

THE EFFECTS OF HYPNOTIC EGO STRENGTHENING
ON SELF-ESTEEM

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Abstract

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Enhancing self-esteem may have significant therapeutic value, but little research has been done on the application of hypnotic ego strengthening for this purpose. This study examined the effects of two procedures intended to enhance self-esteem: one in which ego strengthening suggestions were read verbatim to participants after a hypnotic induction (ES), and one in which the same suggestions were read to participants without a hypnotic induction (PT). Each participant attended two sessions one week apart. During the first session, participants ($n = 33$) were administered the Stanford Hypnotic Clinical Scale (SHCS; Morgan & Hilgard, 1975) to determine hypnotizability, and the State Self-Esteem Scale (SSES; Heatherton & Polivy, 1991) to determine a pre-test indicant of self-esteem. They were then assigned to either the control (PT) or experimental (ES) condition using their SHCS scores to balance the groups for hypnotizability. Participants assigned to the PT group ($n = 17$) were read an ego strengthening script used in Lavertue, Kumar, and Pekala's (2002) study without a hypnotic induction or hypnotic suggestions. Participants assigned to the ES group ($n = 16$) were first administered a hypnotic induction and then read the same ego strengthening script with hypnotic suggestions intended to enhance ego strengthening. Finally, participants in both groups were administered the Phenomenology of Consciousness Inventory (PCI; Pekala, 1982/1991) as a measure of subjective hypnotic depth during the ES or PT procedure. During the

second session, participants returned to fill out the SSES a second time. Improvements in self-esteem were determined by measuring the differences between pre-treatment SSES scores and post-treatment SSES scores. Results revealed that both groups demonstrated significant average increases in SSES scores, and the hypnotic induction group showed significantly higher post-treatment SSES scores than the suggestion only group. These findings indicate that although ego strengthening suggestions alone can result in higher self-esteem, including a hypnotic induction with such suggestions increases the effect.

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Dedication

This thesis is dedicated to all students who succeed
in spite of great obstacles. Your hard work and
commitment is an inspiration to others.

CHAPTER ONE

INTRODUCTION

Among the factors that affect therapeutic outcomes, there is reason to believe that self-esteem may play a particularly significant role. Mann and colleagues (2004) for example suggest that self-esteem may be a basic feature of mental health and a protective factor that contributes to better health and positive social behavior. They further suggest that high self-esteem is involved in personal achievements, success, life satisfaction, and the ability to cope with serious diseases such as cancer. Straface (2004) also suggests that high self-esteem people may be less socially isolated, less exploitative or hostile-dependent with others, better able to tolerate stress, less anxious, less sensitive to criticism, and may attend better to personal values. Seligman (1995) goes further in promoting the benefits of self-esteem, suggesting that an *exaggerated* sense of self-worth may be a normal aspect of human thought and may facilitate mastery and lead to better mental health.

Conversely, Straface (2004) suggests some disadvantages associated with *low* self-esteem such as dependency, the need for approval, helplessness, apathy, feelings of powerlessness, isolation, withdrawal, submissiveness, and compliance. He further suggests that a tendency to denigrate others, to settle for employment that is less suited to one's needs and abilities, and to accept criticisms from others as true are more drawbacks. Indeed, Mann and colleagues (2004) suggest that low self-esteem goes hand-in-hand with maladaptation, positing that it plays a role in depression, anxiety, anorexia nervosa, bulimia, violence, substance abuse, and high-risk behaviors. Mruk (1995) also suggests that low self esteem has a connection with various personality disorders such as

anti-social personality disorder, avoidant and dependent personalities, and compulsiveness, and further comments that “virtually every major study, theory, or article on self-esteem notes, finds, or discusses a link between self-esteem and anxiety” (p. 77).

Recent research supports these contentions. In three experiments Greenberg and colleagues (1992) concluded that heightened self-esteem served to buffer participant anxiety. Higgins (1987) found that low self-esteem is associated with depressive symptoms such as guilt and lack of efficacious beliefs. Hokanson and colleagues (1989), in a study of 119 college students, suggest that low self-esteem may be a risk factor for general psychopathology in college populations. In a 2004 study, Cheng and Furnham found that self-esteem was a powerful correlate of happiness among 256 teen and college-age students.

Other recent studies found trends among much broader samples. Schmitz, Kugler, and Rollnik (2003) analyzed data from the National Comorbidity Survey and found a significant relationship between low self-esteem and depression. Trzesniewski and colleagues (2006) analyzed prospective data from the Dunedin Multidisciplinary Health and Development Study and concluded that low self-esteem adolescents had poorer mental and physical health, worse economic prospects, and engaged in more criminal behavior during adulthood in comparison to high self-esteem adolescents.

Some research has looked at the potential benefits of psychotherapeutic enhancement of self-esteem. Philpot and Bamberg (1996) found that participant rehearsal of positive self-statements and restructured (i.e. more adaptive) negative self-statements significantly increased participant self-esteem scores and at the same time significantly

reduced depression scores. Also, in studying the effects of self-esteem on depression, Fennell and Zimmer (1987) found that short-term improvement in depressed mood occurred in participants who spent 30 minutes “focusing on positive aspects of the self-concept” (p. 22). Smith and Glass (1977) in a meta-analysis of 400 outcome studies concluded that the greatest overall benefit from all forms of psychotherapy were reductions in anxiety and increases in self-esteem.

Findings such as these may explain the appearance of an eclectic mix of self-esteem enhancement programs in the middle 1980s that were based on humanism, behaviorism, cognitive psychology, and combinations thereof, and were applicable to a variety of populations (Mruk, 1995). The benefits of improved self-esteem have apparently not been overlooked by psychotherapy practitioners or by the general public.

In spite of this considerable attention, psychotherapeutic techniques for increasing self-esteem have generated relatively little research (Straface, 2004). This is an unfortunate oversight. Given the hypotheses and findings presented above, such research could lead to interventions for improving the lives of clinical populations and make important contributions to the field of psychotherapy.

And while many intervention methods that positively impact self-esteem have been developed, one method in particular has been largely overlooked by both researchers and the general public. It is a technique specifically designed to take advantage of individual’s natural hypnotic talents, and could potentially provide a powerful tool for increasing self-esteem for those with high hypnotic capacity. The technique is known as *ego strengthening*.

According to Lavertue, Kumar, and Pekala (2002), little systematic research

supports the use of ego-strengthening procedures specifically for improving self-esteem. Nevertheless, there have been some findings that suggest its potential. McNeal and Frederick (1993) for example note that the benefits of ego strengthening are often viewed as improved therapeutic alliance, heightened insight, increased clarity of thinking on the client's part, and improved self-esteem, and Straface (2004) also suggests that self-esteem is a product of high ego strength.

In an experimental vein, Spencer and colleagues (unpublished) found that ego strengthening and self-hypnosis protocols resulted in an increase in mean self-esteem scores for 32% of participants. Lavertue, Kumar, & Pekala (2002) expanded on this work and concluded that an ego strengthening hypnosis protocol was effective in improving self-esteem for high-hypnotizable participants.

Beyond the research, another motive for examining the effects of ego strengthening is its unique hypnotic aspect. Havens and Walters (1989) posit that hypnosis enhances all forms of psychotherapy on three levels: (a) from the relaxed trance state alone, patients learn from whatever their unconscious minds have to offer; (b) through the absorption aspect of hypnosis clients may gently focus on their problems while their own inner resources are emphasized by the therapist as the therapeutic mechanism; and (c) by direct hypnotic therapeutic suggestions from the therapist, which Havens and Walters believe are more likely to be accepted and acted on by subjects in a hypnotic trance state. The potency of direct hypnotic suggestions has also been illustrated by Mallott, Bourg and Crawford (1989), who found that highly hypnotizable subjects more strongly agreed with the communications of the therapist and offered fewer counterarguments than those who were poorly or not hypnotizable. In fact, increased

response to suggestion is commonly cited as a central feature of hypnosis (e.g. Barabasz & Watkins, 2005; Holroyd, 1992; Van Dyck & Spinhoven, 1994). Greene (1973) suggests that this may be true because hypnotic subjects are more focused and attend better to the hypnotist's arguments.

Hartland (1971) first saw the potential of applying hypnosis to enhance self-esteem, and was the first to label the technique "ego strengthening." His method involved Havens and Walters (1989) third level of hypnotherapeutic effectiveness by making direct suggestions such as "you will no longer dwell nearly so much upon yourself and your difficulties . . . your nerves will become stronger and steadier . . ." (p. 149). Other therapists such as Fromm (1965) and Gardner (1976) utilized the second level approach by suggesting positive visual imagery to hypnotized subjects, such as completing a very difficult task. This approach is intended to instill self-efficacy by providing subjects with a sense of accomplishment. Van Dyck and Spinhoven (1994) came to two provisional conclusions regarding these approaches: (a) ego-strengthening hypnotic procedures are aimed at achieving cognitive change so that the patient feels less demoralized and can find more and better solutions to their problems; and (b) the underlying cognitive processes between ego strengthening and comparable non-hypnotic procedures are probably not identical. Much like Havens and Walters (1989), they reason that this latter provision is because a hypnotic context and high hypnotizability may lead to an increased response to suggestion on the part of the client, and communications from the therapist may then be received less critically.

It appears therefore that hypnotic interventions may offer special advantages over other interventions in the therapeutic enhancement of self-esteem, particularly for highly-

hypnotizable individuals.

Although limited, the research and conjectures presented here makes a tentative but worthwhile beginning in the investigation of ego strengthening and its effects on self-esteem. Given these findings and related theoretical conjectures, further study in this area appears warranted and could help to illuminate self-esteem interventions as a whole and ego strengthening in particular. For those of high or even moderate hypnotic capacity, ego strengthening has the potential to be a valuable option in alleviating distress and promoting positive self-esteem. It is therefore the purpose of this study to further examine the connection between hypnotic ego strengthening protocols and self esteem by expanding on the work of Lavertue, Kumar, and Pekala (2002).

Hypothesis

The primary hypothesis of this study is that the group exposed to hypnosis will show significantly ($\alpha = .10$) higher self-esteem scores in contrast to the suggestion-only group at post-test. This hypothesis was generated on the basis of the theories and literature reviewed here.

CHAPTER TWO

LITERATURE SURVEY

Many theorists suggest ways in which ego strengthening may be connected to increased self-esteem. According to Carich (1990), ego strengthening reinforces positive attributes of behavior and emotions through repetition, and this reinforcement may help a person change his/her self-perception. This change in self-perception may also include a change in self-esteem. Mann and colleagues (2004) theorize self-esteem to be a component of the much broader construct of *self-concept*, and also consider concepts such as self-perception to be equivalent to self-concept.

Rosenberg and Owens (2001) define self-concept as “the totality of the individual’s thoughts and feelings about the self” (p. 401) and Mann and colleagues (2004) define it as “the sum of an individual’s beliefs and knowledge about his/her personal attributes and qualities” (p. 357). Carich (1990) also defines self-perception similarly to self-concept, describing self-perception as simply the “way a person sees oneself” (p. 499). If self-perception can be considered synonymous with (or at least similar to) self-concept, then positive changes in self-perception/self-concept through ego strengthening may also lead to increased self-esteem.

This leads to the logical next question: exactly what mechanisms of ego strengthening lead to positive changes in self-concept and therefore self-esteem? This question is not an easy one to answer as ego strength definitions tend to vary across theoretical orientations. Straface (2004), for example, concedes that ego strength is difficult to conceptualize, as it remains a highly abstract and multi-faceted concept.

However, he does offer a definition based on psychoanalytic theory. Per Straface (2004), ego strength is the ability of the ego to deal with external reality while balancing it with the demands of both the id and superego. In other words, ego strength keeps the mechanisms of the mind running smoothly by minimizing intrapsychic conflict. Lavertue, Kumar, and Pekala (2002) express a similar view. In citing Calnan (1977), they describe ego strength as “the ability to adapt to external demands and to adjust to internal demands” which “increase an individual’s ability to cope with or adjust to difficult environmental demands” (p. 2). Other definitions of ego strength are derived from cognitive/behavioral theory, ego-state theory, and Milton Erickson’s clinical work in hypnotherapy, and involve such mechanisms as giving executive control of the personality to more positive aspects of the self, and evoking unconscious natural resources (McNeal & Frederick, 1993). Although there is a diversity of views, the common thread running through them is an increased ability of individuals to cope with both internal and external stressors and therefore an increased ability to resolve distress, anxiety, and associated emotional difficulties, and to function more adaptively.

Straface’s (2004) psychoanalytic definition of ego strength is consistent with a definition of self-esteem proposed by Katz, Rodin, and Davis (1995), which posits that the self-evaluation central to self esteem is concerned with issues of self-acceptance, self-regard, and the degree to which the actual and ideal selves correlate. Among psychoanalytical theorists the ideal self is also referred to as the *ego ideal*, and is considered part of or closely related to the superego. The ego ideal helps define the criteria for self-worth, and when it’s values are not in conflict with the ego one conforms to one’s own ideals and positive self-regard may result (White, 1963). Katz, Rodin, and

Davis' definition of self-esteem and the psychodynamic definitions of ego strength offered by Straface and White suggest that ego strengthening may function to increase self-esteem by bringing the ideal and real selves into congruence.

Epstein's (1985) cognitive-experiential self theory suggests that people are motivated to maintain schemata of self and the world, and also to maintain a positive self-schema including positive self-esteem. The more numerous and intense personal experiences are, the more they are centrally related to a person's conceptual systems. Once again, there are echoes of the psychoanalytic view of ego strength. Maintenance of a positive self-schema appears similar to positive real and ideal self comparison. According to Epstein, self-esteem corresponds to an assessment of oneself as love-worthy. Presumably, one's ideal self is a self worthy of love, and one may "assesses" one's self as love-worthy by a comparison of one's perceived real self to a love worthy ideal self. Living up to that comparison leads to positive self-esteem in this model. Epstein's emphasis on the power of potent experiences is reflected also in ego strengthening techniques which include suggestions to experience powerful emotions or visualizations.

Another model of self-esteem with ego strengthening implications is Brissett's (1972) social-psychological view, which describes two processes that influence self-esteem: *self-evaluation*, which includes a comparison between the actual and ideal self; and *self worth*, which involves executive control over one's behavior and keeping it consistent with a positive self-concept. This latter aspect resembles the ego-state view of ego strengthening which is described as increasing self-control by allowing more positive aspects of the self to take executive control of the personality. Thus greater self-esteem

may be accomplished by allowing the more positive aspects of the self guide behavior and cognition in ways that are congruent with a more positive self-concept.

Other major theories of self-esteem are worth noting here. Rosenberg's (1965) sociocultural approach suggests that self-esteem is an attitude towards the self created by social and cultural forces. Stanley Coopersmith's (1967) view, which contains prominent behaviorist elements, conceives of self-esteem as a personal judgement of worth learned partly through reinforcement and modeling. The humanist view of Nathaniel Branden (1969) suggests that self-esteem is an innate need fulfilled by living authentically (rationally, responsibly, and honestly). However the theories and techniques of ego strengthening reviewed here do not appear to address (a) social and cultural forces, (b) reinforcement and modeling, or (c) living authentically and rationally. Therefore the psychodynamic view outlined by Straface, the social-psychological view of Brissett , and the cognitive view of Epstein appear to be more consistent with the ego strength conceptualizations presented in this study.

Unfortunately, one gap between these theories of self-esteem and ego strength is apparent. The definitions of ego strength offered here appear to be outcome-oriented, that is, they define ego strength in terms of coping ability. The self-esteem theories presented here however seem to define self-esteem in terms of process and constructs. How can these perspectives be reconciled? The answer may be found in examining how self-esteem and a related concept, *self-efficacy*, may be connected with better coping with internal and environmental demands.

Bandura (1997) describes self-esteem as “concerned with judgments of self-worth” and self-efficacy as “concerned with judgments of personal capability” (p.11). He

asserts that self-esteem and self-efficacy can be both global and specific and, more importantly, that they are different concepts not to be considered synonymous. But he does suggest that they are related by describing self-efficacy as one potential source of self-esteem, and other theorists hold similar views. Owens, Stryker, and Goodman (2001) suggest that low self-efficacy in a role that one highly values may lead to lower self-esteem. Deci and Ryan (1995) speculate that self-efficacy and autonomy (behavior emanating from one's self) are necessary for intrinsic motivation (motivation that is self-created and free of external pressure), a quality of "true" self-esteem.

Other theorists posit that self-efficacy has a more significant relationship with self-esteem: as a factor in self-esteem development. Owens and King (2001) state that "the development of self-worth might be closely associated with an awareness of or concern for self-efficacy" (p. 65). White (1963) concurs, stating that "it would appear that self-esteem has an important root in experiences of efficacy" (p. 131). Finally, there are those that have suggested that self-efficacy is actually a component of self esteem (e.g. Harter, 1985; Branden, 1969), or a subtype (Ervin & Stryker, 2001).

Thus there seems to be a consensus that self-efficacy affects self-esteem. One possible mechanism behind this relationship can be found in Martin Seligman's (1975) learned helplessness theory, which suggests that a lack of control over negative events leads to depression. In this theory, the *explanatory style* of individuals may be an intervening factor. Resilient individuals tend to be more optimistic and explain negative events in external, specific, and temporary terms. Individuals who become depressed however explain their lack of control over negative events pessimistically, including negative judgments of self-worth (Seligman, 1990). Thus a lack of efficacy may lead

individuals to devalue their own self-worth, and high self-efficacy may cause one to feel worthy and important.

Mruk (1995) notes that self-efficacy is a term used specifically by some behavioral researchers to “describe the link between self-esteem and dealing with the challenges of life well” (p. 71). According to Bandura (1997), individuals who feel capable of handling such challenges are *agentic* — able to successfully affect their environment. Bandura further suggests that efficacious beliefs include the ability to control one’s own thoughts and emotions, and hence low self-efficacy may be at the heart of anxiety disorders and obsessive thinking, and, consistent with Seligman’s (1990) view, may also play an important role in depression.

And the relationship between self-efficacy and self-esteem may be reciprocal. Campbell and Lavalley (1993) contend that people with high self-esteem have positive, well articulated views of the self, and people with low self-esteem have neutral, uncertain, inconsistent, and unstable views of the self. This suggests that high self-esteem people may know themselves better, a characteristic which, according to Mruk (1995), may allow them to better tolerate internal differences and pressures. The transactional model of Lazarus and Folkman (1984) suggests that high self-esteem (along with other personal factors) can buffer stress by mitigating appraisal of threats and aiding in the selection of adaptive coping strategies. It is not difficult to imagine how being aware of one’s own capabilities, viewing oneself positively, experiencing less stress, and being able to more effectively select coping strategies could promote a sense of efficacy.

Thus high self-efficacy and self-esteem may improve the ability to cope with life’s challenges, both internal and external, which also appears to be a quality of ego

strength according to its outcome-oriented definitions. The literature presented here therefore suggests that self-efficacy, self-esteem, and ego strength are interrelated, and that changes in one element of this system may influence the other two.

The focus of the current study is on the relationship between ego strengthening and self-esteem only. Although self-efficacy is not examined as a dependent variable, its inclusion in the discussion is relevant not just theoretically, but because many ego strengthening techniques (as discussed above) clearly contain elements that promote efficacious beliefs. The technique used in the current study, developed by Ron Pekala and V. K. Kumar (1999; Appendix A), is an example, containing suggestions such as:

You will see any setbacks and failures as only stepping stones to your betterment. Any failures and setbacks will be seen as learning experiences from which you draw new ideas and strategies to become a better and a more creative problem solver, to become a better person and to make this world a better place. Failures and setbacks will only renew your sense of meeting new challenges, new problems to be solved, and give you new feelings of energy and feelings that you can do things better and excel in whatever you do. At times of failures and setbacks, you will remind yourself that Thomas Edison failed 1000 times before he succeeded in inventing the light bulb. You will remind yourself that every failure is a step towards progress with new plans and strategies and a renewed sense of energy, optimism, and creativity (p. 5).

While it would be interesting to also examine self-efficacy in the current study, it was decided by this investigator that doing so would probably be unfeasible and

so will have to wait for another time.

Lavertue, Kumar, and Pekala's (2002) research was chosen as a model for the current study because of its recency and thoroughness in accounting for intervening variables. Their study was done in two sessions with participants tested in groups of up to 70 at a time. Groups were randomly assigned to either the (experimental) ego strengthening procedure (*ES*) or the (control) progressive relaxation procedure (*PR*), and both groups were kept to approximately equal size.

In both conditions, participants were informed in advance that (a) the purpose of the study was to examine the relationship between aspects of personality and hypnotizability; (b) that they would first complete some questionnaires and then experience a hypnotic procedure during which they will receive suggestions for relaxation to help them cope better with everyday situations; (c) following the procedure they will be asked to fill out another questionnaire; (d) they will then experience a standard hypnosis test when they return the following week and complete some more questionnaires. During these initial instructions references to self-esteem were intentionally omitted so that the instructions could be suitable for both experimental and control conditions, and the word "hypnosis" was used to describe both conditions to control for expectancy effects.

In week one, the participants filled out the Marlowe-Crowne Social Desirability Scale (MCSDS; Crowne & Marlowe, 1960), the Therapeutic Resistance Scale (TRS; Dowd, Milne, & Wise, 1991), the State Self-Esteem Scale (SSES; Heatherton & Polivy, 1991), and the Beck Depression Inventory II (BDI-II; Beck, Rush, Shaw, & Emery, 1979). They were then administered the experimental or control protocols, read verbatim

by the experimenter. Included in the protocols near the end were instructions for participants to simply relax and be aware of the hypnotic state they were experiencing for two minutes. After this period the experimenter read instructions to the participants to take another minute to make a mental note of what they were thinking, feeling, and experiencing during those two minutes of quiet awareness (known as the “sitting quietly” period). These instructions were given as a precondition for completing the Phenomenology of Consciousness Inventory (PCI; Pekala, 1982/1991), which requires participants to answer questions regarding their hypnotic trance-related experiences during the control or experimental procedure. The participants then filled out the PCI after the intervention protocol was completed.

In week two both groups first completed the SSES (Heatherton & Polivy, 1991) and the BDI-II (Beck, Rush, Shaw, & Emery, 1979), and were then administered the Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS:A; Shor & Orne, 1962). The HGSHS:A was modified with the above PCI-related instructions given after the eye catalepsy task but before the post-hypnotic suggestions and amnesia instructions. After the HGSHS:A was administered the amnesia item, the PCI (Pekala, 1982/1991), and the remaining 11 items of the HGSHS:A were completed.

In the current study, some instruments used in the Lavertue, Kumar, and Pekala’s (2002) study were excluded for the following reasons: (a) limitations in time and resources restricted the complexity of the current study; (b) the original study also examined depression as a dependent variable, which was not an outcome of the current study; and (c) some of the variables measured in the Lavertue, Kumar, and Pekala study were not found to have a moderating effect. For example, the TRS (Dowd, Milne, &

Wise, 1991) was used to measure participant's level of opposition toward any therapeutic intervention, however Lavertue, Kumar, and Pekala examined their data and concluded that "change in . . . self-esteem scores were unrelated to resistance to therapy (TRS) scores" (p. 20). Thus there was reason not to include this instrument beyond those of simple constraints in time and resources.

Also in the Lavertue, Kumar, and Pekala (2002) study the MCSDS (Crowne & Marlowe, 1960) was used to measure the possible intervention of demand characteristics. Although the MCSDS was also excluded from the current study primarily due to limitations in time and resources, another reason is that (as with participant resistance to therapeutic interventions) Lavertue, Kumar, and Pekala concluded that improvements in self-esteem scores in their 2002 study were probably not related to demand characteristics effects. As the current study follows many of their procedures, their findings suggest that using the MCSDS scale might again fail to demonstrate moderating effects of demand characteristics.

Furthermore, Orne (1962) suggested the use of a psychological placebo as an effective control for demand characteristics effects. Participants in the current study were lead to believe that both experimental and control conditions were hypnotic, thus the control group was provided a psychological placebo.

These rationales should not be misinterpreted as a dismissal of possible demand characteristic effects in the current study. Orne (1962) asserted that "demand characteristics cannot be eliminated from experiments; all experiments will have demand characteristics, and these will always have some effect" (p. 779). This is assumed to be true for the current study as well.

Lavertue, Kumar, and Pekala (2002) also used the HGSHS:A (Shor & Orne, 1962) to measure hypnotizability in participants, administering it in the second session. However, they suggested that in future replications of their research better results may be achieved with interventions done individually. Therefore, in the interest of improving the validity of findings, as well as in the interest of more convenient research methods, the current study replaced the HGSHS:A with the Stanford Hypnotic Clinical Scale (SHCS; Morgan & Hilgard, 1975). This briefer scale allowed participant hypnotizability to be tested in the same session with the experimental and control interventions and on an individual basis. Furthermore, individual implementation of hypnotic testing in the current study may have increased rapport between the hypnotist and participants, and such rapport has been correlated with hypnotic depth (Lynn, Snodgrass, Rhue, Nash, & Frauman, 1987). This supports the view that an interpersonal relationship with the hypnotist is an important determinant in subjects reaching a hypnotic altered state of consciousness (e.g. Barabasz, 2005). Finally, the current study implemented the measure of hypnotizability in the first session (prior to the intervention protocol) instead of the second in a effort to address the *plateau effect*, which suggests that for many people an initial hypnotic induction is necessary to reach greater hypnotic depths in subsequent inductions (Perry, Nadon, & Button, 1992).

What remains after these alterations is a research design which preserves core aspects of the Lavertue, Kumar, and Pekala (2002) study. Lavertue, Kumar, and Pekala used the PCI (Pekala, 1982/1991) to assess participant's subjective experience of hypnotic trance during the control and experimental interventions. This was done by extracting the scores of specific PCI (Pekala, 1982/1991) dimensions, multiplying them by fractions in

order to achieve weighted scores, adding these scores together, and then subtracting a constant in order to predict participant HGSHS:A (Shor & Orne, 1962) scores. This method was first developed by Pekala and Kumar in 1984, and termed the *pHGS* (predicted Harvard Group Score) or the *hypnoidal* score (see Appendix C for the exact formula). The current study is also concerned with measuring levels of hypnotic depth, and therefore also applied this method by calculating hypnoidal scores and correlating them with mean pre- and post-intervention SSES (Heatherton & Polivy, 1991) score differences to assess whether or not pHGS scores could reliably predict changes in participant's self-esteem. If such an indicant showed a significant positive correlation with differences between pre- and post-intervention SSES scores, it would suggest that improvements in self-esteem were associated with greater hypnotic depth during the interventions. Although Lavertue, Kumar, and Pekala (2002) found that pHGS scores were unrelated to changes in self-esteem as measured by the SSES, in a previous study by Spencer and colleagues (unpublished) pHGS scores were found to be better predictors of changes in self-esteem scores than the HGSHS:A (Shor & Orne, 1962), "supporting the notion that trance levels achieved during an intervention are important to the success of the intervention" (Lavertue, Kumar, & Pekala, p. 4). In another study, Pekala and Kumar (2000) replicated these findings and also found a significant correlation between pHGS scores obtained in reference to the ego-strengthening intervention and participant pre- and post-intervention SSES scores differences during a one-week follow-up for the hypnotic ego-strengthening group. It is hoped therefore that use of the PCI in the current study as an indicator of hypnotic depth and a predictor of self-esteem changes will help to

clarify these inconclusive findings and support, or contraindicate, the use of the PCI as a measure of hypnotic depth during the hypnotic ego-strengthening intervention.

Lavertue, Kumar, and Pekala (2002) also administered the PCI (Pekala, 1982/1991) immediately after the HGSHS:A (Shor & Orne, 1962). Hypnoidal scores were then derived from the raw PCI data and were correlated with HGSHS:A scores. While this may be useful in confirming participant's hypnotizability, it only indirectly suggests hypnotic depths achieved during the intervention protocols. Considering the demonstrated validity of the SHCS (Morgan & Hilgard, 1975), use of the PCI in this manner seemed unlikely to add meaningful support to the experimental hypothesis of the current study, and therefore the PCI was only administered in reference to the intervention and not the SHCS.

The primary focus of the current study was to measure self-esteem as a dependent variable. This too was an important focus of the Lavertue, Kumar, and Pekala (2002) study and the instrument they used for this purpose, the SSES (Heatherton & Polivy, 1991), was also included in the current study as a measure of self-esteem.

The experimental and control group design was also preserved from the Lavertue, Kumar, and Pekala (2002) study, however a different control protocol was used in the current design. In their study, control-group participants were administered a progressive relaxation procedure without ego strengthening suggestions. However Lavertue, Kumar, and Pekala did not state a specific reason for this choice other than the need for a control procedure. As the current study was particularly concerned with the moderating effect of hypnosis, it was decided to implement a control procedure which differed from the experimental procedure only in the absence of a hypnotic induction and deepening

suggestions. Both procedures in the current design used the ego strengthening script of Lavertue, Kumar, and Pekala's (2002) study, but all hypnotic induction language and deepening suggestions were removed from the control protocol. While this is no guarantee that hypnotic trance was achieved by all experimental-group participants or avoided by all control-group participants, it was assumed that the inclusion of a hypnotic induction and deepening suggestions would increase the likelihood of participants reaching a hypnotic trance state in the experimental condition.

The same verbal informed consent instructions were used as in the Lavertue, Kumar, and Pekala (2002) study, with references to self-esteem omitted to make the instructions suitable to both control and experimental conditions. As in their study, the word "hypnosis" was used for both the control and experimental conditions to create equal expectancy effects in both participant groups.

Finally, Lavertue, Kumar, and Pekala (2002) examined pre-intervention SSES (Heatherton & Polivy, 1991) scores for all participants to determine if initial levels of self-esteem were related to SSES score outcomes. This relationship was also examined in the current study. Lavertue, Kumar, and Pekala's method was to divide initial SSES scores into three groups: scores falling at or below quartile one were designated as low self-esteem, those at or above quartile three were designated as high self-esteem, and those between quartiles one and four were designated as medium self-esteem. In interpreting their post-intervention data, they concluded that participants with the lowest initial self-esteem scores reported the greatest self-esteem increases. The current study applied a somewhat different method: initial SSES scores closest to or below the 33rd percentile were designated as low self-esteem, scores between that point and the score

closest to the 66th percentile were designated as medium self-esteem, and finally the remaining scores above the 66th percentile were designated as high self-esteem. In this way initial self-esteem scores could be better evenly divided into thirds. However, this decision was not made on the basis of population norms.

CHAPTER THREE

METHOD

Participants

Participants consisted of volunteers from the Washington State University community in Pullman, Washington. All participants were recruited through posted flyers and personal contacts. Participants were asked prior to engaging in the study if they had been diagnosed with any DSM-IV-TR (American Psychiatric Association, 2000) recognized disorders by a mental health professional or were currently undergoing psychotherapy. Cases in which participants reported such a diagnosis or treatment were reviewed by thesis committee Chair Arreed F. Barabasz before being approved for participation. Potential participants were also asked in advance about their hypnosis knowledge. Those that reported formal education and/or training in hypnosis were excluded from the study, as such persons could potentially distinguish between the experimental and control conditions more easily than naïve participants.

The study was conducted at the Attentional Processes Laboratory at Washington State University. Thirty-three participants out of 42 completed the study (the remaining participants were lost due to attrition), with an average age of 31.30 years old and an age range of 18 to 66. Fourteen of the participants who completed the study were male and 19 female, with 26 reporting their race as “European-American/Caucasian” (79% of the sample), one participant reporting as “Latino” (3%), one as “Native American”, one as “East Indian”, and four as “Biracial/Multiracial” (12%).

Instruments

Hypnotic depth

The PCI (Pekala, 1982/1991) was used as a measure of participant's subjective experience of hypnotic depth. It is a questionnaire consisting of 53 items completed retrospectively in reference to a stimulus condition and provides scores on Positive Affect (Joy, Love, and Sexual Excitement), Negative Affect (Anger, Sadness, and Fear), Altered Experience (Body Image, Time Sense, Perception, and Meaning), Visual Imagery (Amount and Vividness), Attention (Direction and Absorption), Self-Awareness, Altered States of Awareness, Internal Dialog, Rationality, Volitional Control, Memory, and Arousal. Each item is rated on a seven-point Likert scale ranging from zero to six presented between two dichotomous statements representing either the measured dimension or its opposite (e.g. "I was silently talking to myself a great deal 0 1 2 3 4 5 6 I did not engage in any silent talking to myself"). Participants were instructed in the PCI introduction to select the number closest to the statement that described their subjective experience. Some items presented statements that were opposite of the dimension they were intended to measure and were reverse scored. Higher scores represented a more intense subjective experience of the dimensions measured. Major dimension scores were obtained by totaling their subsumed minor dimension scores and overall PCI scores were obtained by totaling major dimension scores. Both PCI forms 1 and 2 were used and overall scores from these forms were added together. Hypnotic scores were derived from averaging the appropriate PCI dimensions and applying them to

the pHGS formula. These scores were then used as a measure of hypnotic depth, with higher scores assumed to represent greater trance depth.

The PCI (Pekala, 1982/1991) has been demonstrated to have both discriminant validity and adequate reliability (Pekala, 1991). In assessing the reliability of the PCI, Pekala (1982/1991) determined coefficient alphas of PCI dimensions and subdimensions from administration of the PCI to a total of 553 participants across three stimulus conditions. Across the “eyes open” condition (n = 110), coefficient alphas ranged from .92 (Sexual Excitement) to .69 (Altered Time Sense). Coefficient alphas across the “eyes closed” condition (n = 233) ranged from .91 (Sexual Excitement) to .52 (Altered Body Image). For the hypnotic third condition (n = 210) the coefficient alpha ranged from .87 (Altered State of Awareness) to .53 (Fear). A one-way ANOVA was performed for all PCI dimension and subdimension scores between three groups of participants experiencing the same stimulus condition and no significant differences were found. Pattern differences correlating 12 major PCI dimensions of consciousness with each other for these three groups (in the same condition) were examined using a computer program based on the Jennrich (1970) test which statistically compares two independent correlation matrices for significant differences between them. None of the matrices were found to be statistically different from the others (although Pekala suggests that more power was needed to meaningfully interpret these results). In examining these results Pekala concluded that “the Pearson’s r coefficients, difference scores, and coefficient alpha results strongly indicated acceptable reliabilities for the (sub)dimensions of the PCI” (p. 134–135). In assessing the discriminant validity of the PCI, Pekala and Kumar (1986) administered two conditions to 217 West Chester University students: an “eyes

closed sitting quietly” condition and the hypnotic induction procedure of the HGSHS:A (Shor & Orne, 1962). After each condition the participants retrospectively completed the PCI. A repeated-measures multivariate analysis of variance (MANOVA) demonstrated a significant main effect for conditions (eyes closed versus hypnosis) for the 12 major PCI dimensions [$F(12,159) = 36.89, p < .0001$] and also the minor dimensions [$F(14,157) = 29.98, p < .0001$]. The Jenrich test comparing hypnotic and eyes closed conditions demonstrated a chi-square value of 196.2 ($df = 66, p < .001$), “suggesting a significant pattern structure difference between the two conditions” (p. 140). Based on these results, Pekala and Kumar concluded that “the PCI was able to discriminate the [eyes closed] and [hypnosis] conditions on the (sub)dimensions of the questionnaire in the same direction as earlier research as hypothesized” (p. 143).

In the current study, intratest reliability of PCI (Pekala, 1982/1991) scores was determined by calculating a reliability index for each participant. This is a feature integrated into the scoring of the PCI and is computed by dividing the sum of the absolute difference between the aforementioned duplicate item pairs by five. It is recommended by Pekala (1982) that scores of two or above should be considered unreliable, however the highest reliability index found in this study was 1.8. Furthermore, a Chronbach’s alpha analysis was applied to both PCI forms 1 and 2 to determine internal reliability. This analysis produced alpha coefficients of .91 for PCI form 1, and .92 for PCI form 2. For these reasons, all PCI scores were determined to be reliable and were included in the current study.

Self-esteem

The SSES (Heatherton & Polivy, 1991) was used to measure participant's levels of self-esteem in the first and second sessions. It consists of 20 items modified from the Janis-Field Feelings of Inadequacy Scale (Janis & Field, 1959), a widely used measure (Heatherton & Polivy, 1991). The SSES uses a 5-point Likert scale, and is designed to measure participant's current thoughts about their self-esteem. Responses ranged from 1 (*not at all*) to 5 (*extremely*), and were associated with statements reflecting positive self-esteem such as "I feel good about myself" and "I feel as smart as others," or negative statements such as "I feel unattractive." Statements that reflected negative self-esteem were reverse scored. Higher overall scores were assumed to reflect higher states of self-esteem.

The SSES (Heatherton & Polivy, 1991) has previously demonstrated validity and reliability. In developing the SSES, Heatherton and Polivy (1991) found it to have high internal consistency in two studies designed to assess its psychometric properties. In the first study, 428 undergraduate students from the University of Toronto were administered the SSES. A correlation matrix revealed that all items were positively intercorrelated (mean = .36), and the scale demonstrated a high degree of internal consistency (coefficient $\alpha = .92$). In the second study, 102 undergraduate participants from the University of Toronto were administered a variety of measurements [e.g the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), and the MCSDS], including the SSES. Many of the trait and state measures of the various instruments correlated significantly with the SSES. Heatherton and Polivy concluded that

these studies “provide some evidence that the SSES is psychometrically sound” (p. 899). In a third study, Heatherton and Polivy (1991) investigated if the SSES would reflect experimental manipulations of participant’s self-esteem. Participants were subjected to variations of a puzzle-solving task, one of which was a control condition and the remaining three were experimental conditions meant to negatively impact participant’s self-esteem to differing degrees. Participants completed the SSES and a mood checklist following each manipulation. A one-way ANOVA [$F(3,76) = 5.54, p < .01$] revealed that participants in the experimental conditions experienced significantly lower mood than control participants. An examination of the SSES subscales demonstrated significant treatment effects for performance [$F(3,75) = 4.28, p < .008$] and social [$F(3,75) = 3.96, p < .02$] self-esteem, but not for physical appearance self-esteem (which there was no reason to believe that the manipulations would impact). They concluded that “this study shows that the SSES is sensitive to momentary changes in self-esteem that occur as a result of laboratory manipulations” (p. 905).

In the current study a Chronbach’s alpha analysis was conducted for the SSES which produced a coefficient of .91. This analysis determined that the instrument was internally reliable.

Hypnotic capacity

The SHCS (Morgan & Hilgard, 1975) was used to measure hypnotic capacity in participants. It is a 5-item measure of hypnotic tasks progressing from relatively easy (“hands coming together”) to relatively difficult (post-hypnotic amnesia). Tasks are

scored according to observable phenomena (i.e. observing hands coming together within a certain time frame, and observing participants clearing their throats or coughing as a result of a post-hypnotic suggestion) or participant report (e.g. participant description of their experience of regressing to an earlier age). The SHCS is derived from the Stanford Hypnotic Susceptibility Scale, Form C (SHSS:C; Weitzenhofer & Hilgard, 1962) one of the most commonly used measures of hypnotizability (Perry, Nadon, & Button, 1992). The SHCS takes about 20 minutes to administer. A score of one is given for each task successfully performed by the participant, with specific guidelines provided to determine if a task has been successfully performed.

The SHCS (Morgan & Hilgard, 1975) is widely used and has been found to be reliable and valid. In developing the SHCS, Morgan and Hilgard (1975) found correlations between the SHCS and SHSS:C (Weitzenhofer & Hilgard, 1962) of $r = .72$ for total scores and $r = .81$ for items common to both scales, which suggest its validity as a measure of hypnotic capacity.

Procedure

The study was implemented in two sessions per participant one week apart. In the initial session, participants were first tested for hypnotizability using the SHCS (Morgan & Hilgard, 1975), and were then administered the SSES (Heatheron & Polivy, 1991). Based on their SHCS scores they were then assigned to either the experimental ($n = 16$) or control ($n = 17$) group. Groups were matched by SHCS scores to ensure that both conditions contained participants with a similar range of hypnotic responses. Participants

assigned to the experimental group then received the hypnotic ego strengthening procedure (*ES*; Pekala & Kumar, 1999) used in Pekala & Kumar's 2002 study, and participants in the control group received an alternative procedure (*PT*, for "placebo task") which included the same ego strengthening suggestions as the *ES* procedure but without a hypnotic induction or deepening suggestions. Participants were informed that (a) the purpose of the study was to examine the relationship between aspects of personality and hypnotizability; (b) that they would first undergo a hypnotic procedure to test their hypnotic capacity; (c) following the hypnotic procedure they would be asked to fill out a questionnaire; (d) they would then experience a second procedure during which they would receive hypnotic suggestions for relaxation and to help them cope better with everyday situations as well as suggestions to increase their awareness of the experience itself; and (e) they would then fill out another brief questionnaire and be asked to return a week later to fill out a final questionnaire with no further obligations.

In the first session participants underwent either the *ES* or *PT* procedure (read verbatim by the experimenter), and near the end they were given the same instructions as in the Lavertue, Kumar, and Pekala (2002) study required for the administration of the *PCI* (Pekala, 1982/1991) with a one-minute period provided to make a mental note of their experiences during the two-minute "sitting quietly" period which preceded it. After the protocol was completed, they were asked to complete *PCI* forms 1 and 2 in reference to the sitting quietly period.

In week two, participants returned to once again complete the *SSES* (Heatherton & Polivy, 1991). They were then debriefed and any questions they had were addressed.

Validity

Procedures, locations, and instruments were the same for all participants. This was done to help reduce threats to internal validity, as these precautions controlled for location, instrumentation, subject attitude, and implementer threats. Furthermore, effort was taken to read the intervention suggestions with identical tone, pacing, and enthusiasm in order to control for experimenter effects.

CHAPTER FOUR

RESULTS

Complete data was obtained for 33 of the 42 persons who participated in the study. The average pre- and post-intervention SSES mean score for the suggestion only (PT) control group were found to be less than half that of the hypnotic induction experimental (ES) group. A two sample t-test for independent means was performed comparing pre- and post-intervention SSES mean scores between these groups. This analysis revealed a significant ($\alpha = .10$) difference between the ES and PT groups ($t = 1.61$, $df = 24$, $.05 < p < .10$). Additional analyses were performed and are reported below.

One directional, one-sample t-tests were performed on mean pre- and post-intervention SSES (Heatherton & Polivy, 1991) score differences of subjects in the ES and PT groups and in the overall sample, and were all found to be positive and statistically significant. In the suggestion only condition, the mean difference in pre- and post-intervention SSES scores was 2.35 (pre-intervention mean = 77.29, post-intervention mean = 79.65, $SD = 4.53$, $t = 2.14$, $df = 16$, $.01 < p < .05$), and in the experimental condition the mean difference in pre- and post-intervention SSES scores was 5.94 (pre-intervention mean = 73.81, post-intervention mean = 79.75, $SD = 7.74$, $t = 3.07$, $df = 15$, $p < .01$). All participants in the study experienced an average increase in self-esteem scores of 4.09 (pre-intervention mean = 75.61, post-intervention mean = 79.70, $SD = 6.45$, $t = 3.64$, $df = 32$, $p < .01$).

While it appears that condition (PT or ES) had a significant impact in determining self-esteem scores, the hypnotizability of participants, as measured by the SHCS (Morgan & Hilgard, 1975), also appeared to be a factor in self-esteem increases. One-directional,

one-sample t-tests were performed for the high, medium, and low-hypnotizable groups to compare the effect sizes of these groups to a null hypothesis effect size of zero or less. The mean increase in self-esteem scores for highly-hypnotizable participants (SHCS score range of 4 to 5) was 3.88, a statistically significant increase (pre-intervention mean = 75.38, post-intervention mean = 79.25, SD = 2.85, $t = 3.85$, $df = 7$, $p < .01$). The increase for low-hypnotizable participants however (SHCS score range of 0 to 1) was considerably larger and also significant, with an average mean increase in SSES (Heatherton & Polivy, 1991) scores of 7.67 (pre-intervention mean = 75.22, post-intervention mean = 82.89, SD = 9.27, $t = 2.48$, $df = 8$, $.01 < p < .05$). For those in the medium hypnotizable range (SHCS score range 2 to 3) the mean difference between pre- and post-intervention SSES scores was 2.19, a change which did not reach statistical significance (pre-intervention mean = 75.94, post-intervention mean = 78.13)

Consistent with these findings low hypnotizables in the ES group benefited more than all other participants with a significant mean increase in self-esteem scores of 11.0 (pre-intervention mean = 75.40, post-intervention mean = 86.40, SD = 10.89, $t = 2.26$, $df = 4$, $.01 < p < .05$), and medium-hypnotizable participants in the PT group benefited the least with a mean increase in self-esteem scores of 1.89, an effect not statistically significant (pre-intervention mean = 79.56, post-intervention mean = 81.44). Between those two extremes, the second highest increase was found among ES high hypnotizables (5.5), which was significant (pre-intervention mean = 76.25, post-intervention mean = 81.75, SD = 2.08, $t = 5.28$, $df = 3$, $p < .01$). Low-hypnotizable participants in the PT group were third highest, scoring a mean SSES increase of 3.5 which was not significant (pre-intervention mean = 75.00, post-intervention mean = 78.50). Finally, PT high-

hypnotizable participants averaged an SSES increase of 2.25 (pre-intervention mean = 74.5, post-intervention mean = 76.75) and ES medium-hypnotizable participants a mean of 2.57 (pre-intervention mean = 71.29, post-intervention mean = 73.86), changes that were also not significant. These conclusions were also based on one directional, one-sample t-tests.

In the ES group, low-hypnotizable participants produced an average increase in self-esteem scores of 11.0. In examining the relationship of this increase with PCI (Pekala, 1982/1991) dimension scores reported by participants, positive correlations with pre- and post-intervention mean differences in SSES (Heatherton & Polivy, 1991) scores in this group at a statistically significant level included the minor PCI dimension of Sadness ($r = .92, .01 < p < .05$) and its corresponding major dimension, Negative Affect ($r = .92, .01 < p < .05$). For ES high hypnotizables there were no statistically significant correlations between PCI subdimensions and mean differences in pre- and post-intervention SSES scores, however many dimensions in this ES subgroup showed strong correlations (both positive and negative) that did not reach statistical significance. The medium hypnotizable ES group had significant *negative* correlations with SSES mean differences and the PCI dimensions of Altered Perception ($r = -.76$), Joy ($r = -.80$), and Altered State of Awareness ($r = -.83$), with some other relatively strong correlations which also did not reach statistical significance. For a complete list of PCI dimension correlations with SSES scores for the ES subgroups, see Table 1.

In the PT group, high-hypnotizable participants produced a statistically significant correlation between pre- and post-intervention mean differences in SSES (Heatherton & Polivy, 1991) scores and the PCI (Pekala, 1982/1991) minor dimension of Imagery

Vividness ($r = .99$, $.01 < p < .05$). Among PT low-hypnotizable participants, the Time Sense ($r = .99$) and Meaning ($r = 1.0$) minor dimensions, and their corresponding major dimension Altered Experience ($r = 1.0$) produced significant correlations with SSES pre- and post-intervention mean differences ($p < .01$), as did total PCI scores ($r = .95$, $.01 < p < .05$). There was also a significantly negative correlation between SSES mean score differences and the PCI major dimension of Memory ($r = -.97$, $.01 < p < .05$). For PT mediums, no statistically significant correlations were found between mean differences in SSES scores and the PCI dimensions or total scores. See Table 1 also for a complete list of correlations for these groups.

Among all high hypnotizables, only one dimension of the PCI, Time Sense, demonstrated a significant correlation with SSES (Heatheron & Polivy, 1991) pre- and post-intervention mean differences ($r = .70$, $.01 < p < .05$). Low hypnotizables overall showed several significant correlations between the PCI (Pekala, 1982/1991) and SSES pre- and post-intervention mean differences: the Altered Experience major dimension ($r = .76$, $.01 < p < .05$) and corresponding subdimensions Body Image ($r = .82$, $p < .01$) and Meaning ($r = .86$, $p < .01$); the minor dimensions of Love ($r = .74$, $.01 < p < .05$), Joy ($r = .71$, $.01 < p < .05$), and Sadness ($r = .86$, $p < .01$); and the major dimensions of Altered State of Awareness ($r = .83$, $p < .01$), and Volitional Control ($r = -.67$, $.01 < p < .05$). Among all medium hypnotizables there were no significant correlations between PCI dimensions and SSES pre- and post-intervention mean difference scores. Correlating mean differences in pre- and post-intervention SSES scores and PCI dimensions for the entire study sample produced no significant results.

Hypnoidal scores that correlated with mean differences in SSES scores at a significant level were found among all low-hypnotizable participants overall ($r = .76$, $.01 < p < .05$.) and among PT low hypnotizables ($r = 1.00$, $p < .01$). Among all other participants large correlations were found both positive and negative that were however not statistically significant. For a complete listing of these correlations see Table 2, and for the average pHGS (Pekala, 1984) scores found among all groups see Table 3.

The findings regarding the examination of the relationship between initial SSES (Heatherton & Polivy, 1991) scores and self-esteem outcomes were similar to Lavertue, Kumar, and Pekala's (2002) findings. The lowest third in the current study produced a significant SSES pre- and post-intervention mean score of 5.23, ($SD = 9.05$, $t = 2.08$, $.01 < p < .05$) the middle third a significant mean difference of 3.90, ($SD = 3.41$, $t = 3.61$, $p < .01$), and the highest third a mean difference of 2.80 which was not statistically significant. Furthermore, when correlating initial SSES scores with changes in self-esteem the ES group produced a correlation of $r = -.48$, the PT group a correlation of $r = .08$, the low hypnotizables a correlation of $r = -.75$, the medium hypnotizables a correlation of $r = .04$, and the high hypnotizables a correlation of $r = -.13$. The only significant correlation among these was for the low hypnotizable group ($.01 < p < .05$).

CHAPTER FIVE

DISCUSSION

The findings in this study support the hypothesis that ego strengthening procedures can be an effective means of increasing self-esteem. The hypnotic-induction group showed significantly higher post-treatment SSES scores than the suggestion-only group, and the procedure improved self-esteem scores for low, medium, and high-hypnotizable participants. The former conclusion was based on an alpha of .10, which Orne (1964) suggests as an appropriate level for research that reexamines previous findings rather than produces initial evidence, as is the case with this study.

However, some of the results of this study are unclear or contrary to previous findings. To begin with, Lavertue, Kumar, and Pekala concluded in their 2002 study that “while the high hypnotizable participants benefited more from ego-strengthening, the lows benefited more from progressive relaxation” (p. 19). The current study produced very different findings: The low hypnotizables benefited more than the high-hypnotizable participants in both experimental and control conditions, and considerably more so in the experimental condition. This outcome of low hypnotizables receiving greater benefit than participants of high hypnotic capacity appears to be inconsistent with the current experimental hypothesis.

The difference between the results of this study and the Lavertue, Kumar, and Pekala (2002) study may be due to the use of different instruments to measure hypnotizability. The HGSHS:A (Shor & Orne, 1962) tests participants in groups, and in the case of the Lavertue, Kumar, and Pekala study the HGSHS was used to test groups of

up to 70 participants. The SHCS (Morgan & Hilgard, 1975), which was used in the current study, is by contrast administered individually and may have resulted in more reliable assessments (a possibility suggested by Lavertue, Kumar, and Pekala). Furthermore the HGSHS:A does not allow for personal rapport to develop between the hypnotist and subject which, as noted earlier, may influence hypnotic depth. Finally, research has demonstrated that individual scores on the HGSHS correlate with scores of other individuals in close proximity when taking the test, suggesting a social influence variable (Barabasz & Watkins, 2005). In this study, only single participants underwent hypnotic testing with no individuals in close proximity to them undergoing the same procedure.

Another hypothetical explanation for the conflicting findings between the current study and that of Lavertue, Kumar, and Pekala (2002) is that control conditions in these experiments used completely different procedures. The control procedure of the current study included ego strengthening suggestions whereas the progressive relaxation control procedure of Lavertue, Kumar, and Pekala's study did not, and low hypnotizable subjects may have responded more to the ego strengthening suggestions of the current study. The experimental procedures were the same in both studies with the only difference that all participants in the Lavertue, Kumar, and Pekala study attended the same sessions during the same one-week period, whereas those in the current study participated individually and during different one-week periods. Therefore, in the Lavertue, Kumar, and Pekala study social influence may have affected the outcomes of both high- and low-hypnotizable participants.

It is also possible that in the current study improvements in self-esteem were

unrelated to hypnotic depth, or that low-hypnotizable participants somehow achieved greater hypnotic depth than those of high hypnotic capacity as measured by the SHCS (Morgan & Hilgard, 1975). The latter explanation does not appear to be accounted for by current hypnosis theory, however the former explanation does have some theoretical precedents. Hartland (1971) has suggested that deep trance states are not necessary for ego strengthening to be effective, and Stanton (1993) goes further by suggesting that depth of hypnotic trance actually has little influence on hypnotic ego strengthening efficacy. It is possible therefore that hypnotic trance states may aid in ego strengthening outcomes but that *depth* of trance is not a significant factor, and the current findings appear to be consistent with this hypothesis.

Previous findings by Spencer and colleagues (unpublished) and Pekala, Steinberg, and Kumar (1986) suggest that some PCI (Pekala 1982/1991) dimension scores and pHGS (Pekala, 1984) scores would correlate significantly with mean differences in pre- and post-intervention SSES (Heatherton & Polivy, 1991) scores. The assumption was that the pHGS scores could be used to measure hypnotic depth, and that greater hypnotic depth would be associated with greater positive changes in self-esteem. This use of the PCI was suggested in Lavertue, Kumar, and Pekala's (2002) study, as well as in Pekala's *Quantifying Consciousness* (1991). The current study failed to produce a significant correlation between all pHGS scores and all mean differences in SSES scores ($r = .131$), but such correlations were found in two sub-groups of the overall sample: all low hypnotizables and PT low hypnotizables. Some other groups showed strong positive correlations worth noting: PT high hypnotizables ($r = .83$), ES low hypnotizables ($r = .63$), and all high hypnotizables ($r = .51$). One substantial negative correlation was found

among ES mediums (-.71), and all participants in the medium-hypnotizable groups showed a negative correlation of some kind. This suggests that for PT low hypnotizables and low hypnotizables overall, the pHGS was a strong predictor of changes in self-esteem. This may have also been true for the three other groups with substantial positive correlations had a larger sample size been used. Finally, the consistent negative correlations among medium hypnotizables suggest that pHGS scores may be a very poor predictor of changes in self-esteem, however without statistical significance this cannot be stated with any amount of confidence.

It is interesting to note that pHGS (Pekala, 1984) score averages across condition and hypnotizability groups were consistent with what they would be for a valid and reliable indicator of hypnotic depth. All high hypnotizables scored higher (9.22) than all medium hypnotizables (5.85) who scored higher than all low hypnotizables (2.00), and all participants in the ES condition scored higher (8.57) than all of those in the PT condition (2.84).

In a chapter of their new book *Towards a Cognitive-Neuroscience of Hypnosis and Conscious States*, Pekala and Kumar (unpublished, in preparation) suggest that certain dimensions and associated subdimensions of the PCI (Pekala, 1982/1991) correlate with the HGSHS:A and may indicate greater hypnotic depth, and for that reason these dimensions are used to calculate the pHGS (Pekala, 1984). These indicators are: positive correlations with Altered State of Awareness, Altered Experience (Altered Body Image, Altered Time Sense, Altered Perception, Altered Meaning), and Attention (Absorption); and negative correlations with Self-Awareness, Volitional Control, Rationality, and Memory. The current study examined these and other dimensions as they

were related with mean differences in pre- and post-intervention SSES (Heatherton & Polivy, 1991) scores.

Overall, correlations with PCI (Pekala, 1982/1991) subdimensions did not reflect the pattern of hypnotic depth indicators suggested by Pekala and Kumar. None of the dimensions used to calculate the pHGS (Pekala, 1984) correlated at a significant level with either differences between pre- and post-intervention SSES (Heatherton & Polivy, 1991) scores for the entire sample.

However, other dimensions of the PCI (Pekala, 1982/1991) that did correlate significantly with SSES (Heatherton & Polivy, 1991) pre- and post-intervention mean differences suggest experiences that may have been associated with changes in self-esteem. For all high hypnotizables, an altered sense of time appeared to be the one PCI dimension strongly related to changes in self-esteem. For all low hypnotizables several dimensions correlated at a significant level, suggesting that the following experiences were associated with self-esteem changes: bodily feelings expanding into the world; feelings of awe, sacredness, or reverence; feelings of joy and love (but also feelings of sadness); a sense of an extraordinarily unusual or nonordinary state of awareness; and a lack of volitional control. Low hypnotizables in the ES group reported experiencing only sadness at a level that correlated significantly with self-esteem changes, and for medium hypnotizables in the ES group a *lack* of altered perception, a *lack* of joy, an a *lack* of sense of an extraordinarily unusual or nonordinary state of awareness were associated at a significant level with self-esteem pre- and post-intervention mean differences (consistent with the negative correlations between self-esteem mean score differences and pHGS [Pekala, 1984] scores for this group). For PT high hypnotizables, experiences associated

with self-esteem changes were: clear, vivid, and three-dimensional imagery; and possibly an altered sense of time (which approached significance). PT low hypnotizables reported many experiences significantly associated with changes in self-esteem: an altered sense of time; unusual meanings (feelings of awe, sacredness, or reverence); negative emotions such as anger, sadness, and fear; and a lack of ability afterward to remember their experiences during the intervention.

Overall some of the experiences that appear to be consistently associated with self-esteem changes were: an altered sense of time; unusual meanings (feelings of awe, sacredness, or reverence); extraordinarily unusual or nonordinary state of awareness; and various affective states. However, the lack of consistent patterns of correlation between many PCI (Pekala, 1982/1991) dimensions and SSES (Heatherton & Polivy, 1991) pre- and post-intervention mean differences across groups may be a function of the small sizes of these groups.

Some of the results presented here could have been influenced by the demand characteristics of the study as many aspects of the current study could have strongly suggested the experimental hypothesis to the participants. Participants were explicitly told, for example, that they were going to be given hypnotic suggestions that would “help them cope better with everyday situations”. This statement may have conveyed the hypothesis that the application of a hypnotic procedure would produce beneficial results in general areas such as stress reduction, self-efficacy, self-esteem, motivation, et cetera. Other study aspects, such as the ego strengthening suggestions themselves, could have reinforced this perception. Orne (1962) commented on the perception of such clear suggestions, noting that “to the extent that the demand characteristics of the experiment

are clear-cut, they will be perceived uniformly by most experimental subjects” (p.779). Participants could have then also been motivated to confirm the experimental hypothesis as they perceived it by reporting increases in SSES (Heatherton & Polivy, 1991) scores in the second session. This latter aspect is made more likely by the fact that the sample consisted exclusively of volunteer participants. Orne (1962) speculated that volunteer subjects have a greater interest in the outcomes of experiments than mandated participants, and would therefore be more motivated to confirm the researcher’s hypothesis. Indeed, he suggested that the act of volunteering itself is an implicit agreement to comply with the intrinsic demands of the experiment (Rosnow, 2002). This hypothesis has since been supported empirically (Rosnow & Rosenthal, 1997) . However, Barabasz and Barabasz (1992) note that Weber and Cook (1972) identified four types of alternative participant roles: (a) the “good” participant who provides responses that, in their view, confirm the experimental hypothesis; (b) the “faithful” participant, who tends to follow experimental instructions scrupulously; (c) the “negativistic” participant, who provides responses that are not useful to the experimenter (consistent with Masling’s [1966] “screw you” effect); and (d) the “apprehensive” participant, who’s responses suggest fears that he or she will be evaluated in terms of abilities or adjustment based on his or her performance (Crowne & Marlowe, 1964). Therefore it is unclear if all participants were motivated to confirm the experimental hypothesis as they may have perceived it.

And although the effects of demand characteristics could help to explain the overall increase in self-esteem scores, the question remains as to why participants in the experimental group reported greater significant increases than those in the control group.

There is no readily apparent reason for participants to be more motivated to be “good subjects” in the experimental condition than in the control condition if they were unaware of the condition to which they were assigned.

Another factor that may have increased self-esteem scores for the control group is the placebo effect. Told that they were being administered a hypnotic procedure, participants in the PT group may have believed that the procedure they underwent would be effective in improving their self-esteem and therefore they may have shown substantial improvement without reaching hypnotic trace states.

Spontaneous hypnosis could have also played a role. According to Barabasz (2005), hypnotic trance states can occur in the absence of a formal hypnotic induction. This may have occurred with subjects in the PT condition, and could also account for some of the increases in self-esteem scores.

In examining correlations between initial SSES (Heatherton & Polivy, 1991) scores and changes in SSES scores, it seems that for the groups most associated with positive changes in self-esteem, (ES and low-hypnotizable participants), low pre-intervention SSES scores were associated with high increases in self-esteem and high pre-intervention SSES scores with low self-esteem increases. It therefore appears that those scoring the lowest in initial self-esteem scores were largely responsible for the substantial increases in SSES scores found in the experimental group as well as with low-hypnotizable participants. This finding is congruent with Lavertue, Kumar, and Pekala’s (2002) suggestion that participants with the lowest self-esteem would experience the greatest benefit from hypnotic ego strengthening, an assertion that their (2002) findings also support.

Implications

The results presented here suggest that ego strengthening may be an effective treatment for increasing self-esteem, and that including a hypnotic induction with ego strengthening suggestions may be more effective than the suggestions alone. Furthermore, these findings suggest that ego strengthening may be especially indicated for persons who score low on tests of hypnotizability. However previous findings conflict with this last conclusion, although further research may clarify the issue.

Limitations

Although the sample size overall ($n = 33$) demonstrated statistically significant support for the efficacy of ego strengthening, some of the correlational findings between PCI (Pekala, 1982/1991) dimensions, pHGS (Pekala, 1984) scores, and changes in self-esteem scores might require a much larger sample to be meaningfully interpreted. The overall correlation between pHGS scores and SSES (Heatherton & Polivy, 1991) pre- and post-intervention mean differences was small and not statistically significant, and although only some of the sub-groups demonstrated statistically significant correlations between specific PCI dimension scores and mean differences in pre- and post-intervention SSES scores, the small sizes of these groups suggests that such correlations may be found with a much larger sample. Therefore the full picture of the relationship between PCI/pHGS and SSES scores in the current study remains unclear, and may be resolved with substantially larger sample sizes in future replications.

An alternative measure of hypnotic depth might also be helpful in clarifying if trance depth is related to the effectiveness of the ego strengthening protocol. And although the pHGS (Pekala, 1984) average scores failed to consistently predict self-esteem outcomes, their averages across control and experimental groups and groups of low, medium, and high hypnotizables seemed consistent with a valid and reliable measure of hypnotic depth.

Spontaneous hypnosis may have also occurred among control-group participants. This might account for some of the self-esteem gains of the PT group.

Many potential intervening variables, such as participant's expectancies and attitudes about hypnosis, were not controlled for in this study. A more comprehensive study that includes such intervening variables may help to illuminate the current findings.

Lavertue, Kumar, and Pekala (2002) suggested that "a single session of ego-strengthening may be beneficial for some people. But more sessions are likely to be more effective in bringing about a change" (pp. 20–21). This unfortunately was also not considered feasible in the current study. In future research, repeated ego strengthening interventions may produce more meaningful results.

While the influence of demand characteristics was only partly controlled for in the current study, additional controls in future replications might further validate its findings. Aside from the use of the MCSDS (Crowne & Marlowe, 1960), Orne (1962) suggested two other control measures that might be more feasible: "One procedure to determine the demand characteristics is the systematic study of each individual subject's perception of the experimental hypothesis" (p. 780); and furthermore, "in psychological placebo treatments, it is equally important to ascertain whether the subject actually perceived the

treatment to be experimental or control” (p. 782). Thus a simple additional procedure that could help control for demand characteristics effects in future replications would be to ask participants after completing the study which condition they believed they were assigned to and what they believed the experiment was truly all about. This was admittedly a missed opportunity in the current study.

Finally, the non-clinical nature of the sample may make generalizing the current findings to therapy clients difficult. This is an important consideration, as this study was meant to suggest an effective treatment option for those receiving psychotherapy. Furthermore, the majority of the sample consisted of college students (67%) and identified as Caucasian (79%), making generalization to other populations likewise difficult.

Directions for Future Research

Not only might larger sample sizes, more intervening variables of interest, and repeated interventions make for more meaningful future research, some other variations on the current study could produce interesting results. Alternative ego strengthening procedures for example could further address the validity of ego strengthening in general. As Lavertue, Kumar, and Pekala (2002) suggested, variations in time between, and amounts of, SSES (Heatherton & Polivy, 1991) administrations could provide a better idea of the long term effects of ego strengthening as well as their consistency over time. Also, additional measures of hypnotic capacity and self-esteem to establish a pre-

intervention baseline could control for regression to the mean effects and better validate findings.

Finally, the literature presented here suggests that self-efficacy is related to both self-esteem and ego strength. Future research could explore this possibility by including self-efficacy as a dependent variable and examining its relationship to both ego strengthening and changes in self-esteem.

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APPENDIX A

ES PROTOCOL

Self-Hypnosis Protocol with Ego Strengthening Suggestions

By Ron Pekala and V. K. Kumar

[for PSU study 4/15/99]

ES Protocol

Why don't you get comfortable; put your arms and hands in a comfortable position. Just relax. Forget about the other sounds and noises you may hear and let yourself relax. Whenever you are ready, just allow your eyes to close. I'm going to show you how you can use self-hypnosis to help yourself become more the person you want to be.

So let's begin by you becoming aware of your breathing. That's fine. Become aware of your breathing. Let your breathing be deep and regular, slow and deep, deep and relaxed. With each breath that you take, notice how relaxed you can become. Let your breathing be rhythmic and natural and as you inhale and as you exhale, notice how much more relaxed you can become. With each breath that you take, becoming more and more calm and more and more relaxed, as you forget about any sounds or noises you may hear except for my voice. While being aware of your breathing, let yourself relax. More and more deeply, more and more fully relaxed with each breath you take.

You can learn to hypnotize yourself by getting your body deeply and fully relaxed, and then by letting your mind become very, very calm. You can then give yourself suggestions, suggestions to help yourself become more the person you want to

be. What I'm going to do over the next several minutes is teach you how to relax your body by beginning with the muscles of your forehead and scalp and ending with the muscles of your toes, so that your body can become deeply and fully relaxed.

Then I'm going to do an exercise to help you calm your mind, counting back from "10" to "1" so that by the time I get to "1", you will be in a deeply relaxed, self-hypnotic state. And when I count back from "10" to "1", I will ask you to count along silently with me so that when you practice on your own, you'll be able to get into the same deep state.

So let's begin by having you become aware of the muscles of your forehead and scalp. Let the muscles of your forehead and scalp relax. Feel the muscle fibers, your forehead muscles, the muscles there, relax, more and more deeply and fully relaxed with every word that I say. And let the relaxation there now move down across to the muscles of the temples, the muscles around your eyes. Let your eyes relax. Let your eyelids become heavy, very, very heavy, very, very relaxed. So relaxed and at ease you can let the muscles around your eyes become deeply and fully relaxed.

Now feel the relaxation moving down across your cheeks and nose to your chin and jaw. Visualize and feel each and every muscle fiber there relaxing. That's good. With each breath that you take, with every word that I say, feel the muscles of your upper and lower face, your forehead and cheeks, your chin and jaw, relax. More and more relaxed, more and more deeply relaxed as you begin to move into a hypnotic state, a relaxed state, a state in which you will be able to clearly hear me and yet remain deeply relaxed and deeply at ease. So let all of the muscles of your face and head relax.

And now feel that relaxation moving down into your neck and shoulders. Visualize the muscles there relaxing, loosening up; let all tension and tightness in your neck and shoulders just fade and vanish away. Feel wave upon wave of deep relaxation moving from your face and head flowing down into your neck and shoulders. Just relax, deeply relaxed, deeply at ease, deeply relaxed, deeply at ease.

And now feel the relaxation moving down into your upper arms and elbows. Be aware of any tension and tightness that may be there and just relax. Just relax, become deeply relaxed, deeply at ease, deeply relaxed, deeply at ease. Feel wave upon wave of deep, soothing relaxation now moving from your upper arms and elbows down into your lower arms and wrists, your hands and fingers. Let all the muscles, even the ligaments and tendons relax, let all the muscles of your arms and face, neck and shoulders, become more and more relaxed, relaxed and heavy, heavy and relaxed.

Feel the relaxation in your arms and hands now moving back up into your shoulders and down into your chest and upper back. Be aware of any tension and tightness that may be there and let that tension and tightness fade and fade and vanish away. Relax. Just relax. Let the muscles and internal organs, the heart and lungs relax, so that they can work more efficiently and relaxedly. Just relax, feel the relaxation move from your chest and upper back down into your stomach and abdomen, and from there down into your hips and lower back. That's fine, just relax.

Relax the muscles of your hips and lower back, your stomach and abdomen. Relax. Visualize the muscle fibers relaxing, more and more fully so that any and all tension and tightness just fades and fades and vanishes away. Relax. Become fully and deeply relaxed and at ease. Let the muscles and internal organs of your stomach and

abdomen, your hips and lower back, relax, more and more deeply, more and more fully relaxed.

And now feel the relaxation moving into your upper legs, your knees. Be aware of any tension that's there, and let wave upon wave of deep soothing relaxation dissolve away any tension and tightness that may be there. Relax. Just relax. Feel the relaxation move from your upper legs and knees, now down into your lower legs, your ankles, feet, and toes. Relax the muscles there. That's right. Let the muscles of your lower legs, your feet and toes become deeply and fully and totally relaxed. That's good. Feel every muscle fiber in your upper and lower legs, your feet and toes relax, more and more relaxed, more and more deeply relaxed.

Your whole body is now very, very relaxed and at ease. We want your mind to become as calm and quiet as your body is relaxed and at ease. This will help you to enter into a deep hypnotic state. By letting your body become deeply relaxed and letting your mind become calm and at ease, you will then be able to move into a deep hypnotic state, a state you can use to help you become more the person you want to be. By counting from "10" to "1", and calming your mind, you will be able to get into a very calm, quiet, and serene state, a hypnotic state, a self-hypnotic state where you can give yourself suggestions or have images, or use imagery, to help yourself become a better person, to make the world a better place to be.

So I'm going to count from "10" to "1" aloud. I would like you to count along silently with me. With each number that I say, with each number that you say silently to yourself, your mind will become more and more calm, more and more quiet, so that by the time I get to "1", your mind will be very, very calm, and very, very quiet. You will

move into a deep, deep hypnotic state, a self-hypnotic state, a state where you can feel very safe, and very secure, very calm and very at ease. You will move into a deep hypnotic state that many people report feels something like falling asleep, but with the difference that you will clearly hear me. You will always hear me no matter how relaxed, how quiet or sleepy you become.

Here we go: “10” . . . “9”. Becoming more and more quiet, let your mind become more and more still, more and more quiet. “8” . . . “7”. Moving into a deep self-hypnotic sleep where I can give you suggestions, where you can give yourself suggestions to become the person you want to be. “6” . . . “5”. Let yourself go more and more deeply asleep, as your mind becomes more and more quiet, more and more empty, more and more serene. Although deeply asleep you can clearly hear me. You will always hear me no matter how deeply asleep you may become. “4” . . . “3”. Deeper and deeper, always deeper and deeper asleep. “2”. Very, very deeply asleep. Your mind is completely quiet, completely empty, as you go more and more deeply asleep. Feeling safe and secure, safe and secure. “1”.

You are now deeply relaxed. Your mind is very, very calm and very much at ease. As you continue to listen without effort to my voice, you begin to notice a feeling of energy within you building up and becoming more and more prominent. That’s right. Notice those feelings of energy becoming stronger and stronger, stronger and stronger. As I continue to talk you notice those feelings of strength, pride, and energy becoming more and more prominent within you. You feel strong, proud, and energized.

As you feel this wonderful sense of energy within you, you feel a sense of joy that you are now ready to accomplish your goals with renewed feelings of confidence, a renewed sense of ability to deal with the day-to-day problems in daily living. That's right. As I continue to talk, you can feel that sense of inner self-confidence becoming stronger and stronger within you. Be aware of it, feel it grow, feel that sense of self-confidence, of inner self-worth, of increased self esteem becoming greater and greater with each breath that you take, with every word that I say.

Feel that sense of confidence within you that's always been there, but now in the deep hypnotic state you are in, you are able to experience it much more fully and deeply. Experience deeply that sense of renewed confidence, optimism, and creativity surge within you now. A feeling of confidence that you can do things better and excel in whatever you do. You now have a renewed sense of energy and confidence that you can excel and meet new challenges better than ever before. Feel that sense of creative inner strength and inner direction, a life filled with new meaning and important goals to achieve, goals that bring about improvements in your life, community, and the world.

You will see any setbacks and failures as only stepping stones to your betterment. Any failures and setbacks will be seen as learning experiences from which you draw new ideas and strategies to become a better and a more creative problem solver, to become a better person and to make this world a better place. Failures and setbacks will only renew your sense of meeting new challenges, new problems to be solved, and give you new feelings of energy and feelings that you can do things better and excel in whatever you do. At times of failures and setbacks, you will remind yourself that Thomas Edison failed 1000 times before he succeeded in inventing the light bulb. You will remind yourself that

every failure is a step towards progress with new plans and strategies and a renewed sense of energy, optimism, and creativity.

In this deep hypnotic state you are in now, you now begin to see what goals you have to accomplish in the next few days or weeks – some of these goals may have to do with doing better in your studies, others may have to do with improving your health and lifestyle by starting a new program of exercise or giving up old bad habits, and still others may have to do with improving your social and cultural life. I will now pause for one minute and during that time, I would like you to focus on your goals to bring about improvements in your life – goals having to do with your becoming a better student, adopting a more healthy lifestyle, and making your life better generally socially and culturally and enjoy your life more. After one minute I will start talking again to give you more suggestions. **[Pause 1 minute]**

That's good. And as I continue to talk, with you listening effortlessly to my voice, be aware of the contentment, the joy and peace within you now. Imagine and visualize yourself, feel yourself as successful and confident, confident and successful. **(Pause)** Visualize yourself accomplishing your goals, visualize yourself the way you wish yourself to be. **(Pause)** Feel the confidence, the power, the contentment, the self-assurance. **(Pause)** These strong feelings are feelings that you can experience on your own by practicing the self-hypnosis. Using self-hypnosis, as we are showing you right now, you can help yourself become more the person you want to be. By relaxing your body and calming your mind, you can then give yourself suggestions to help become the person you want to be, to help the world become a better place to be.

The feeling of increased confidence is also associated with feelings of warmth and vitality throughout your body. You feel especially warm and relaxed, especially the muscles and tissues of your hands and fingers. That's right, as people relax, a warm, relaxed and deeply at ease feeling can flow throughout your body. Feel how warm and relaxed your body can become. Warm, relaxed, and at ease. Warm, relaxed, and deeply at ease.

I would like you now to focus on the feelings in your hands and fingers, especially the left hand and its fingers. Begin to feel and experience the blood vessels of that hand and the blood vessels of the fingers opening up, relaxing. That's right. Just allow the blood vessels of your left hand to relax and dilate. Feel a sense of warm relaxation moving into your left hand and fingers. Your left hand and fingers are becoming relaxed and warm, warm and relaxed.

If you like, you might try to imagine yourself at the beach, basking in the warmth of the sun, as your whole body becomes warm and relaxed, relaxed and warm. Notice how relaxed, and calm, and at ease you feel. That's right. Feel and imagine yourself at the beach at the shore, or at a lake up in the mountains, and feel the warm sun against your skin, a gentle breeze blowing through your hair, and a deep feeling of contentment, relaxation, and inner self-assurance. Notice how all the worries and problems of the world just seem to fade and vanish away, as your body becomes warm and relaxed, relaxed and warm; as your mind becomes calm and serene, calm and yet with a renewed sense of feeling energized with confidence and creativity.

Return now to the warmth in your left hand and fingers. Feel that warmth moving from there throughout your body, dissolving away the tension and tightness of the body,

dissolving away the problems and worries of the world. You feel warm, relaxed, confident, and creative. Confident, warm, and relaxed. Notice how warm, relaxed, and confident you feel. Feelings of confidence and self-assurance that will stay with you into the hours and days ahead.

You are now very deeply relaxed, very deeply asleep. You are now in a very deep hypnotic state, listening without effort to my voice. Your mind is very still and very at ease. For the next minute or two, I want you to become aware of what it feels like to be in the state you are now in. For the next minute or two, I'm going to stop talking and I want you to just continue to relax and experience what it feels like to be in that deeply relaxed, self-hypnotic, quiet state you are now in. Be aware of what it feels like to be so relaxed and so at ease. And at the end of about two minutes, I will start talking again. Begin now and just enjoy the deeply relaxed state you are now in.

[Pause two minutes. Then begin:]

Just remain calm and relaxed, calm and at ease. Please make a mental note of what you are experiencing, what you were thinking and feeling when I stopped talking, because I will afterwards ask you to complete a questionnaire in reference to your experience at that time. That's right, just take a moment now and make a mental note of what you were thinking, feeling, and experiencing when I stopped talking.

[Pause one minute. Then begin:]

Just remain relaxed and at ease, relaxed and calm. And whenever you want to come out of the state you are now in, as I shall ask you to do shortly, all you'll need to do is count from "1" to "5" silently to yourself, so that by the time you say "5", your eyes

are open, and you are alert, refreshed, relaxed, and at ease. In a few moments I'm going to count from "1" to "5" aloud. I'd like you to count along silently with me. With each number that we say, you will become more and more alert, more and more awake, so that by the time I say "5" aloud, by the time you say "5" to yourself silently, you will be awake, alert, relaxed, and refreshed.

By the time I say "5" your eyes will open, you will be refreshed, relaxed, and at ease. You will remember everything that we said and did here. And the feelings of relaxation and confidence you now have, you will find staying with you into the hours and days ahead.

Here we go. "1" . . . "2". Becoming more and more alert, more and more awake. "3". Waking up more and more, more and more. Becoming more and more alert. More and more awake. "4". Waking up more and more, more and more. "5". Eyes beginning to open, alert, . . . refreshed, relaxed and at ease. Eyes open, alert, refreshed, relaxed, and at ease. Alert, refreshed, relaxed, and at ease.

APPENDIX B

PT PROTOCOL

Why don't you get comfortable; put your arms and hands in a comfortable position. Just relax. Forget about the other sounds and noises you may hear and let yourself relax. Whenever you are ready, just allow your eyes to close.

As you continue to listen without effort to my voice, you begin to notice a feeling of energy within you building up and becoming more and more prominent. That's right. Notice those feelings of energy becoming stronger and stronger, stronger and stronger. As I continue to talk you notice those feelings of strength, pride, and energy becoming more and more prominent within you. You feel strong, proud, and energized.

As you feel this wonderful sense of energy within you, you feel a sense of joy that you are now ready to accomplish your goals with renewed feelings of confidence, a renewed sense of ability to deal with the day-to-day problems in daily living. That's right. As I continue to talk, you can feel that sense of inner self-confidence becoming stronger and stronger within you. Be aware of it, feel it grow, feel that sense of self-confidence, of inner self-worth, of increased self esteem becoming greater and greater with each breath that you take, with every word that I say.

Feel that sense of confidence within you that's always been there, but now you are able to experience it much more fully and deeply. Experience deeply that sense of renewed confidence, optimism, and creativity surge within you now. A feeling of confidence that you can do things better and excel in whatever you do. You now have a renewed sense of energy and confidence that you can excel and meet new challenges

better than ever before. Feel that sense of creative inner strength and inner direction, a life filled with new meaning and important goals to achieve, goals that bring about improvements in your life, community, and the world.

You will see any setbacks and failures as only stepping stones to your betterment. Any failures and setbacks will be seen as learning experiences from which you draw new ideas and strategies to become a better and a more creative problem solver, to become a better person and to make this world a better place. Failures and setbacks will only renew your sense of meeting new challenges, new problems to be solved, and give you new feelings of energy and feelings that you can do things better and excel in whatever you do. At times of failures and setbacks, you will remind yourself that Thomas Edison failed 1000 times before he succeeded in inventing the light bulb. You will remind yourself that every failure is a step towards progress with new plans and strategies and a renewed sense of energy, optimism, and creativity.

You now begin to see what goals you have to accomplish in the next few days or weeks – some of these goals may have to do with doing better in your studies, others may have to do with improving your health and lifestyle by starting a new program of exercise or giving up old bad habits, and still others may have to do with improving your social and cultural life. I will now pause for one minute and during that time, I would like you to focus on your goals to bring about improvements in your life – goals having to do with your becoming a better student, adopting a more healthy lifestyle, and making your life better generally socially and culturally and enjoy your life more. After one minute I will start talking again to give you more suggestions. **[Pause 1 minute]**

That's good. And as I continue to talk, with you listening effortlessly to my voice, be aware of the contentment, the joy and peace within you now. Imagine and visualize yourself, feel yourself as successful and confident, confident and successful. **(Pause)** Visualize yourself accomplishing your goals, visualize yourself the way you wish yourself to be. **(Pause)** Feel the confidence, the power, the contentment, the self-assurance. **(Pause)**

The feeling of increased confidence is also associated with feelings of warmth and vitality throughout your body. You feel especially warm and relaxed, especially the muscles and tissues of your hands and fingers. That's right, as people relax, a warm, relaxed and deeply at ease feeling can flow throughout your body. Feel how warm and relaxed your body can become. Warm, relaxed, and at ease. Warm, relaxed, and deeply at ease.

If you like, you might try to imagine yourself at the beach, basking in the warmth of the sun, as your whole body becomes warm and relaxed, relaxed and warm. Notice how relaxed, and calm, and at ease you feel. That's right. Feel and imagine yourself at the beach at the shore, or at a lake up in the mountains, and feel the warm sun against your skin, a gentle breeze blowing through your hair, and a deep feeling of contentment, relaxation, and inner self-assurance. Notice how all the worries and problems of the world just seem to fade and vanish away, as your body becomes warm and relaxed, relaxed and warm; as your mind becomes calm and serene, calm and yet with a renewed sense of feeling energized with confidence and creativity.

You feel warm, relaxed, confident, and creative. Confident, warm, and relaxed. Notice how warm, relaxed, and confident you feel. Feelings of confidence and self-assurance that will stay with you into the hours and days ahead.

For the next minute or two, I want you to become aware of what it feels like to be in the state you are now in. For the next minute or two, I'm going to stop talking and I want you to just continue to relax and experience what it feels like to be in that deeply relaxed, quiet state you are now in. Be aware of what it feels like to be so relaxed and so at ease. And at the end of about two minutes, I will start talking again. Begin now and just enjoy the deeply relaxed state you are now in.

[Pause two minutes. Then begin:]

Just remain calm and relaxed, calm and at ease. Please make a mental note of what you are experiencing, what you were thinking and feeling when I stopped talking, because I will afterwards ask you to complete a questionnaire in reference to your experience at that time. That's right, just take a moment now and make a mental note of what you were thinking, feeling, and experiencing when I stopped talking.

[Pause one minute. Then begin:]

In a few moments I'm going to count from "1" to "5" aloud. I'd like you to count along silently with me. With each number that we say, you will become more and more alert, more and more awake, so that by the time I say "5" aloud, by the time you say "5" to yourself silently, you will be awake, alert, relaxed, and refreshed.

By the time I say "5" your eyes will open, you will be refreshed, relaxed, and at ease. You will remember everything that we said and did here. And the feelings of

relaxation and confidence you now have, you will find staying with you into the hours and days ahead.

Here we go. “1” . . . “2”. Becoming more and more alert, more and more awake. “3”. Waking up more and more, more and more. Becoming more and more alert. More and more awake. “4”. Waking up more and more, more and more. “5”. Eyes beginning to open, alert, . . . refreshed, relaxed and at ease. Eyes open, alert, refreshed, relaxed, and at ease. Alert, refreshed, relaxed, and at ease.

APPENDIX C

HYPNOIDAL (pHGS) FORMULA

PCI (Sub)Dimension	x	Coefficient	Relative Percentage
Altered Experience	x	+.35	17%
Altered State	x	+.31	15%
Volitional Control	x	-.28	13%
Self-Awareness	x	-.27	13%
Rationality	x	+.23	11%
Absorption	x	+.19	9%
Memory	x	-.14	7%
Altered Time Sense	x	+.13	6%
Internal Dialogue	x	-.11	5%
Altered Body Image	x	-.07	3%
– Constant		+4.51	

Note: Percentages indicate relative magnitude of coefficient

Table 1
Correlations Between PCI Dimensions and Pre- and Post-Intervention SSES Score Differences By Groups (major PCI dimensions in bold)

<i>PCI dimensions</i>	<i>ES highs</i>	<i>ES mediums</i>	<i>ES lows</i>	<i>PT highs</i>	<i>PT mediums</i>	<i>PT lows</i>	<i>All highs</i>	<i>All mediums</i>	<i>All lows</i>	<i>All exper.</i>	<i>All cont.</i>	<i>Entire sample</i>
Body Image	0.559	-0.244	0.855	0.669	0.083	0.891	0.360	0.011	0.818**	0.275	0.341	0.327
Time Sense	-0.155	-0.742	0.174	0.924	-0.203	0.994**	0.707*	-0.314	0.526	-0.130	0.227	0.153
Perception	0.409	-0.760*	-0.044	0.660	-0.186	0.825	0.462	-0.396	0.192	-0.416	0.165	-0.134
Altered Meaning	0.740	-0.361	0.814	0.342	-0.319	0.996**	0.121	-0.282	0.864**	0.341	-0.116	0.134
Altered Experience	0.478	-0.679	0.661	0.753	-0.216	0.996**	0.513	-0.299	0.764*	0.040	0.155	0.153
Joy	0.808	-0.795*	0.628	0.320	0.469	0.668	-0.073	-0.082	0.705*	0.218	0.338	0.237
Sexual Excitement	0.801	-0.146	-0.133	0	-0.145	0.796	0.585	-0.134	0.074	0.010	-0.107	0.054
Love	0.808	0.394	0.648	0.301	-0.222	0.796	-0.140	-0.026	0.743*	0.577	-0.047	0.277
Positive Affect	0.808	-0.451	0.522	0.315	0.046	0.745	0.041	-0.091	0.652	0.358	0.111	0.259
Anger	0.801	0.383	0	-0.827	0	0.796	-0.407	0.262	0.094	0.014	-0.092	-0.031
Sadness	0.801	0.125	0.924*	-0.368	0.131	0.796	0.031	0.114	0.858**	0.142	0.067	0.069
Fear	0.801	0.305	0	-0.787	0	0.836	0.545	0.223	-0.004	0.061	0.367	0.143
Negative Affect	0.801	0.422	0.924*	-0.682	0.131	0.991**	0.148	0.231	0.553	0.087	0.069	0.095
Direction (inward)	-0.263	-0.442	0.683	-0.153	0.079	0.822	-0.081	-0.214	0.273	-0.053	0.089	-0.093
Absorption	-0.797	-0.450	-0.046	0.703	-0.443	0.375	0.326	-0.441	-0.166	-0.235	-0.175	-0.265
Attention	-0.403	-0.603	0.591	0.393	-0.200	0.915	0.074	-0.371	0.078	-0.152	-0.043	-0.197
Image Amount	0.445	-0.025	0.014	0.403	0.135	-0.916	-0.165	0.080	0.082	0.039	-0.060	-0.020
Image Vividness	0.438	-0.167	0.638	0.986*	-0.095	-0.495	0.101	-0.092	0.567	0.345	-0.101	0.177
Imagery	0.389	-0.113	0.553	0.948	-0.034	-0.581	0.036	-0.040	0.479	0.267	-0.089	0.125
Self-Awareness	0.368	0.188	-0.171	-0.818	0.166	-0.506	0.222	0.125	-0.291	0.143	0.006	0.024
Altered States of Awareness	-0.134	-0.829*	0.810	0.482	0.075	0.719	0.014	-0.225	0.831**	0.202	0.064	0.198
Arousal	0.772	0.584	0.027	-0.229	-0.012	0.397	0.515	0.278	0.123	0.113	0.017	0.158
Rationality	0.018	-0.278	-0.136	0.009	0.142	-0.879	0.296	0.002	-0.358	-0.191	0.033	-0.082
Volitional Control	0.093	0.155	-0.521	-0.879	0.128	-0.767	-0.324	0.113	-0.666*	-0.153	-0.108	-0.199
Memory	0.769	0.318	0.153	0.063	0.066	-0.968*	0.088	0.140	0.030	0.366	-0.192	0.110
Internal Dialog	0.820	-0.277	0.688	-0.661	0.567	-0.061	-0.069	0.187	0.552	0.293	0.240	0.278
All dimensions	0.654	-0.524	0.725	0.451	-0.014	0.949*	0.326	-0.157	0.795**	0.217	0.093	0.184

* p < .05 ** p < .01

Table 2
Correlations Between pHGS Scores and Pre- and Post-Intervention SSES Score Differences By Groups

<i>ES highs</i>	<i>ES mediums</i>	<i>ES lows</i>	<i>PT highs</i>	<i>PT mediums</i>	<i>PT lows</i>	<i>All highs</i>	<i>All mediums</i>	<i>All lows</i>	<i>All experimental</i>	<i>All control</i>	<i>Entire sample</i>
0.171	-0.706	0.631	0.832	-0.240	0.996*	0.509	-0.341	0.755	-0.010	0.138	0.131

* p < .05

Table 3
Average pHGS Scores By Groups

<i>ES highs</i>	<i>ES mediums</i>	<i>ES lows</i>	<i>PT highs</i>	<i>PT mediums</i>	<i>PT lows</i>	<i>All Highs</i>	<i>All mediums</i>	<i>All lows</i>	<i>All experimental</i>	<i>All control</i>
9.99	10.06	5.34	8.45	2.58	-2.18	9.22	5.85	2.00	8.57	2.84