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Altered-state experiences during relaxation: Do they depend on hypnotic susceptibility?

Rita Csáki and
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■ The purpose of this work was to examine whether hypnotic susceptibility affects subjective experience during a short relaxation. After listening to relaxation music, the subjects were asked to report their experiences in a short questionnaire (*Relaxation Experiences Questionnaire*). Hypnotic susceptibility was measured by the Harvard Group Scale of Hypnotic Susceptibility (Shor & Orne, 1962). An altered-state index was calculated from the *Relaxation Experiences Questionnaire*. It was surmised that high, medium and low hypnotic susceptibilities might correlate with different values of the altered-state index. However, it was found that subjects with low hypnotic susceptibility do have altered-state experiences if the situation is called "listening to music" and not "hypnosis".

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There are three crucial kinds of phenomena in hypnosis: hypnotizability, the hypnotic context, and alteration in subjective experiences (Woody, Bowers & Oakman, 1992). Hypnotizability is a capacity that varies from one individual to another (Spiegel & Maldonado, 1999), and these individual differences are critical factors in defining hypnosis (Hilgard, 1973). According to the state theories of hypnosis, hypnotic susceptibility is a remarkably stable trait (Hilgard, 1991, 1992), which was supported by several follow up studies (Morgan, Johnson & Hilgard, 1974; Piccione, Hilgard & Zimbardo, 1989; Weitzenhoffer & Hilgard, 1959). However, others have found that hypnotic susceptibility can be modified through special training methods (Gorassini, Sowerby, Creighton & Fry, 1991; Gorassini & Spanos, 1986, 1999), or by various contextual manipulations (Wickless & Kirsch, 1989). Contextual factors of hypnosis have important effects on hypnotic experience (Bányai, 1985, 1991, 1998; Lynn, Rhue & Weekes, 1990; Sheehan, 1992; Woody, Bowers & Oakman, 1992) and they can be particularly important in the development of personal experiences. Contextual factors include definition of the situation as hypnosis (Barber & Carverley, 1964; Lynn, Rhue & Weekes, 1990; Spanos & Coe, 1992) and the hypnotic communication style (Bányai, 1991, 1998; Erickson, Rossi & Rossi, 1976; McConkey, 1991; Szabó, 1993, 1996; Zeig, 1985).

"The essence of response to hypnotic suggestions lies in the person's subjective experience" (Kirsch, Milling & Burgess, 1998, p. 269). Verbally reported subjective experiences are the main focus of interest in the study of hypnosis (Woody, Bowers & Oakman, 1992). A number of investigations have aimed at revealing and understanding the essentiality of private experiences of the hypnotized person (McConkey, Wende & Barnier, 1999). Some studies analyzed the depth of hypnosis (Laurence & Nadon, 1986; Radtke & Spanos, 1982; Szabó, 1993), others have asked subjects to describe their personal hypnotic experiences (McConkey, 1991; Sheehan, 1992; Shor, 1979), to rate them in various dimensions (Kirsch, Council & Wickless, 1990; Kirsch, Milling & Burgess, 1998), or to indicate changes in the strength of their experience by a dial (McConkey, Wende & Barnier, 1999).

The most commonly used scales of hypnotic susceptibility, such as the Stanford Hypnotic Susceptibility Scale form A and B (Weitzenhoffer & Hilgard, 1959), and the Harvard Group Scale of Hypnotic Susceptibility (Shor & Orne, 1962), focus on the individual's observable response as external indicator of the hypnotic experience. The scales are scored behaviorally, and the ability to be hypnotized is determined by summing up the number of items that they pass. The behavioral responses are assumed to reflect the underlying subjective experience of the individual (McConkey, Wende & Barnier, 1999).

The aim of this study was to reveal whether there is any difference in individual experiences during a short relaxation depending on the subjects' hypnotic susceptibility. We may expect tendencies that high, medium and low hypnotic susceptibility correlate with different values of the measured altered-state experiences because subjects with high susceptibility may have higher ability to feel those alterations in consciousness than those who perform weaker in formal susceptibility scales.

Nevertheless, taking into account the contextual factors (such as definition of the situation), it is also possible that subjects with medium and low hypnotic susceptibility have the ability to experience those alterations in a situation defined as "listening to music".

Methods

Subjects

Initially, a total of 312 undergraduate students volunteered to participate in measuring hypnotic susceptibility with a standard scale. Subjects were recruited through sign-up sheets posted in the Department of Psychology building. Participation was limited to students with no previous experience of hypnosis. The final sample was composed of 47 subjects (18 males and 29 females) who volunteered to take part in the laboratory experiment (mean age 22.4 ± 4.3 years, median 22 years). Subjects were paid for their participation.

Measures

Hypnotic susceptibility was measured by the Harvard Group Scale of Hypnotic Sus-

ceptibility, Form A (HGSHS:A) (Shor & Orne, 1962) which is a group measure of hypnotic responsiveness. The scale involves a structured hypnotic induction and an assessment of the subject's response to 12 hypnotic suggestions. It is a self-score scale; in the standard scoring system the participants indicate for each suggestion whether they passed or failed to do it. The total scale scores range from 0 to 12. The psychometric properties of the HGSHS:A were found to be good, internal consistency was 0.83 (Shor & Orne, 1962) and the test-retest reliability was 0.55 (Gwynn, Spanos, Gabara & Jarrett, 1988). Subjects were classified as high ($n=15$), medium ($n=16$) and low susceptibles ($n=16$) on the basis of their scores on HGSHS:A. Highly susceptible subjects scored in the range of 9-12 (mean 9.8, SD 0.94), medium susceptibles scored in the range of 5-8 (mean 6.94, SD 0.68) and low susceptibles scored in the range of 0-4 (mean 2.81, SD 1.22).

Relaxation experiences were measured by a technique constructed by one of the authors. The technique is based on the Relaxation Experiences Questionnaire (REQ), a self-report instrument to assess the occurrence of altered state experiences. First, the subject briefly describes the experiences he/she had while relaxing and listening to music. Then the subject indicates on 7-point scales how he/she experienced the following: relaxation, imagination/hallucination, alterations in attention, Altered State Experiences, and deepness. The Altered State Experiences scale was calculated from seven "altered state experiences" such as the feeling of being high or the out-of-body experience; each was rated as pass or fail. It is relevant to mention that hypnotized subjects sometimes spontaneously report body distortions or fluctuations in body experience (Nash, 1991, 1992). The imagination/hallucination factor was calculated from five "hallucination" scales of five modalities (visual, auditory, smell, taste and movement) in which subjects indicated their experiences of seeing images, hearing sounds, smelling or tasting something or feeling any movement. The last section of the REQ includes three items. The first two questions are aimed at comparing the "listening to music" experience with the hypnotic experience ("How similar were your experiences during relaxation to the ones you felt during hypnosis?") and "Which was more pleasant for you?"). The last question intended to reveal how often did the subject have similar experiences. Internal reliability of the REQ was 0.82 in this sample. An altered-state index (ASI) was calculated from the REQ based on the scores for relaxation, imagination/hallucination, alterations in attention, Altered State Experiences, and deepness.

Procedure

The present experiment was part of a larger study examining the connections between hypnotic susceptibility and coping with examination stress. Before the experiments began, all participants were informed that purpose of the study was to examine how listening to music can enhance performance on mental tasks. They were told that after listening to music they have to work on some mental tasks and that payment will depend on their performance. Participants were assured that their responses would be treated confidentially and they all signed a consent form before the study has begun.

To minimize and/or eliminate confounding variables, the investigator was different from the person who assessed the subject's hypnotic susceptibility and was not aware of the subject's hypnotic susceptibility score. All subjects were tested while being alone in a laboratory, the investigator was in another room and the subject and the investigator communicated through a video camera system. The instructions were presented to the subjects by audiotape. The subjects were instructed as follows: "Now you will listen to music for a while. You don't have to do anything just make yourself comfortable in the armchair. If you wish you may abandon yourself to relaxation." Then the subjects were listening to relaxation music for 10 min and 2 sec. Following that, they heard a speech containing suggestions to stay calm during the examination and to perform well on mental tasks. Later on another 10-min music followed. At the end of the resting period the investigator asked the subjects to fill out the Relaxation Experiences Questionnaire.

Results

Effects of hypnotizability on relaxation experiences

To test for the hypothesis that, in a context which is called "listening to music", subjects have similar experiences regardless of their hypnotic susceptibility, measures of hypnotic performance and relaxation experiences were compared. The continuous variables of REQ (relaxation, imagination/hallucination, focused attention, altered state experiences, deepness) were analyzed by one-way-ANOVA. The results showed that there were no differences between subjects with low, medium, and high hypnotic susceptibility regarding the following factors: relaxation, focused attention, altered state experiences and deepness. On the other hand, significant differences ($p=0.05$) were found between the three groups in the hallucination/imagination factor ($F=3.67$, $p=0.034$). Thus the hypothesis was not fully supported as in four factors (relaxation, focused attention, altered state experiences, deepness) low, medium and high susceptibles did have similar experiences but in the hallucination/imagination factor significant difference have been found between the three groups. Post hoc tests were performed to determine if all three groups differ significantly or not. The results showed that this difference is due to the discrepancy between mediums and highs (mean difference 1.88, $p=0.018$) and between mediums and lows (mean difference 1.68, $p=0.034$). In other words the difference between lows and highs was not considerable. The calculated Altered State Index was also analyzed with one-way-ANOVA but there were no differences between the three groups. Nevertheless, post hoc test showed that there was a statistically significant difference between the high and medium susceptibles (mean difference 1.07, $p=0.02$).

Effects of hypnotizability on preferences (relaxation versus hypnosis)

To test for the hypothesis that low susceptible subjects prefer relaxation to hypnosis, planned comparisons were performed on measures of hypnotic susceptibility and

Table 1: Means and Standard Deviations of Relaxation Experiences Questionnaire

Factors of REQ	Hypnotic Susceptibility					
	High		Medium		Low	
	Mean	SD	Mean	SD	Mean	SD
Relaxation	5.73	1.16	4.94	1.29	5.00	1.71
Imagination/hallucination	5.13	2.36	3.25	2.14	4.93	1.82
Attention	5.27	1.53	4.40	1.40	4.57	1.50
Altered State Experiences	2.13	1.50	1.19	1.51	1.57	1.50
Deepness	4.53	1.73	3.88	1.46	4.14	1.74
Altered State Index	4.56	1.26	3.49	1.19	4.04	1.15
Similarity	4.80	1.57	3.69	1.89	4.43	1.65
Everyday Experiences	5.27	1.49	5.12	1.15	5.00	1.41

the preference item ("Which was more pleasant for you?" hypnosis, relaxation or the same) of REQ. Since this variable was formulated in a nominal way, data were analyzed by Kruskal-Wallis test. The results showed no statistically significant differences between the preferences of low, medium and high susceptible subjects. However, the frequency values of the three groups (see Fig. 1) suggested that there is a tendency that subjects with different hypnotic susceptibility prefer different contextual settings. To test for this assumption, the hypnotic susceptibility and preference ratings were analyzed with chi-square test. The outcomes have failed to render the expected results, since the difference was not statistically significant ($p=0.054$) when all three groups were included. However, when high susceptibles were excluded from the population, the dif-

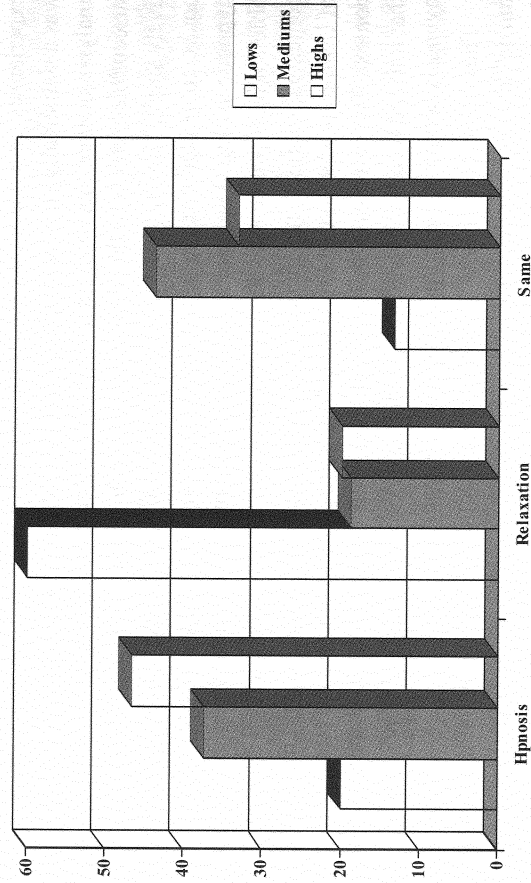


Figure 1: Preferences: hypnosis vs. relaxation

ference between low and medium susceptibles was statistically significant ($p=0.036$).

Effects of hypnotizability on similarity ratings

The similarity item of the REQ was aimed at comparing the "listening to music" experience with the hypnotic experience. To examine whether the subjects had similar experiences depending on their hypnotic susceptibility during this relaxation to the ones in hypnosis the similarity component of the REQ was analyzed by one-way-ANOVA. There were no significant differences between low, medium and high susceptibles in their similarity ratings. The mean of the ratings of similarity was 4.30 on a 7-point scale, which ranged from "totally different-1" to "exactly the same-7".

Effects of hypnotic susceptibility on everyday altered state experiences

To test for the hypothesis that low and medium susceptibles do have the same altered state experiences in their everyday life as do high susceptibles, the everyday experiences component of REQ was also analyzed by one-way-ANOVA. The comparison supported the hypothesis as there is no significant difference between the three groups in the occurrence of altered state experiences in everyday life. The mean of the reported everyday altered state experiences was 5.13 on a 7-point scale, which ranged from "never-1" to "frequently-7".

Discussion

Results of this study indicate that, in a relaxation situation called "listening to music", subjects have almost similar altered-state experiences regardless of their hypnotic susceptibility. There were no differences between the three study groups (low, medium and high hypnotizables) in four factors (i.e., relaxation, focused attention, altered state experiences, and deepness) and in the calculated Altered State Index. However, there was a statistically significant difference in the imagination/hallucination factor. Further analysis showed that medium susceptibles differ in this factor from both high and low susceptibles, although the difference between high and low susceptibles was comparatively small. This suggests that hearing sounds or seeing images in an altered state may not be connected directly to the ability of responding behaviorally to suggestions in a hypnotic setting. The results of the contextual preferences underlined that low susceptible subjects prefer relaxation to hypnosis but for medium and high susceptibles the contextual setting is not that important. Our results are in accord with the observations of Lynn et al. (1991) that low but not high hypnotizable subjects are reactive to the test context. They are also consistent with the results of another study (Szabó, 1993, 1996) that low and medium hypnotizable individuals experience greater depth during indirect hypnosis compared with traditional direct hypnosis.

Thus subjects with low hypnotic susceptibility calling the situation "listening to music" may have greater subjective involvement and more altered state experience. Another explanation might be that low susceptibles have similar altered state experiences during a standard susceptibility measure, but, as the items are scored behaviorally,

orally, they do not affect the total scores. However, the second explanation is inconsistent with those studies in which the correlation between two scoring systems (i.e. behavioral and subjective) for standard hypnotic measures was remarkably high (Kirsch, Council & Wickless, 1990; Kirsch, Milling & Burgess, 1998).

Our results for the ratings on everyday altered state experiences also indicated that low and medium susceptibles are able to have the same experiences as high susceptibles in everyday life and they did not differ from high susceptibles in the frequency of occurrence. Similarity ratings were obtained from the subjects to control that there was likeness between "listening to music" and hypnotic experience. The mean of these ratings fell in the middle of the scale, indicating that the subjects rated the two contexts similar but not identical. Nevertheless, there were several important differences between the two situations, such as that, in the relaxation context, there was no formal induction, and that its duration was much shorter than that of the formal hypnosis measure.

In conclusion, our failure to find major differences in subjective experiences between subjects with low, medium and high hypnotic susceptibility suggests that a context that is not called hypnosis may facilitate the subjective experiences of low hypnotic susceptibles.

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Giuseppe De Benedittis

■ Spontaneous regression of incurable diseases (e.g., cancer, AIDS) can be defined as a complete or partial disappearance of bodily signs and symptoms of the disease, associated with prolonged survival, in the absence of adequate and appropriate treatment. The reasons for spontaneous regression are unknown, but the influence of psychosocial factors on psychoneuroimmunology of cancer and AIDS can be significant. A recent analysis of 50 cases of remarkable recoveries (Hirschberg & Barasch, 1995) suggests that spontaneous and/or elicited changes of awareness and consciousness occurred in a significant number of patients. These hypnotic-like states and experiences might mediate at some extent the healing process. Moreover, high hypnotizability and absorption seem to be associated with the occurrence of remarkable recoveries.

The Author postulates an explanatory model that suggests the influence of hypnotic pathways in the healing process. Incurable diseases, such as cancer and AIDS, can be experienced as traumatic, stressful events, that may lead to uncontrolled dissociative states. But dissociation is also a specific component of the hypnotic experience.

The same defensive mechanism (i.e., dissociation) elicited by the subject experiencing the traumatic event might exert positive influences on the healing process through the hypnotic experience. Hypnosis can enhance psychoneuroimmunological functions and facilitate a new synthesis of the Self. This process may eventually lead to the remarkable recovery.

Introduction

Remarkable recovery or spontaneous regression (SR) of incurable diseases (e.g. cancer, AIDS) can be defined as a complete or partial disappearance of bodily signs and symptoms of the disease, associated with prolonged survival, in the absence of adequate and appropriate treatment (Everson & Cole, 1966; Ikemi & Ikemi, 1986).

According to the Webster dictionary, the original meaning of the word "spontaneous" (derived from the Latin sponte, "of free will") had to do with something occurring due