previous research on hypnosis has revealed that imaginative involvements, absorption, and fantasy proneness predicted hypnotic susceptibility. Attempts at examining personality correlates of hypnotic susceptibility have not only fallen short they have come to a halt. Because hypnosis is a tool that can aid and assist individuals in a myriad of areas, delineating the personality traits and characteristics associated with susceptibility will provide practicing hypnotists, clinicians, and psychologists with an even greater understanding of who is most receptive to it. One area that might shed light on this may be research examining how individuals differ in their susceptibility to persuasion. Because the marketing and advertising process attempts to focus an individual's attention on a product, and then delivers a persuasive message; the persuasion process has been likened to hypnosis. Personality characteristics linked to persuasibility may also be linked to hypnotizability. Two characteristics related to persuasibility are need for cognition and need for affect. The present study examined if there is a relationship between need for cognition and or need for affect and being susceptible to hypnosis. Sixty-nine subjects were administered the need for cognition scale of Cacioppo, Petty, and Kao (1982) and the 26-item need for affect scale of Maio and Esses (2001) to assess these personality characteristics. Following the administration of these two scales, hypnotic susceptibility was measured using the Harvard Group Scale of Hypnotic Susceptibility (HGSHS) (Shor & Orne, 1962). The results showed no significant correlations between need for cognition or a need for affect and being susceptible to hypnosis. Consistent with previous findings personality does not predict

hypnotizability and susceptibility to hypnosis is likely to be an aptitude that some individuals possess more than others.

Introduction

Hypnosis can be used as a therapeutic tool to aid and assist individuals with reconciling a number of ailments and concerns. Since the days of Franz Anton Mesmer in the 1700's, theorists and practitioners have recognized that hypnosis involves considerable individual variability (Council, 2002). Some individuals are more easily hypnotized than others and recognizing the differences between who is receptive to hypnosis and who is not has served as a point of emphasis in the research on hypnosis.

A broader understanding of who is most likely to respond to hypnotic suggestions will help practicing hypnotists, clinicians, and psychologists gain an even greater understanding of who will benefit most from its use. The search for the personality traits and characteristics that identify those who are susceptible has not been fruitful. The most successful predictors of hypnotic susceptibility have proven to be imaginative involvements, fantasy proneness, and absorption. All other attempts to expand upon this knowledge have proven to be less than fruitful.

Utilizing past research regarding receptivity to persuasive messages, this study took a new and innovative approach to define the type of individual who responds best to hypnotic suggestions. Persuasion has been likened to hypnosis through the field of marketing and advertising. Researchers have investigated an individuals' need for cognition and need for affect as predictors of responsiveness to persuasion. The previous work in that area laid the foundation for this project which examined need for cognition, need for affect and their relationship to hypnotic susceptibility.

The nature of hypnosis and the induction process

Almost everyone has some knowledge of hypnosis – through theatrical demonstrations; in reference to its uses by medical doctors, dentists, and psychotherapists; from college or university classes in psychology or medicine; or even as a result of actual participation in experiments designed to unravel its mysteries. Nevertheless, knowledge about hypnosis is in another sense very elusive (Hilgard, 1965). The very term hypnosis, itself, is a misnomer. It comes from the Greek word meaning sleep. In no way is the hypnotic state related to sleep, but its very name perpetuates a confusing misunderstanding of the trance experience (Spiegel & Greenleaf, 2006).

The term hypnosis conjures up an endless array of images in people's minds. Many people over the years have formulated theories that attempt to explain this seemingly unusual phenomenon. The fundamental workings of hypnosis remain a mystery, which accounts for the lack of agreement concerning a useful definition of hypnosis. In fact, at one point the Hypnosis Division of the American Psychological Association resorted to a vote for an acceptable definition (Schumaker, 1991). Nevertheless a number of scholars have attempted to define and cultivate theories about hypnosis.

A consideration of the meaning of the term hypnosis requires us to acknowledge at least two ways it is commonly used. One way is by reference to the actions of the hypnotist (Heap, Brown, & Oakley, 2004). This is illustrated by Heap (2001 & 2006) who defined hypnosis as an interaction between two people in which one of them attempts to influence perceptions, feelings, thinking, and behavior by asking the other to concentrate on ideas and images that may evoke the intended effects. On the other hand,

Spiegel and Greenleaf (2006), using the subject as the focus, defined hypnosis as an animated, altered, integrated state of focused consciousness, that is, controlled imagination. It is an attentive, receptive state of concentration that can be activated readily and measured.

A session of hypnosis usually begins with a hypnotic induction which may involve one or more of a considerable range of procedures. Although most theorists do not consider that relaxation is an essential property of hypnosis, the most commonly used methods consist of suggestions that direct the subjects to relax and to become absorbed in their thoughts, imagery and feelings. Examples are progressive muscular relaxation, relaxed breathing, pleasant and calming imagery, and suggestions of relaxation coupled with an ideosensory or ideomotor response, the most popular being eyelid heaviness and arm levitation (Heap, Brown, & Oakley, 2004).

Following the induction procedure, the hypnotist typically makes suggestions for the subject to experience a range of phenomena, depending on the purposes of the hypnotic interaction, be it research, therapy or entertainment (Heap, Brown, & Oakley, 2004). One common type of suggestion is ideomotor suggestion in which the idea is conveyed of a simple, automatic movement of a part of the body, such as a finger or arm. This kind of suggestion often also includes the idea of some alteration in perceptual experience, such as, in the case of arm levitation, a feeling of lightness in the arm. This exemplifies an ideomotor suggestion, others being suggestions of coldness, numbness, warmth or heaviness in a part of the body (Heap, Brown, & Oakley, 2004).

Inhibition of a movement may also be suggested, such as arm immobility or eye catalepsy. Suggestions of this sort are commonly described as “challenge” suggestions in

the experimental literature, to convey the idea that the subject is unable to perform a movement (e.g. move their arm, open their eyes) even when challenged to do so (Heap, Brown, & Oakley, 2004).

Visual experiences may be the target of the suggestion (e.g. “When you open your eyes you will see your best friend standing in front of you”), likewise auditory, olfactory or gustatory. In the literature, responses to these kinds of suggestions are sometimes termed “hallucinations” to convey the quality of realness that the responsive subject often reports. The suggestion may also be expressed in the negative sense, as in the example “When you open your eyes you will not see the chair in front of you,” or “You will hear nothing but the sound of my voice (Heap, Brown, & Oakley, 2004).

Finally, some suggestions call for rather complex experiences and enactments, as in the case of the suggestion of reliving an early memory (“age regression”) or progressing in time to some future event. Others include amnesia for all or some of the events during the hypnotic session, and time distortion (the idea that time is slowing down or speeding up) (Heap, Brown, & Oakley, 2004).

Theories of Hypnosis Reviewed

It turns out that people differ markedly in the extent to which they respond to hypnosis (Benham, Woody, Wilson, & Nash, 2006). A widely accepted and critically important observation about hypnosis is that some subjects seem to be far more capable hypnotic subjects than others. Indeed, it is not too much of an exaggeration to claim that individual differences in hypnotizability have come to serve as the axle around which turns the entire modern enterprise of hypnosis research. For example, are highly responsive hypnotic subjects different from their less responsive counterparts in one way

or several? Are highly responsive subjects all achieving suggested effects via the same mechanism or via different ones? Is it some kind of ability that is central, or some other sort of propensity (Woody, Bowers, & Oakman, 1992)?

Highly hypnotizable people have particular personal characteristics, and they differ in substantial ways from their less hypnotizable counterparts. They often become deeply absorbed in experiences, are highly imaginative and use vivid imagery, respond to suggestions across situations and process information more automatically. However not all highly hypnotizable people show all of these characteristics all of the time or across situations (Barnier & McConkey, 2004).

Despite the absence of objective markers for the hypnotic state, there exist modern theoretical approaches based on the idea that hypnosis involves some special process (Heap, Brown, & Oakley, 2004). The theoretical basis for these special processes is discussed from a psychological, physiological, and neuropsychological point of view.

Fromm (1992) developed an ego-psychological theory of hypnosis based on the work of Sigmund Freud. According to Fromm (1992) hypnosis is an altered state of consciousness in which the ego functions in a manner that is different from the way in which it functions in the waking state. Fromm (1992) defines the ego as a conglomeration of thoughts, feelings, perception, judgments, and memory. This theory draws a distinction between primary and secondary mental processes. The primary processes are emotional, holistic, illogical, unconscious and developmentally immature forms of mental processing, which are primitive but thought to be the source of creativity. Secondary processes, in contrast, are affect-free, analytical, logical, conscious and developmentally mature, and are said to be the seat of reason. Normal adult functioning is biased towards

secondary processing (Heap, Brown, & Oakley, 2004). According to Fromm's (1992) model, the induction of hypnosis causes the subject to relinquish a degree of secondary process activity, biasing them towards primary processing. This psychological 'regression' from sophisticated, logical thought towards more primitive and illogical mental activity is said to account for the increased suggestibility associated with hypnosis and the apparent involuntariness of suggested phenomena (Heap, Brown, & Oakley, 2004).

What happens in hypnosis cannot be described simply as entering a "state," for it also implies a "talent" for hypnosis. (Fromm, 1992). The belief that hypnosis requires a "talent" has also been expressed by E.R. Hilgard who referred to the highly hypnotizable individual as a "virtuoso", indicating a potential uniqueness about him or her in comparison to the moderate or low hypnotizable individual (Horton & Crawford, 2004).

E.R. Hilgard's neodissociation theory (1973) came to fruition as a result of his experiments on hypnotic deafness which led to the discovery of a secret communication system known as the "hidden observer." A subject who was capable of shutting out all sounds, including pistol shots, still raised a finger when he was asked in a quiet voice to raise a finger (while he was still psychologically deaf) to let the experimenter know that some part of him was still hearing. The concept of the "hidden observer" later became the catalyst for many of Hilgard's experiments on the use of hypnosis in pain reduction. In his studies, subjects were able to reveal and report the intensity of pain even though suffering has been reduced (E.R. Hilgard, 1973).

Neodissociation theory (E.R. Hilgard, 1973) proposed that the unity which exists in personal cognitive functioning is somewhat precarious and unstable. An executive ego

provides the basis for self-perception and for conceiving the self as an agent. Its integrity is provided largely through the continuity of the personal memories, not through any unusual self-consistency either in awareness or behavior. This executive ego has many constraints upon it, both through internal conflicts and insufficiencies, and through environmental pressures, physical and social, including hypnotic interactions. There are many subordinate control systems that represent fractions of total cognitive functioning and it is proposed that these structures have at any one time a hierarchical agreement, but their hierarchical positions can shift. For example, in sleep, the cognitive control system that produces dreams is more prominent than it is in waking, though it is doubtless present at a lower level in waking also, as in daydreams and fantasy production generally. Once a system is activated, it may exert its controls autonomously, even though it is a subordinate system (E.R. Hilgard, 1973).

Where hypnosis will enter into this framework is in shifting the hierarchies of control so that what is normally voluntary may become involuntary, what is normally remembered may be forgotten, and (under some circumstances) what is normally unavailable to recall may be recalled. Furthermore, the dominance of the normal executive control is reduced though not obliterated. For example, if the hypnotic subject is given a suggestion that violates his self-conception, he is likely to be aroused from hypnosis, and the executive ego may be responsible for this arousal (E.R. Hilgard, 1973).

In addition to this, the executive ego functions in hypnosis are typically thought to be divided between the hypnotist and the hypnotized person (E.R. Hilgard, 1992). The latter retains a considerable portion of the executive functions from his or her normal state – the ability to answer questions about his or her past and plans, as well as the

ability to accept or refuse invitations to move about or to participate in specific kinds of activities. At the same time, the subject turns over some of his or her executive ego to the hypnotist, so that within the hypnotic contract, the subject will do what the hypnotist suggests, experience what the hypnotist suggests, and lose control of his or her movements if this is indicated. The retained and relinquished fractions will depend upon circumstances, including the degree of hypnotic responsiveness or talent that the subject brings to hypnosis, and the depth of involvement in hypnosis as a function of what transpires between the subject and the hypnotist (E.R. Hilgard, 1992).

A more recent theory of hypnosis was proposed by Crawford and Gruzelier (1992) who during the last 25 years attempted to build a neuropsychophysiological model of hypnosis. According to this approach, highly hypnotizable individuals are capable not only of extremely focused attention to task-relevant stimuli, but also of disregarding task-irrelevant environmental stimuli. These highly responsive individuals also demonstrate greater abilities than less responsive persons in shifting from one strategy to another and from one alternate state of awareness to another – an ability referred to as cognitive flexibility.

Their research also indicates that neuropsychophysiological evidence exists for distinguishing hypnotically susceptible from unsusceptible individuals. According to Gruzelier (1991), recordings of bilateral electrodermal orienting activity and bilateral haptic processing have indicated that high susceptibles have imbalances of activity favoring the left hemisphere. In line with their neuropsychophysiological model of hypnosis, which describes the engagement of anterior inhibitory functions that extends bilaterally, the left hemisphere is more involved than the right in the first stage of the

hypnotic induction process. Thus Crawford and Gruzelier (1992) argue that left hemispheric advantages in high hypnotizable individuals may be seen to facilitate the hypnotic process.

For many years, hypnotic theorizing has been dominated by the idea that hypnosis involves an alteration in consciousness or trance and many theorists continue to assert that hypnotic phenomena involve the operation of special psychological processes. A common theme spanning these approaches is that hypnosis involves the inhibition of high-level cognitive processes, with the ability to experience such inhibition being an important and stable component of hypnotizability (Heap, Brown, & Oakley, 2004).

As we move deeper into the 21st century, and as rising health care costs continue to be a concern, the demand for alternative methods of treating addictions, ailments, and illnesses continues to be prevalent. Because hypnosis is a tool that can aid and assist individuals with these types of concerns, a better understanding of the personality traits and characteristics of those individuals who respond best to hypnosis is important. An even greater understanding of the personality characteristics and emotional traits that an individual brings with them to the hypnosis session will help practicing hypnotists, clinicians, psychologists, and psychotherapists achieve an even greater success rate with their clients. This research hoped to add to the existing predictors of hypnotic susceptibility by showing hypnosis practitioners that cognitive and emotional styles could play a role in being susceptible to hypnosis. The more knowledge that a practicing hypnotist can obtain about their subject the greater the chances are for success in a session.

Personality and hypnotic susceptibility

A significant amount of research has been conducted to attempt to explain the cognitive and psychological processes that occur during hypnosis. Concurrently, an equal amount of effort has been devoted to examining how individuals differ in the degree to which they respond to hypnotic suggestions (McConkey & Barnier, 2004). People differ considerably in their responsiveness to hypnosis and one of the most important tasks of research on hypnosis is to establish the determinants of these differences in responding (Kirsch & Council, 1992). Since the 19th century there was an interest in the personality characteristics and adjustive states of the hypnotically susceptible individual. The notion was popular among psychiatrists of that era, such as Janet, that susceptibility to hypnosis was a trait found primarily in hysterical neurotics (Schulman & London, 1963).

Research on personality characteristics and hypnosis continued into the 20th century when Davis and Husband (1931) examined the relationship between various personality traits and hypnotic susceptibility. Their work tested Janet's belief and refuted his claims that susceptibility to hypnosis is dependent upon neurotic traits. On the other hand, Davis and Husband (1931) found positive correlations between susceptibility and intelligence and susceptibility and introversion in women.

Historically, the work on personality and susceptibility to hypnosis can be divided into two groups. In one group of studies existing inventories were used, on the whole with negative results (Tellegen & Atkinson, 1974). Stiegel (1952) found no consistent relationship between the Rorschach test and hypnotic susceptibility. Schulman and London (1963) looked at hypnotic susceptibility and MMPI profiles. Using undergraduate females of relatively different hypnotic susceptibility levels as determined

by Form A of the Stanford Scale of Hypnotic Susceptibility, the researchers found that the most susceptible group scored significantly lower than others on the psychopathic deviate scale. No other significant differences however were found between groups, suggesting that hypnotic susceptibility is not related to psychopathology.

Scales from inventories such as the California Personality Inventory, the 16 Personality Factor Scale, Guilford-Zimmerman, and the Maudsley Personality Inventory have failed to show appreciable and consistent relations to hypnotic susceptibility (Tellegen & Atkinson, 1974). As E.R. Hilgard (1965) pointed out, the results of these inventories do not adequately sample content areas that are related to susceptibility.

More recently, an interest in the five factor model [neuroticism, openness, extraversion, agreeableness, and conscientiousness] and its relationship to hypnotic susceptibility has been explored. Malinoski and Lynn (1999) were the first to delve into the relationship between the five factor model and hypnotic responsiveness. The NEO-Five Factor Inventory and the Harvard Group Scale of Hypnotic Susceptibility (HGSHS) (Shor & Orne, 1962) were administered to 227 undergraduate students. According to Malinoski and Lynn (1999) none of the five factors correlated with behavioral scores on the HGSHS (Shor & Orne, 1962).

Nordenstrom, Council & Meier (2002) used the Big Five Inventory to determine if one or more of the five factors determine hypnotic suggestibility. The researchers administered the Waterloo-Stanford Group Scale of Hypnotic Susceptibility and the NEO-Big Five Inventory to 182 undergraduate students and found no meaningful relationships between hypnotic suggestibility and any of the five factors.

Green (2004) examined the responses of 285 undergraduate students to the entire 240-item NEO-PI-R and as well as their performances on the HGSHS (Shor & Orne, 1962). Unlike previous investigations that assessed personality and hypnotizability within the same testing session, participants were assessed using the NEO-PI-R and the HGSHS (Shor & Orne, 1962) in two separate, purportedly unrelated, experimental sessions separated by several weeks. According to Green (2004) the relationship between domain scores on the NEO-PI-R and hypnotic responsiveness appears to be quite limited. Collectively, these investigations have failed to find evidence that the five factor model can predict behavioral responsiveness to standardized hypnotic suggestions in any consistent or meaningful way (Green, 2004).

The second group of studies that looked at personality and susceptibility to hypnosis showed more promise. This research has centered on “hypnotic-like” experiences that occur in daily life or attitudes and tendencies that were thought to be specifically related to hypnotic “talent.” (Tellegen & Atkinson, 1974). The majority of this work focused primarily on imaginative involvement, absorption, and fantasy proneness (Kirsch & Council, 1992).

As we look at the various kinds of involvement found among the hypnotically susceptible, we cannot but be impressed by the capacity of the hypnotizable person to set aside reality and to live in a world of fantasy (J.R. Hilgard, 1970). In her work with over 800 students in the Laboratory of Hypnosis Research at Stanford University, J.R. Hilgard (1970) investigated what the precursors to hypnosis were in the experiences of childhood and in the characteristics that the young adult brought to the hypnotic situation. She found imaginative involvement correlated highest with hypnotic susceptibility. Her

research revealed that good hypnotic subjects were more likely to report a longstanding history of imaginative involvements in sensory experiences, reading, and the dramatic arts than persons who were not good hypnotic subjects (Green & Lynn, 2008).

Tellegen and Atkinson (1974) found that the nature of imaginative involvement corresponded to the personality trait of absorption. Absorption was defined by Tellegen and Atkinson (1974) as a disposition for episodes of total attention that fully engages one's representational (i.e. perceptual, enactive, imaginative, and ideational) resources. This kind of attentional functioning is believed to result in a heightened sense of the reality of the attentional object, imperviousness to distracting events, and an altered sense of reality in general, including an empirically altered sense of self.

The researchers had 481 female subjects complete a questionnaire containing items of varied content believed to be related to hypnotizability. The 71-item, self-report questionnaire had been developed from other questionnaires and focused on five content areas: absorption, dissociation, trust, impulsiveness, and relaxation. The results of this study found that absorption was consistently correlated with hypnotizability (Tellegen & Atkinson, 1974). It is worth mentioning that the research questionnaire utilized in this study has since been refined to a 34-item measure known as the Tellegen Absorption Scale (TAS). The TAS has become the most widely used measure of absorption and has significantly predicted hypnotic responsiveness in numerous studies (Kirsch & Council, 1992).

Glisky et al (1991) studied absorption, openness to experience, and hypnotizability. Their work, which involved more than 2,000 subjects in four studies, examined: absorption and hypnotizability, absorption and openness to experience, and

absorption, openness and hypnotizability administered twice; once with the NEO-openness to experience (NEO-OE) and once without the NEO-OE. All four studies confirmed a significant association between absorption and hypnotizability, confirmed a strong link between absorption and openness to experience, and found a significant correlation between openness and hypnotizability.

In this study, the NEO-OE consisted of 48 items divided into six, eight-item subscales: (a) Fantasy (richness of fantasy life), (b) Aesthetics (aesthetic sensitivity), (c) Feelings (awareness of inner feelings), (d) Actions (need for variety in actions), (e) Ideas (intellectual curiosity), and (f) Values (liberal value systems). Whereas researchers such as Malinoski and Lynn (1999) and Green (2004) found no relationship with the NEO and susceptibility to hypnosis Glisky et al (1991) found significant correlations with the subscales measuring awareness of inner feelings, aesthetic sensitivity, and fantasy.

Nadon, Laurence and Perry (1987) examined various measures thought to be related to hypnotizability. Their research found that absorption and a preference for an imagic style of thinking were robust predictors of hypnotizability. In this study, an imagic style of thinking accounted for significant variance in hypnotizability over that accounted for by absorption. The research indicates low hypnotizable subjects as a group possess less talent for absorption in imagery-related activities than do more highly hypnotizable subjects.

Lynn and Rhue (1986) studied the so-called fantasy prone person and the link between imaginative involvements, creativity, and hypnotic responsiveness. The fantasy prone person was defined as a subjects' ability to set the theme, and then an imagination

scenario unfolds that has some of the characteristics of a dream and some of a motion picture.

Sixty-two male and female subjects were given the Inventory of Childhood Memories and Imaginings (ICMI; Wilson & Barber, 1981) and were classified as fantasizers, medium fantasy-prones, and non-fantasizers. After taking the ICMI the subjects took part in an eight to ten hour study of personality that was divided into a number of sessions. Over the course of the sessions, the subjects were hypnotized using the HGSHS (Shor & Orne, 1962) and given a number of measures designed to assess absorption, vividness of mental imagery, response to waking suggestion, creativity, and social desirability.

According to Lynn and Rhue (1986) fantasy-prone subjects diverged from subjects in both comparison groups on measures of hypnotic susceptibility, absorption, vividness of mental imagery, response to waking suggestions, and creativity. In addition, their work supported J.R. Hilgard's (1970) observations regarding the relation between hypnosis and imaginative involvement. Nearly 80 percent of their sample of fantasizers scored in the high-susceptible range.

This study attempted to expand upon the existing personality characteristics and traits that have proven to be predictors of hypnotic susceptibility. Aside from traits such as imaginative involvements, absorption, and fantasy proneness; attempts to expand upon the correlates of personality and hypnotic susceptibility have fallen short. Meanwhile the existing theories surrounding hypnosis point to the psychological, physiological, and neurophysiological cognitive processes that play a role in suspending reality and logic and allow for more emotional cognitive activities to come to the forefront. If these

activities are believed to be behind the facilitation of hypnosis, then perhaps research that examined individual differences in cognitive processes and emotional styles was necessary to energize the research on hypnosis and personality. Recent attempts to expand the existing knowledge of hypnotizability and the trait-like characteristics of personality have not only failed; but they have come to halt. In fact, as Kirsch and Braffman (2001) have noted, the determinants of hypnotic suggestibility and hypnotizability have been empirically established, and there are apparently no additional determinants left to uncover.

Persuasion, marketing and hypnotic susceptibility

Every day, we are inundated with a variety of appeals asking us to do various things – to quit smoking, to buy a car, to vote for an issue, and so forth. Frequently these messages are tailored in some way so that various types of audiences can appreciate them. One way to tailor messages is to appeal to the audience's emotions. Alternatively, messages can be constructed to focus on the audience's beliefs (See, Petty, & Fabrigar, 2008).

The process of advertising by consumers involves varying degrees of attention and concentration. Advertisers seek to focus attention on their ads in order to persuade consumers to buy products (Gould, 1991). In this respect, the advertising process is like hypnosis in that a hypnotist seeks to concentrate and focus an individual's attention in order to induce him or her to follow a persuasive suggestion. Ultimately the main goal of advertising is to persuade target audiences in favor of the ideas, commodities or services featured in the advertisement. The quality of the advertising message is assessed mainly

by the level of persuasion it creates in the consumer, very much as the quality of how a hypnotic suggestion is measured by the level of acceptance by the patient (Kaplan, 2007).

Several studies have used the personality constructs of need for cognition and need for affect to test the hypothesis that persuasive messages induce more attitude change when their arguments match the cognitive and affective content of the recipient's attitude toward an issue (Haddock, Maio, Arnold, & Huskinson, 2008). Because the persuasive nature of advertising effects and hypnosis are thought to be similar, this research study examined whether there was a relationship between need for cognition, need for affect, and being susceptible to hypnosis.

Along with the research on susceptibility to hypnosis, studies have also examined how individuals differ in regards to receptivity to persuasion. These differences have been found to be based upon on an individual's attitude and the extent to which a persuasive message is either in accord or disagreement with that attitude. These attitudes are believed to be either affective or cognitive and the distinction between these two has been analyzed. Traditionally, the affective component of attitudes has included emotions and feelings whereas the cognitive component has included beliefs, judgments, or thoughts associated with an attitude object (Edwards, 1990).

The knowledge that susceptibility to persuasion is influenced by an individual's affective and cognitive attitudes provides us with an interesting opportunity to examine if these tendencies come into play in receptivity to hypnosis. Personality traits and characteristics that feature cognitive processes and emotional styles have been virtually absent from prior studies on hypnotic susceptibility.

Accounting for individual differences in hypnotic susceptibility has been an enigma that has eluded the best efforts of hypnosis researchers for the better part of a century (Kirsh & Braffman, 2001). To further the search for those personality characteristics and traits that contribute to hypnotic susceptibility, this research aimed to investigate whether or not the need for cognition or need for affect, influenced receptivity to hypnosis. While no previous research had delved into this phenomenon, prior studies compared the need for cognition versus the need for affect in terms of processing advertising messages and persuasion.

It and advertising processes are related in that both involve communications which seek to persuade individuals to take behavioral action (Gould, 1991). Persuasion is defined by Perloff (2003) as a symbolic process in which communicators try to convince other people to change their attitudes or behaviors regarding an issue through the transmission of a message in an atmosphere of free choice.

According to Gould's (1991) model of advertising suggestibility a source encodes a message to be delivered through some medium to a receiver who decodes and often acts upon the message delivered, a form of feedback to the source. In the case of hypnosis, the hypnotist communicates a message through the medium of the hypnotic trance-inducement process. In turn, the hypnotized person receives and decodes this message. Response to suggestion, either during the trance or post-hypnotically, constitutes feedback as to whether the hypnotist has effectively communicated with the subject. Likewise, the advertising process is traditionally viewed as communicative process in which a source (the advertiser) communicates a message through some medium (e.g.,

television, magazines) to the consumer. The consumer then provides feedback to the advertiser in the form of attitude change and product purchase (Gould, 1991).

Mallot, Bourg and Crawford (1989) looked at subjects' thoughts given in response to the presentation of a message and different attitude measures. They found differences between the waking and hypnotic state, and in particular that hypnotized subjects generated counterarguments to the message. Their research also revealed significant differences between high and low hypnotizable subjects, both in the hypnosis and waking state conditions. High hypnotizable subjects tended to generate more favorable thoughts and agree more with the message than low hypnotizable subjects (Mallot, Bourg and Crawford, 1989).

The effects demonstrated in the Malot, et al (1989) study might be extended with consideration of the Elaboration Likelihood Model (ELM) (Petty, Cacioppo, and Schumann 1983). The ELM provides a general framework for organizing, categorizing, and understanding the effectiveness of persuasive communications. According to the ELM, persuasion attempts typically follow two relatively distinct routes. The first type results from a person's careful and thoughtful consideration of the true merits of the information presented (central route). The other type of persuasion, however, occurs as a result of some simple cue in the persuasion context (e.g, an attractive source) that induced change without necessitating scrutiny of the true merits of the information presented (peripheral route) (Petty & Cacioppo, 1986).

When presented with strong arguments, highly hypnotizable subjects should still counterargue less than those who are not hypnotizable. This difference, however, should be less important when translated into brand attitudes, since the strong argument probably

makes counterargument and elaboration salient for all, whether they are very hypnotizable or not. In other words, strong arguments are more likely to serve as a cue for cognitive activity than are weak arguments. Involvement with the product will serve as a moderator of the relationships. Highly involved individuals will be more prone to counterargument as they elaborate more on various arguments, whether weak or strong. Therefore high involvement in a particular situation, such as being in the market for a product, may displace hypnotizability and advertising susceptibility as factors in determining the degree of counterargument. On the other hand, under conditions of low involvement, highly hypnotizable individuals will still tend to counterargue less than those who are less hypnotizable, although both will be more responsive to peripheral cues. Hypnotizable individuals, however, should be even more responsive to peripheral cues and thus less likely to engage in counterargumentation (Gould, 1991).

In addition to central and peripheral cues, and the role that they could potentially play in hypnotizability, Kahneman (2011) examined the speed of thought and a connection can be made with hypnosis. The author proposed two systems that make up the machinery of the mind. System one, he proposed, is the fast system, while system two is the slow or thinking system. In system one thinking is fast, unconscious, intuitive and effort-free. Meanwhile system two is slow, conscious, and uses deductive reasoning. If we were to attempt to connect Kahneman's two systems and hypnosis, the hypnotic state bears more of a resemblance to system one than system two. Kahneman's (2011) belief is similar to that of Kirsch and Lynn (1999) who explained why highly hypnotizable individuals may come to experience whole sequences of actions as involuntary. The researchers start with the premise that automatic or involuntary behavior is, in fact, a

feature of everyday life. Indeed, evidence suggests that much of everyday behavior is routinized and scripted to be carried out fairly automatically without continual monitoring from the central executive. All that is needed, therefore, for a highly hypnotizable subject to respond to suggestions is to intend to enact the hypnotic role. Although the central executive is likely to be involved in planning this initial stage, having established the intention, the subject is then in a position to essentially “hand over” the executive control of his or her actions to the hypnotist, in the same way that a driver might hand over control of directing the car he or she is driving to the navigator (Wagstaff, 2004).

This research illustrated that persuasion, advertising and marketing effects, and the speed of thoughts all share some common ground with hypnosis. This helped to establish the groundwork for examining two new personality constructs that had never been examined in hypnosis research.

Need for Cognition and Need for Affect

Cacioppo, Petty, and Kao (1984) defined the need for cognition as an individual’s tendency to engage in and enjoy effortful cognitive endeavors. Meanwhile, Maio and Esses (2001) defined the need for affect as the general motivation of people to approach or avoid situations and activities that are emotion inducing for themselves and others. This need also featured the desire to experience and understand the emotions of one self and others, and it subsumes the belief that emotions are useful for shaping judgments and behavior (Haddock, Maio, Arnold, & Huskinson, 2008).

There are meaningful differences in the extent to which people seek and even approach or avoid emotions. Emotion approach was uniquely correlated with individual

differences in affect intensity, alexithymia in the willingness to explore emotions, the need to evaluate, and the need for closure. In contrast, emotion avoidance was uniquely correlated with individual differences that tend to reflect the tendency to struggle with (vs. seek) anxiety-related thoughts and emotions (neuroticism, negative affectivity, repression-sensitization, sensation-seeking) and difficulties in identifying, describing, and expressing emotions in general (Maio & Esses, 2001).

In their research, Maio and Esses (2001) examined how participants' reactions to the death of Princess Diana illustrated the difference between emotion approach and avoidance. The valence of participants' reactions was positively correlated with the motivation to approach emotions. That is, participants who were high in the motivation to avoid emotions reported emotions that were less negative than did people who were low in the motivation, further supporting the speculation that the motivation to avoid emotions is uniquely related to the extent to which people avoid distressing, anxiety-related emotions.

A number of studies have looked at the need for cognition and a need for affect with respect to receptivity to persuasion. Cacioppo, Petty and Morris (1983) examined the relation among need for cognition, message processing, and persuasion. Pairs of subjects holding approximately the same attitude toward instituting senior comprehensive exams and raising student tuition, but with different scores on the need for cognition scale were used in this study. In each study, the subjects read a set of either strong or weak arguments supporting the recommendation of senior comprehensive exams and a tuition increase. The study showed that the manipulation of argument quality had a larger impact on the message evaluations, impressions of the communicator, and attitudes of

individuals high in need for cognition compared to those low in need for cognition.

Individuals high in need for cognition also recalled more message arguments from both the strong and weak versions of the message, and they reported expending more cognitive effort in deliberating about the message to which they were exposed than did their counterparts. Moreover, the correlation between message evaluation and post communication attitudes was significantly higher for individuals high than for those low in need for cognition (Cacioppo, Petty, & Morris, 1983).

Edwards (1990) studied the sequence of affect and cognition in attitude formation and resistance to affective and cognitive means of persuasion in two different experimental settings. This study found that affect-based attitudes are more vulnerable to affective means of persuasion than to cognitive means of persuasion. In addition to this, Edwards' (1990) work revealed that cognition-based attitudes exhibited equal change under both affective and cognitive means of persuasion. Taken together these studies suggest that the conditions under which an attitude is formed cast an influence on its ability to withstand counter attitudinal communications. When affect precedes cognition in attitude formation, an attitude will be more vulnerable to affective means of persuasion than to cognitive means of persuasion. On the other hand, when cognition precedes affect in attitude formation, an attitude may be equally susceptible to affective and cognitive appeals.

Haddock, Maio, Arnold, and Huskinson (2008) examined whether persuasion should be affective or cognitive. In a three-experiment study, the researchers found that affective messages elicited more positive attitudes among individuals high in need for affect and low in need for cognition, whereas a cognitive message elicited more positive

attitudes among individuals low in need for affect and high in need for cognition. In addition to this Haddock et al. (2008) found that individual differences in need for affect influenced receptivity to an affect-based (but not cognitive-based) message, whereas individual differences in need for cognition influenced receptivity to a cognition-based (but not affect-based) message. Also, individual differences in need for affect were associated with increased recognition of information from an affect-based (but not cognition-based) message, whereas individual differences in need for cognition were associated with increased recognition of information from a cognition-based (but not affect-based) message.

Given the fact that there are differences in how cognitive and affective messages are processed in the presence of persuasion, coupled with the fact that hypnosis and the persuasive nature of advertising effects have been linked; this study looked at whether a need for cognition and or a need for affect were correlated with hypnotic susceptibility. It was thought that some of the tendencies associated with these constructs play a role in determining susceptibility to hypnosis.

According to Sheehan (1992), hypnotic subjects are not passive responders. They actively cognize so as to fit their responses to the suggestions of the hypnotist, and frequently use problem-solving approaches to accomplish this goal. Given this belief it was thought that individuals who are high in need for cognition would demonstrate some of the characteristics of individuals who are susceptible to hypnosis. Or perhaps those individuals who are guided by their feelings and emotions also possessed hypnotic talents and abilities characteristic of susceptible individuals. As Brown and Oakley (1998) pointed out, hypnosis involves some sort of temporary inhibition of reality-based, logical

thought allowing more emotional, intuitive and holistic cognitive processes to predominate. Emotional processes that involve an exploration of feelings are a trademark of those individuals who have a need for affect and there may in fact be a relationship to being susceptible to hypnosis.

While there have been no studies attempting to link the need for cognition or the need for affect and receptivity to hypnosis; it was interesting to consider a few studies that have looked at hypnotic suggestibility and academic achievement, hypnotizability and affect states, hypnotic susceptibility and emotional styles of thinking, and post-hypnotic compliance.

West (2003) conducted research that examined the relationship between hypnotic suggestibility and academic achievement. Fifty-eight undergraduate students in their final year of study at the University of Luton were administered the HGSHS (Shor & Orne, 1962) to assess their responsiveness to hypnotic suggestions. Along with that, academic achievement was measured by performance in psychology courses over a three-year period. West (2003) found a significant negative correlation showing that the higher the academic achievement, the lower the hypnotic susceptibility.

Zuckerman, Persky and Link (1967) looked at the relation of mood and hypnotizability. The researchers examined whether or not the affective states of anxiety, depression, and hostility just prior to a hypnotic induction were related to subsequent hypnotizability. The Multiple Affect Adjective Checklist, an affect-state test, was given to subjects just prior to hypnosis. Following hypnosis, the MMPI affect-trait measure was given. The results of this study revealed that affect states just prior to hypnosis are related to subsequent hypnotizability, but that general affect traits are unrelated to

hypnotizability. In addition, hostility proved to be the affect most consistently related to hypnotizability. The hostility-state score correlated negatively and significantly with HGSHS scores in all three groups, with an average size of 37 subjects, where as depression correlated negatively and significantly in two of the three groups; while anxiety correlated negatively and significantly in just one of the three groups (Zuckerman, Persky and Link, 1967).

Brown and Oakley (1998) looked at hypnotic susceptibility and holistic and emotional styles of thinking. Ninety-three subjects were hypnotized via the HGSHS (Shor & Orne, 1962). In addition, the subjects completed the Rational versus Experiential Inventory (RVEI), the Human Information Processing Survey (HIPS), the Inventory of Learning Processes (ILP), and Crowne and Marlowe's Social Desirability Scale. Brown and Oakley (1998) found a significant correlation between susceptibility and the RVEI. The RVEI is based on Cognitive-Experiential Self-Theory, a global theory of personality that postulates the existence of two separate processing systems, the rational and the experiential. The rational system operates via the conscious manipulation of symbols in a logical and analytical fashion, while experiential processing is holistic, emotional and imaginative. All behavior is determined by the dynamic balance that exists between the two systems, the RVEI attempts to assess the relative degree to which individuals prefer to process rationally or experientially (Brown & Oakley, 1998).

This finding suggests that the ability to enter hypnosis is in some way related to the degree to which individuals rely on their gut-feelings and intuitions when making decisions. This finding also indicates that high susceptibles experience their emotions more strongly than lows do. The authors went on to state that it seems reasonable to

suggest that individuals who regard their emotions as fundamental to their everyday decision-making processes were more likely to allow themselves to enter a state in which emotions are heightened.

Finally, Rosenberg and Gardner (1958) conducted a case study involving the dynamics of posthypnotic compliance. The authors found that compliance was facilitated by the participant's ability to interpret the content of the posthypnotic suggestion in a manner consistent with the mechanisms and affective reactions that, for him, characterize and maintain the hypnotic relationship.

Hypothesis

Hypothesis 1: This study began with the knowledge that the possibility that an individual's need for cognition could hinder the hypnotic process. It was thought that the desire to be engaged in effortful cognitive activity would conflict with the nature of hypnosis, which involves suggestions that direct an individual to relax and become absorbed in their thoughts, imagery and feelings.

This study however hypothesized that need for cognition would be positively correlated with hypnotic susceptibility. The desire and ability to engage in and enjoy effortful cognitive activity is a characteristic that is indicative of those individuals who have a need for cognition (Cacioppo, Petty, & Kao, 1984). Similarly, the ability to enter hypnosis can be viewed as an effortful cognitive activity as well. Individuals who are susceptible to hypnosis are believed to possess some type of cognitive flexibility. Highly hypnotizable people have an ability to shift from one strategy to another; or one alternative state to another. This is an active and effortful transaction that results in a heightened sense of reality and imperviousness to distracting events (Crawford and

Gruzelier, 1992). The flexibility of these cognitive processes, which are psychological, physiological, and neurophysiological in nature, will contribute to a positive correlation between the need for cognition and hypnotic susceptibility.

Hypothesis 2: A need for affect will be positively correlated with hypnotic susceptibility. The extent to which people believe in the desirability of emotions and feel a need to pursue them is a hallmark of those individuals who have a need for affect (Maio and Esses, 2001). Meanwhile, the ability to enter hypnosis requires that more emotional cognitive processes come to the forefront. In addition to this, hypnotized subjects have freer access to more intense emotions. This will contribute to a positive correlation between the need for affect and hypnotic susceptibility.

Hypothesis 3: A need for cognition and a need for affect would each contribute unique variance in explaining hypnotic susceptibility. There was evidence demonstrating that individual differences in need for cognition and need for affect influence receptivity to cognitive and affective-based persuasive messages. Similarly, some research had linked persuasion and hypnosis via the field of advertising and marketing. With studies pointing to the importance of individual differences in need for cognition and need for affect in understanding how individuals responded to different types of persuasion, it stood to reason that these two constructs would each influence receptivity to hypnosis, despite their differences. Given the evidence that hypnosis capitalizes on both the ability of an individual to actively cognize; and for more emotional cognitive processes to dominant, it was logical to believe that a need for cognition and a need for affect would each contribute unique variance in explaining hypnotic susceptibility.

Method

Participants

A total of 69 participants (14 males and 55 females) took part in this study. The subjects ranged in age from 18 to 51, with a mean age of 24.5. Fifty-one of the 69 subjects were recruited from the Undergraduate Psychology Subject Pool, sponsored by the Department of Psychology at the State University of New York at New Paltz. The study was advertised on a web site recruiting students for the subject pool. The study was advertised for approximately three weeks and students were free to volunteer in exchange for five credits used to fulfill a degree requirement. The remaining 18 subjects came via friends, colleagues, and acquaintances that were aware of the study and expressed an interest in participating. Their participation was strictly voluntary and these subjects received nothing in exchange for their time.

Materials and Procedure

The participants in this study were tested in groups ranging from as little as two, to as many 12. The testing session began with all participants completing the Need for Cognition (Cacioppo, Petty, & Kao, 1984) and Need for Affect Scales (Maio & Esses, 2001). Following the completion of the two scales, the group was given a brief explanation of hypnosis. The researcher explained hypnosis as a state of magnified concentration that is easily and readily entered automatically every day. The researcher went on to explain how the process is similar to driving a car or being engrossed in a riveting movie or book.

After this brief description of hypnosis was given, the subjects were told that hypnotic phenomenon can be produced without a formal induction procedure. The

subjects were told that they would be given a series of ideas and images for their imaginations to act out as best as they could. They were asked to neither play along with nor resist the experimenter; but instead to simply let whatever they were experiencing to happen. Following this explanation, the subjects were administered a shortened form of the on the HGSHS (Shor & Orne, 1962) without the use of a hypnotic induction.

Measures

Need for Cognition: The 18-item Need for Cognition Scale (Cacioppo, Petty, & Kao, 1984), which was used to measure need for cognition, asked participants to rate statements such as “I prefer complex to simple problems.” Items were rated on a five-point scale ranging from 1 (extremely uncharacteristic of me) to 5 (extremely characteristic of me). A score for need for cognition was calculated by reverse scoring the negatively keyed items. In previous research, this measure yielded excellent test-retest reliability (.88; Sadowski & Gulgoz, 1992, as cited in Haddock et al, 2008). In this study, the need for cognition scale demonstrated strong reliability with a Cronbach’s alpha of .85.

Need for Affect: The 26-item Need for Affect Scale (Maio & Esses, 2001), which was used to measure need for affect, asked participants to rate statements such as “I like to dwell on my emotions” and “I would prefer not to experience either the lows or highs of emotion.” Items were rated on a six-point scale ranging from 0 (strongly disagree) to 6 (strongly agree). A score on the need for affect was calculated by reverse scoring the negatively keyed items. In previous research scoring this measure has yielded excellent test-retest reliability (.85, Maio & Esses, 2001). In this study, the need for affect avoidance and approach scales resulted in reliability of .80 and .75 respectively.

Hypnotizability: Over the span of almost 40 years, the HGSHS of Shor & Orne (1962) has been evaluated extensively for its properties as a measuring instrument and may be the most widely used measuring instrument in the field of hypnosis (Brown, 1992). It consists of 12 items (such as hand lowering, finger lock, arm rigidity, hands moving together, eye catalepsy) and subjects complete a response booklet based upon subjective and objective impressions of their response. Coe (1964) administered the HGSHS (Shor & Orne, 1962) to 168 upper level college students and found support for it as an accurate predictor of hypnotic susceptibility.

Historically the HGSHS (Shor & Orne, 1962) has been applauded because its most valuable characteristics are that it is group administered and the time in which it takes to administer in comparison to other scales is decreased. Because the induction rituals are separate from test suggestions, it is possible to administer the suggestions with and without inducing hypnosis or following any other procedure aimed at increasing responsiveness to suggestion. Studies have revealed that the effect of hypnosis is relatively small and the correlation between hypnotic and nonhypnotic responding is very high (Kirsh & Braffman, 2001).

Wells (1924) found that direct suggestions such as, “Your body is immovable,” or “You cannot say your name,” administered without a preliminary trance induction procedure, are sufficient to produce body immobility, verbal inhibition, and other behaviors historically associated with the word “hypnosis” in a considerable portion of subjects.

Weitzenhoffer and Sjoberg (1961) contend that individuals can respond to a large variety of suggestions in the absence of any formal induction of hypnosis. Their studies

reveal that individuals who have not been formally hypnotized can nevertheless exhibit behavior which can be produced by other individuals only after having been hypnotized.

Barber and Glass (1962) examined whether or not direct suggestions, administered without a preliminary trance induction procedure, were sufficient to elicit behaviors associated with the word "hypnosis." Participants were given eight direct suggestions designed to elicit the following items of behavior: arm lowering, arm levitation, the inability to unclasp hands, thirst "hallucination," the inability say their name, body immobility, selective amnesia, and "posthypnotic" response. Although a formal trance induction procedure was not employed, 102 subjects (22%) carried out more than five of the eight suggested behaviors. The experimental behaviors and post-experimental reports were comparable to what one might expect had they been formally "hypnotized"; e.g., "I felt I was dying of thirst," "I was amazed when I couldn't speak my name," and "I just couldn't get up from the chair." (Barbar & Glass, 1962).

Given this evidence the subjects in this study were not hypnotized. The participants were administered nine of the 12 items on the HGSHS (Shor & Orne, 1962). The items that were included in this study were item one (head falling), item three (left hand lowering), item four (right arm immobilization), item five (finger lock), item six (left arm rigidity), item seven (hands moving together), item eight (communication inhibition), item 10 (eye catalepsy), and item 11 (post-hypnotic suggestion of touching left ankle).

The three eliminated items were eye closure, hallucination of a buzzing fly, and a post-hypnotic suggestion for amnesia of the hypnosis session. At the conclusion of the

HGSHS (Shor & Orne, 1962) the subjects reported their subjective and objective responses to the hypnotic suggestions.

The eye closure task was eliminated from the study because without the use of hypnosis in this study, there was no need to put the subjects through the eye closure task. A decision was also made to eliminate the hallucination of a buzzing fly and the post-hypnotic suggestion for amnesia of the events that occurred during the hypnosis session. While hypnosis as a whole is not dangerous, there was an element of risk to including these two tests. E.R. Hilgard (1965) reported that participants experienced feelings of discomfort following the buzzing of hallucinatory flies. Other participants have emerged from hypnosis with an inability to speak, have developed transient headaches after the session, and encountered dreams attributed to the experience of being hypnotized. For some participants, hypnosis can be a highly-charged personal experience that may bring up traumatic experiences of early life and bring evidences of these earlier traumas into the hypnotic situation (E.R. Hilgard, 1965). In an effort to minimize all potential risks, the decision was made to conduct this study without the use of the hypnotic trance.

After the administration of the HGSHS (Shor & Orne, 1962), the subjects were asked to rate both their subjective and objective responses to the suggestions. Scoring is simply a “+” or “-“ for each of the nine items on the objective scale. The objective behavioral items receive a “+” for every suggestion that was experienced and a “-“ for every suggestion that was not experienced. Those subjects who responded to 0 to 3 items on the objective scale were characterized as having a low susceptibility to hypnosis. Meanwhile those subjects who scored from 4 to 6 on the objective scale were

characterized as having medium susceptibility to hypnosis and those who scored 7 to 9 on the objective measure were believed to be highly susceptible to hypnosis.

This study, with its modified use of the HGSHS (Shor & Orne, 1962), and elimination of the hypnotic induction, showed Cronbach's Coefficient Alpha of .60 on the subjective impressions scale, .42 on the objective outward response scale, and .65 on the subjective inward response scale. The HGSHS (Shor & Orne, 1962) is progressive in nature. At each item, individuals who are not susceptible are not likely to respond. This suggests that all items are not expected to correlate highly with each other; therefore alpha may not be the best measure of reliability for this scale.

Results

The group as a whole had a mean score of 6.23 on the objective portion of the HGSHS (Shor & Orne, 1962) indicating that they were at the high end of medium hypnotic susceptibility. A total of 34 subjects scored between a 7 and 9 on the objective scale demonstrating that they were highly susceptible to hypnosis. Meanwhile 28 subjects scored between a 4 and 6 on the objective scale indicating medium susceptibility while seven subjects scored between 0 and 3 signifying low susceptibility to hypnosis.

Despite the absence of any formal hypnotic induction, some participants reported an authentic, hypnotic-like experience on the Overall Subjective Rating Scale of the HGSHS (Shor & Orne, 1962). One participant stated, "I felt a strong compulsion to follow all suggestions. I felt extremely relaxed as well." Another participant reported, "With the first exercise, where we were asked to drop our head, I started voluntarily but after that everything became involuntary. At some points I was thinking to myself, what is going on, I can't stop. Everything I was told I followed strictly." Another participant

stated, “I felt that I was trying to resist the suggestions, but my mind & body did them anyway.” Finally a participant stated, “A first fought it a bit and found this to be corny. But once the study moved along I was in a zone. I didn’t have control of anything. I didn’t even have much thought. I just heard the soothing voice and listened. It was quite awesome.”

Each hypothesis was tested using a regression analysis on the need for cognition, the need for affect and its influence on hypnotic susceptibility. The table below illustrates the correlations that this study found.

Table 1

Pearson Product Moment Correlations Measuring Need for Cognition, Need for Affect and Hypnotic Susceptibility

	NFC	NFAAvd	NFAApp	SIR	OOR	SIE	OSE
NFC	.85	.05	-.09	.10	-.07	-.10	-.01
NFAAvoid		.80	-.20	.10	-.08	-.12	-.09
NFAApp			.75	.04	-.06	-.01	-.01
SIR				.60	-.67	-.74	-.50
OOR					.42	.70	.39
SIE						.65	.65
							--

Key: NFC= Need for Cognition, NFAAvoid = Need for Affect Avoidance, NFAApp= Need for Affect Approach, SIR = Subjective Impression Response, OOR = Objective Outward Response, SIE= Subjective Inward Experience, OSE= Overall Subjective Experience. Cronbach’s Coefficient Alpha’s listed in **bold**.

Hypothesis 1: It was hypothesized that a need for cognition would be positively correlated with hypnotic susceptibility. A Pearson Product Moment Correlation however revealed that no relationship existed between the need for cognition and susceptibility to hypnosis on the objective scale of the HGSHS $r(67) = -.07, p > .05$. In addition to this, there were no relationships between need for cognition and an individual’s subjective

impression of their response on the HGSHS $r(67) = .10$, $p > .05$, subjective inward experience $r(67) = -.10$, $p > .05$, and overall subjective experience $r(67) = -.01$, $p < .05$.

Hypothesis 2: It was also hypothesized that a need for affect would be positively correlated with hypnotic susceptibility. A Pearson Product Moment Correlation, however, revealed that no relationship existed between susceptibility to hypnosis on the objective outward response scale of the HGSHS and the need for affect on either the avoidance $r(67) = -.08$, $p > .05$ or approach subscales, $r(67) = -.06$, $p > .05$. Table 1 shows the correlations among the measures.

Hypothesis 3: It was hypothesized that need for cognition and need for affect would each contribute unique variance in explaining hypnotic susceptibility. Since neither need for cognition nor need for affect avoidance or approach explained significant unique variance on their own no further statistical analysis was needed.

Discussion

This study broke new ground by examining two personality constructs that had never been discussed in the literature on hypnosis and hypnotic susceptibility. The belief that there could be a relationship between either a need for cognition or a need for affect and susceptibility to hypnosis had been uncharted in hypnosis research. Although no hypnotic induction was used, the results of the HGSHS (Shor & Orne, 1962) indicated a high degree of hypnotizability among the participants. The group had a mean score of 6.23 on the objective scale of the HGSHS (Shor & Orne, 1962) placing them at the high end of medium susceptibility spectrum. Similarly, 34 of the 69 subjects demonstrated a high susceptibility to hypnosis. Without question the group as a whole proved

hypnotically susceptible, however, their receptivity to hypnosis did not result in any relationship with the personality constructs that were tested.

This research also attempted to expand upon the existing personality characteristics and traits that have proven to be predictors of hypnotic susceptibility. The most successful and fruitful research on hypnotic susceptibility had centered on “hypnotic-like” experiences that occur in daily life or attitudes and tendencies that were thought to be specifically related to hypnotic “talent.” The evidence from this study, however, indicates that personality does not predict hypnotizability. While need for cognition and need for affect have proven to be predictors of susceptibility to persuasive messages, they were unrelated to hypnotic susceptibility in this study.

It was hypothesized that there would be a positive correlation between need for cognition and susceptibility to hypnosis. The desire and ability to engage in and enjoy effortful cognitive activity is a characteristic that is indicative of those individuals who have a need for cognition (Cacioppo, Petty, & Kao, 1984). As McConkey and Barnier (2004) put it, the hypnotized individual is an active participant who employs appropriate cognitive strategies (e.g. concentrative, independent, and constructive) to resolve the multiple problems posed by the hypnotic setting. A regression analysis however revealed that a need for cognition had no relationship with being susceptible to hypnosis. In this study, the mechanisms that drive these two principals were unrelated. One plausible explanation for this finding is that a desire to engage in effortful cognitive activity conflicts with the nature of hypnosis, which involves suggestions that direct an individual to relax and become absorbed in their thoughts, imagery and feelings.

It was also thought that there would be a positive correlation between need for affect and susceptibility to hypnosis. While researchers such as Nash and Spinler (1989) had uncovered that a positive emotional involvement correlated with hypnotizability and later Cardena et al (2009) found that hypnosis may have involved a more general tendency to be affected by the emotions of others, this study revealed that no correlation existed between the desirability to display and pursue emotions (Maio & Esses, 2001) and being susceptible to hypnosis.

As noted earlier, theorists such as Hilgard (1973) and Fromm (1992) have referred to the highly hypnotizable person as a virtuoso who possesses a “talent” for hypnosis. In fact, there are theories of hypnosis that afford the central causal role to ability or aptitude (Benham et al, 2006). Aptitude-centered theorists have stated that highly consistent individual differences in hypnotic performance reflect the direct and substantial operation of latent cognitive ability. Just as there are aptitudes that explain substantial variability in athletic, artistic, and intellectual performance, so there is a putative aptitude that substantially explains variability in hypnotic performance (Benham et al, 2006).

This reasoning provides a plausible explanation for the finding that there was no relationship between need for affect and hypnotic susceptibility at this time. Some individuals simply possess the capability to shift their attention from thing to another or to focus intently on one thing or object better than others. These abilities are central and key to facilitating the hypnotic process and are not catalysts that drive or compel an individual to pursue or display their emotions.

Personality measures, such as need for cognition and need for affect, tend to reflect how an individual is likely to respond in a particular situation. Because hypnosis appears to cause a shifting of cognitive processes that are psychological, physiological, and neuropsychological in nature then perhaps personality measures cannot and will not be able to predict who will and who won't have the ability to make that shift. Instead research that examines skills that involve mental and psychological aptitudes and their relationship to hypnotic susceptibility might prove more fulfilling. These can include learning and thinking styles, academic achievement, and creativity.

Similarly, if hypnotic susceptibility is believed to be ability or aptitude-based; then can it be improved upon or enhanced? In other words, just as practice and repetition can lead to improvement in virtually any activity or task, can an individual become better at hypnosis and experience hypnotic phenomenon more readily and vividly with subsequent hypnosis sessions? This would be interesting to examine at a later time.

Although no relationships were found between a need for cognition, need for affect and hypnotic susceptibility in this study, it is important to remain open to the possibility that a relationship may exist. A null result in this study should not halt a deeper investigation of this topic. In fact, further investigation that includes a more reliable measure of hypnotic susceptibility might be the first step in revitalizing this study. Given the fact that the reliability of the modified version of the HGSHS was lower than traditionally acceptable, perhaps this study will yield a different outcome if the HGSHS (Shor & Orne, 1962) is used in its entirety.

It may be that a relationship between need for cognition, need for affect and hypnotic susceptibility could be found in future research. In this study there was no

match with cognitive or affective involvement and hypnosis. Perhaps a more wide-reaching and diversified population would bring different personality characteristics to the experimental setting. One could argue that either of these personality constructs should not preclude someone from being a good hypnotic subject. Entering a state of hypnosis has been equated to the same process that occurs when we drive a car or become engrossed in a riveting movie or book. These are behaviors that people engage in daily regardless of whether they possess a need for cognition, need for affect or neither of the two characteristics. While those who possess a need for cognition or need for affect might not be able to experience hypnotic phenomenon “on demand” in a laboratory setting, there is a possibility that this population can achieve a state of hypnosis under the conditions that are most appropriate for them.

Since need for cognition and need for affect have proven to be predictors of susceptibility to persuasive messages, and persuasion and hypnosis have been linked via the field of advertising and marketing, there was reason to believe that need for cognition and or need for affect would have a relationship to hypnotic susceptibility. This however was not true at this time.

While persuasion and hypnosis share some similarities they are also different as well. Makosky (1985) stated that prestige is a technique in persuasion based on the premise that you should buy or do something because some well-known person makes a recommendation. While there is no prestige technique associated with hypnosis per se, a hypnotist must establish and maintain rapport and credibility with his or her client during a session. Without rapport or trust between the client and hypnotist, the hypnotic session is less likely to be successful. Meanwhile marketers and advertisers use celebrities to

establish instant rapport, trust, and credibility with their audiences to maximize the effectiveness of their messages.

Similarly, Makosky (1985) identified words and images as another mechanism used to induce persuasion. These included the use of attractive people in the advertisement, images of positive social situations associated with a product, or incorporating “buzzwords” such as “natural” for food and beauty products. In hypnosis, words and images are the keys to both inducing hypnosis and formulating effective hypnotic suggestions. Hypnotic suggestions that are worded in a manner that are both believable and understandable to the client will be the most effective. Meanwhile imagery is often a part of the hypnotic induction where the hypnotist will ask the client to imagine themselves in a peaceful and relaxing place such as a beach, or a beautiful forest. A hypnotist will also use imagery in delivering hypnotic suggestions. One common way of doing this is to have the client see him or herself in the future having accomplished something that they are hoping to accomplish (i.e. “see yourself in the future having reached your ideal weight”).

Whereas advertisers may use “buzzwords” to facilitate and create action in their audience, a hypnotist will use post-hypnotic suggestions to reinforce suggestions given during the session (i.e. “each and every time you see the color red, you will feel more and more relaxed”).

On the other hand, there are differences between persuasion and hypnosis. In the modality of experiencing persuasion, a persuasive message might be one of a number of events occupying a person’s attentional resources. Because of the continuous flux in the contents of consciousness, the suggestion would not only be in competition with other

sources of stimulation, but might also be the subject of reflective, critical analysis. In contrast, hypnosis fosters an absorbing, unself-conscious processing of information in which a suggestion might play a more pre-dominant role in the mental life of the individual. Because of the diminished competition with other sources of stimulation a suggestion during hypnosis would have greater salience and receive a more intense and enduring focus of attention (Cardena & Spiegel, 1991).

Theoretical Relevance

While no relationships between a need for cognition or a need for affect and hypnotic susceptibility were found, this study nonetheless reinforces some of what hypnosis scholars have believed to be true regarding personality, hypnotic susceptibility, and its psychological mechanisms. At the same time, the results suggest some possible avenues for future research.

There are prevailing schools of thought that hypnosis involves special psychological processes and abilities and that it is aptitude-based. Whether the school of thought is Fromm's (1992) Ego Psychological Theory, E.R. Hilgard's (1973) Neodissociation Theory, or Crawford and Gruzelier's (1992) Neuropsychophysiological Theory; the onset of a hypnotic state occurs by virtue of certain cognitive abilities combining with particular personality characteristics. History has shown us that the characteristics most associated with susceptibility to hypnosis are imaginative involvements, absorption, and fantasy proneness. In this study, those who demonstrated a propensity to enter hypnosis easily and readily did not demonstrate either a need for cognition or a need for affect.

With regard to need for cognition, those individuals who have a high need for cognition are believed to gain enjoyment out of synthesizing, evaluating, and analyzing ideas, thoughts and problems. This study demonstrated that this could prove detrimental to the hypnotic process because it requires individuals to suspend their critical and analytical characteristics and allow for a state of mind and body that is imperviousness to outside noise and events to become prominent. Similarly the personality characteristics which have proven to be the most successful predictors of hypnosis produce a feeling of detachment from one's surroundings and concerns, producing a feeling of passivity in the conscious mind. This conflicts with the active, vigilant, and analytic individual who is processing information to satisfy their need for cognition.

As far as a need for affect is concerned, researchers such as Brown and Oakley (1998) have suggested that an everyday preference for holistic and emotional thought is related to the ability to enter hypnosis. This research refuted that claim. As stated earlier, Gruzelier (1991) found that high susceptibles have imbalances of activity favoring the left hemisphere of the brain. The right hemisphere of the brain however, is believed to be the hemisphere that is dominant for the experience and expression of emotions (Hagemann et al, 2006). Perhaps those individuals who have a high need for affect have some imbalance favoring the right side of the brain that in some way leads to impeding the hypnosis process.

The findings in this study upheld many of the established theories surrounding personality and hypnotic susceptibility. The mechanisms that determined a need for cognition or need for affect were vastly different from the determinants of hypnotic susceptibility in this study. While the researcher thought that examining personality

correlates related to persuasion would prove fruitful, the results of the present study were highly consistent with studies that examined personality correlates of hypnotizability.

Limitations

It is important to acknowledge some of the limitations of this study. The participants used in this study were either current psychology students or employees of a public liberal arts institution. While there is no reason to believe that this population is special in any way, the findings nonetheless may be unique to this sample. Perhaps a more global and diverse population in terms of choice of a major, career, and vocational background would produce a different outcome. Similar college samples have been used in previous studies however so that criticism cannot fully explain the lack of findings in the present study.

In any study that involves hypnosis, the subjects have to volunteer their time and show a willingness to engage in the process. While participation in this study offered the incentive of credit for those participants who were students, they chose to do this study over other studies and related activities. One could claim that there may have been a self-selection biases in that those who may view hypnosis more favorably than those who did not. Participants may be more open to the idea of experiencing hypnosis and were more likely to score high on the hypnotic susceptibility scale. Overall in this sample, the mean score was 6.23 out of 9 on the objective scale of the HGSHS (Shor & Orne, 1962) indicating a group whose range of hypnotizability was skewed to toward the highly hypnotizable end of the scale. Hypnotizability measures are generally thought of as measuring a unitary underlying trait, whereby individuals who score at the low end of the scale (low hypnotizability; typically about 10 to 15 percent of the population) possess

little of this trait; those who score in the midrange (medium hypnotizability; typically 70 to 80 percent) possess a moderate degree; and those who score at the high end (high hypnotizable; typically about 10 to 15 percent) possess a high degree (Woody, Barnier, & McConkey, 2005).

This study was also conducted without the use of a hypnotic induction and three items from the HGSHS (Shor & Orne, 1962) were removed. Shortened versions have proved to be as effective as longer versions in previous studies. In fact, Wheatley and Haidt (2005) used simply the eye close induction, two finger tests, and the post-hypnotic suggestion as a measure of hypnotic susceptibility.

The hypnotic trance was removed because previous research has shown that it was not necessary and that it may increase the risk to participants. Also, the reliability of the HGSHS (Shor & Orne, 1962) was lower than traditionally acceptable for an established measure. Despite these limitations, this study was thorough and rigorous and the results were consistent with previous research.

Future Research

While a need for cognition and a need for affect demonstrated no relationship with being susceptible to hypnosis, the findings in this study present some new and innovative ideas for future research in the field of hypnosis.

This study, along with many of its predecessors, has found that personality is not a good predictor of being susceptible to hypnosis. Perhaps a more beneficial approach would be one that centers on abilities or aptitudes and its relationship to hypnotic susceptibility. For example, would there be any relationship between Gardner's (1983, 1999) multiple intelligences theory. This theory contends that there are at least eight

independent ability domains: linguistic, spatial, logical-mathematical, interpersonal, intrapersonal, bodily-kinesthetic, musical, and naturalistic. In his original book, Gardner defined intelligence as the ability to solve problems or to create products that are valued within one or more cultural settings (Furnham et al, 2002). Perhaps the abilities associated with these varied intelligences, when measured with hypnotic susceptibility, would lend additional support to the notion of hypnosis as an aptitude-based phenomenon.

Similarly, West (2003) examined hypnotic susceptibility and academic achievement. Despite the fact that her preliminary study found significant negative correlations between academic achievement and hypnotic susceptibility, the author acknowledged several limitations to her study. Because there is evidence pointing to the fact that hypnotic susceptibility may be aptitude-based, then this could be an opportune time to rekindle research that looks at academic performance and hypnotic susceptibility.

One of the most effective uses of hypnosis is in its ability to produce new behavior patterns. A hypnotic suggestion that is effectively worded can teach someone how to become a non-smoker, to lose weight, to exercise regularly, and so forth. Learning styles are based on the idea that people demonstrate consistencies in their preferences for particular ways of acquiring and processing information (Moran, 1991). Felder & Silverman discuss a four-factor model with bipolar dimensions that features active-reflective, sensing-intuitive, visual-verbal, and sequential-global. Research that examines these learning styles for a relationship to hypnotic susceptibility could help hypnotists craft and phrase their hypnotic suggestions to the learning style of their client.

Finally, there is a school of thought that was discovered and taught by Kappas (2001) that recognizes two distinct types of suggestibility. They are physical and emotional suggestibility. According to Kappas (2001) human behavior has led us to recognize that everyone is suggestible to something; some to physical sensations, others to emotional stimuli, still others to environmental stimuli, and some to all three.

The physically suggestible subject will respond to any direct, literal suggestion affecting his or her body, but will not respond to suggestions affecting his emotional behavior. On the other hand, the emotionally suggestible subject will respond to all suggestions affecting his emotional behavior, but will not respond to suggestions affecting his physical body of physical movements. This type of subject does not respond well to direct, literal suggestions, but is very responsive to inferred suggestions). In essence, suggestibility is a person's hypnotic personality, determined by all of the conditioning and all of the experiences they have had throughout their life, particularly the experiences of the first six to eight years of their life (Kappas, 2001).

Neither the concept of physical suggestibility nor emotional suggestibility has been examined by academia in a laboratory setting. In an effort to extend what this study attempted to do, future research on the concept of emotional suggestibility and a potential relationship to need for affect could prove worthwhile. Given the previous research regarding need for affect in the presence of persuasion, an established foundation is there to build upon. If those individuals who have a need for affect are most receptive to persuasion when the message is of an affect-nature then it would be interesting to see if those who are high in need for affect are most responsive to hypnotic suggestions when the suggestion is inferred rather than direct.

Conclusion

As Fromm (1992) noted, hypnosis is a wondrous, many splintered thing. Despite the results of this study, a unique contribution was made to the research on personality and hypnotic susceptibility. Never before had a need for cognition or need for affect been examined in terms of a relationship with susceptibility to hypnosis. While no relationship was found, the results were consistent with past research on personality and hypnotizability. The results of this and previous studies indicated that a different path, perhaps one that examines hypnosis as ability, would prove more fruitful.

Finding correlates of susceptibility to hypnosis remains relevant because hypnosis is a tool that can be used in treating addictions, ailments, and many other concerns. An even greater understanding by practicing hypnotists of the aptitudes that an individual brings with them to the hypnosis session will help hypnotists, clinicians, psychologists and psychotherapists achieve an even greater success rate with their clients. Further exploration of the predictors of hypnotic susceptibility may help this valuable tool become even more beneficial and wide-reaching to help enhance and improve the lives of others.

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