

RELATIONS BETWEEN HYPNOTIZABILITY AND PSYCHOPATHOLOGY REVISITED

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Abstract

Inspired by a first episode of schizophrenia following within a week of stage hypnosis, we examined relations between schizotypy and hypnotizability with the Harvard Group Scale of Hypnotic Susceptibility (HGSHS), showing positive associations with 15 items mostly consisting of positive aspects of schizotypy. Here this was re-examined in two further samples. First, with the more cognitively loaded Stanford Hypnotic Susceptibility Scale, Form C, administered individually to Italian, female psychology students. In the second the HGSHS was administered to British medical student volunteers in stress reduction studies. In the first replication 12 correlations were disclosed, all with positive features of schizotypy, nine consisting of unreality experiences, with six items relating to psychic experiences. In the second replication of the 13 positive associations, seven were negative items belonging to the withdrawn syndrome, with six belonging to the social anxiety subscale, a non-specific feature of schizotypy. Across the series of studies, all but one item was interpreted as consistent with associations between hypnotizability and positive schizotypy and social anxiety. Though the items mostly varied from study to study, and despite sampling and scale differences, the outcome clearly merits large scale studies to investigate further the relation between hypnotic susceptibility and psychopathology.

Key words: hypnotizability, personality, psychopathology, schizotypy

Introduction

A first episode of schizophrenia, following within a week of stage hypnosis where the participant was a star turn (Allen, 1995; Gruzelier, 2000) encouraged us to consider whether a personality which predisposes to schizophrenia may be a feature of hypnotizability. Jamieson and Gruzelier (2001) went on to report that the predicted relation did hold with 15/84 items of a schizotypy syndrome questionnaire having subscales of cognitive activation and unreality, encapsulating so-called ‘positive’ features of schizotypy, and a withdrawn subscale containing ‘negative’ features including withdrawal and constricted affect, as well as social anxiety (which in factor analysis loads on all schizotypy factors). The representation of the 15 items across the three subscales was as follows: 8/15 items belonged to the cognitive activation scale, five to the unreality scale and two to the withdrawn scale. Accordingly this investigation disclosed a relationship between hypnotizability and predominantly positive features of schizotypy. This was plausible given affinities between personality features having associations with both

schizotypy and hypnotizability. These associations include perceptual alteration, vividness of imagery, fantasy proneness, imaginative involvement, absorption and creativity (Gruzelier, 2004).

Hypnotizability is not a unitary phenomenon. As conventionally assessed it has motoric features, both active and passive, as well as cognitive features (Perry, Naldon and Button, 1992). The scale used by Jamieson and Gruzelier (2001) was the Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS:A; Shor and Orne, 1962). This has a predominance of motoric items. In this short report we set out first to re-examine the relation between schizotypy and hypnotic susceptibility with the Stanford Hypnotic Susceptibility Scale, Form C (Weitzenhoffer and Hilgard, 1962). This is an individually administered scale which lends itself to incorporating more cognitive items than the HGSHS:A. We also re-examined the relation with the HGSHS:A using, instead of a single medical school class, a volunteer sample of participants who were recruited for investigations examining various forms of stress reduction training, including a Japanese method, self-hypnosis training and a biofeedback relaxation procedure. The subjects were pooled from more than one study (Laidlaw et al., 2003; Naito, Laidlaw, Henderson, Farahani, Dwivedi and Gruzelier, 2003; Laidlaw, Dwivedi, Naito and Gruzelier, 2004).

Method

Experiment 1 was in collaboration with Vilfredo de Pascalis, Università Degli Studi di Roma, La Sapienza with Italian female undergraduate psychology students ($N = 74$). In Rome, we examined the relation between the Personality Syndrome Questionnaire (PSQ; Gruzelier, Jamieson, Croft, Kaiser and Burgess, 2004) and the SHSS:C (Weitzenhoffer and Hilgard, 1962). The SHSS:C was administered individually to the students in an independent context to the PSQ administration, as in our previous study.

In experiment 2, 80 students, the majority of whom were in their third year of Medicine at Imperial College London, were recruited by word-of-mouth and by posters and were paid £20 to £30. The age range was 18–37 years, (mean = 21.7) with 38 males and 42 females. Aside from the HGSHS:A, Form A (Shor and Orne, 1962) and the PSQ, they were tested on a range of other questionnaires including the Temperament and Character Inventory (TCI; Cloninger, Svrakic and Przybeck, 1993). The HGSHS:A was obtained in a separate context from the PSQ and TCI. Save for the item analysis of the PSQ and the HGSHS:A score which are reported here, relations between the various personality tests and hypnotic susceptibility have been the subject of a separate report (Laidlaw et al., 2004).

Results

In the Rome study the results showed significant correlations between 12 items, all in the direction of high schizotypy and high hypnotic susceptibility. Appendix A shows the items categorized by syndrome. Here three belonged to the activation scale, while the majority belonged to the unreality syndrome (9/12). Of these, six were cognitive aspects of unreality, two were perceptual and one paranoid. Of the six cognitive items, five were to do with psychic experiences. In sum all correlations supported a relation between positive schizotypy and hypnotic susceptibility (Sign test, $p < 0.001$).

In the London study, there were 14 significant correlations between the HGSHS:A and the schizotypy. The items are listed in Appendix B by syndrome. Thirteen out of fourteen were positive associations. Four belonged to the Activation scale and two were from the Unreality scale, while in contrast to our two previous studies the majority

belonged to the withdrawn scale, giving eight significant correlations. Six of these belonged to social anxiety. Social anxiety is a non-specific subscale in that it does not belong to the cardinal features of the negative syndrome schizotypy, which consist of withdrawal and constricted affect subscales. Of the remaining 2/8 withdrawn scale items, one belonged to the constricted affect – namely ‘My “non-verbal” communication (smiling and nodding during conversation) is (*not*) good’; the same item showed a positive association in the first study. The remaining item represented the one negative association with hypnotic susceptibility. This belonged to the withdrawn scale – ‘I (*do not*) prefer to keep to myself’. However, the direction of this correlation supported our hypothesized association of hypnotizability and positive schizotypal syndromes, as highly hypnotizable subjects do not prefer to keep to themselves. In summary, of those items representing cardinal features of either positive or negative schizotypy, 7/8 were in support of hypnosis.

The items from the three studies including Jamieson and Gruzelier (2001) were pooled. There were 41 significant correlations, 39 of which were compatible with high hypnotizability and high positive schizotypy (Sign test, $p < 0.001$). Only one item went against the hypothesis and this occurred in both London studies. It was the one relating to non-verbal communication which belonged to the constricted affect/emotional withdrawal syndrome, a negative feature of schizotypy. The representation of correlations across the syndromes was as follows: unreality 16, cognitive activation 15, and withdrawal 10, of which 7 belonged to the social anxiety subscale, which is a non-specific feature of schizotypy. Accordingly, excluding social anxiety, 34 correlations belonged to cardinal positive and negative features of schizotypy of which 32 were in support of a relation between positive schizotypy and hypnotizability (Sign test, $p < 0.001$).

Discussion

In these exploratory studies, including the earlier report of Jamieson and Gruzelier (2001), significant positive relations were found between some items on the schizotypy scale and hypnotic susceptibility incorporating two scales across the three studies. Importantly for our thesis, in no studies were there any negative relations obtained out of the 41 associations recorded. The main thrust of the results was in support of hypothesized associations with positive syndromes of schizotypy (31/40 items, $p < 0.001$), namely unreality and cognitive activation syndromes (Gruzelier, 1999; 2003).

Furthermore in support of the positive schizotypy relation, the withdrawn syndrome item ‘I prefer to keep to myself’ disclosed a negative correlation in the third study. In other words highly hypnotizable participants do not prefer to keep to themselves, a feature associated with extraversion (Eysenck and Eysenck, 1975). Interestingly in this regard, 7 of the remaining items (1 from the first study and 6 from the third) belonged to the social anxiety subscale. This is a withdrawn syndrome subscale which in factor analyses loads separately from the cardinal social and emotional withdrawal aspects of negative schizotypy, and it is nonspecific in that it correlates with elements of both positive and negative schizotypy. In fact anxiety is a pervasive aspect of schizotypy (Gruzelier, 1996; Ettinger, Kumari, Crawford, Flak, Sharma, Davis and Carr, 2005). The conjunction of social anxiety and extraversion is in keeping with a neurotic extrovert profile as has been found previously when investigating the relations between schizotypy scales and the Eysenck personality measures of Extroversion and Neuroticism (Gruzelier, 1996). Green (2004) in this issue of *Contemporary Hypnosis* reports relations between the HGSHS:A and the NEO-PI-R (Costa and McCrae, 1992) inventory with its 5 scales of agreeableness, extraversion, neuroticism, openness and conscientiousness and its 30

facet scales. Compatible with our findings he obtained modest associations with extraversion and neuroticism, as well as with positive emotions and vulnerability.

There were two remaining negative syndrome correlations (one in the first study and one in the last) which pertained to the same item, 'My "non-verbal" communication (smiling and nodding during conversation) is (*not*) good.' This belongs to the emotional/withdrawal or constricted affect scale. It may represent our one anomalous relation, or conceivably, following the positive schizotypy hypothesis, poor nonverbal communication may be a function of not being a good listener, due to a hasty, activated cognitive style? Whatever the explanation, across our three studies the dominant relation with hypnotizability when considering the cardinal features of schizotypy was with positive syndromes of schizotypy ($p < 0.001$).

We emphasize that there was no relation between hypnotizability and the total schizotypy scale score. Similarly, de Pascalis (1989) found no association with psychoticism (Eysenck, Eysenck and Barrett, 1985) controversially linked with schizotypy. Nor did we find relations between hypnotic susceptibility and the total scores on the individual schizotypy subscales of activation, withdrawal and unreality. Furthermore the individual items for the most part varied from study to study.

Several issues may be responsible for the differences between studies. First, the subject samples were different. Though two were from the same medical school, in the first 2001 sample they represented second year medical students who attended for class exercises in psychology, whereas the later sample, aside from being typically a year more advanced in their studies, perhaps more pertinently were recruited as volunteers for a stress reduction training project. The latter study may have attracted students with a propensity for stress and a need for stress reduction. The sample did not reflect that of the more representative medical school of the earlier study. The Italian sample on the other hand differed not only culturally, but in that all the participants were of one gender – women, when the British samples were of mixed sex. The Italians were psychology students, rather than medical students who at Imperial College London had chosen to attend a university with a science tradition with the requirement of an additional year of science training as part of the medical curriculum. The Italians were also more homogeneous culturally compared with the ethnically mixed British sample. Some of these features such as female sex, Mediterranean culture, and a more humanities orientation may account for the high representation in the Italian sample of Unreality items – 75% of the total schizotypy items compared with only 23% in the combined British sample. We note that these had a strong loading on psychic experiences. More important than sampling differences was perhaps another determinant, namely the use in the Italian study of the SHSS:C with its stronger cognitive loading in comparison with the HGSHS:A used in both British studies.

While it is noteworthy that there were no negative features of schizotypy associated with the SSHS, whereas 32% of the associations with the HGSHS:A were negative aspects of schizotypy, this is unlikely to account for the different representation of the schizotypy items. This is because the difference in the representation of withdrawn syndrome items was also apparent between the two studies using the HGSHS:A scale: 13% in the first sample which more than trebled to 50% in the second. We hypothesize that the high percentage of negative items in the third sample was due to the nature of the recruitment. The advertisement for volunteers for a stress reduction training programme attracted a higher proportion of students in the need of anxiety reduction. In support of this, of the eight withdrawn scale items, six concerned social anxiety in the stress-reduction sample.

Aside from the issues of sampling, the absence of withdrawn scale items in the one study with the more cognitively loaded SSHS Form C, indicates that the nature of hypnotizability may also be an important determinant. This raises the spectre of the heterogeneity of the hypnotizability and suggestibility constructs (Evans, 1991; de Pascalis, 2000).

Another theoretical implication of the heterogeneity in schizotypy items, is that while the items were all subsumed under the umbrella term schizotypy, they may indicate associations with a broader construct than schizotypy, and refer to psychopathology in general. In the third study examination with the other personality scales (Laidlaw et al., 2004) disclosed that the stronger relations with hypnotizability in the students volunteering for stress reduction were with low self-directedness on the TCI (Cloninger et al., 1993). There is good evidence that low self-directedness is a predictor of personality disorders in general (Svrakic, Whitehead, Przybeck and Cloninger et al., 1993; Bayon, Hill, Svrakic, Przybeck and Cloninger, 1996; Joyce, Mulder, Luty, McKenzie, Sullivan and Cloninger, 2003). However, a higher representation in the various samples of social and emotional withdrawn items than the one found here should also have followed from this interpretation.

Furthermore Wickramasekera (2000) has proposed that both high and low hypnotic susceptibility are risk factors for psychosomatic symptoms, leading to sympathetic dysregulation and parasympathetic dysregulation respectively. Our result with social anxiety may be in keeping with the former condition.

In conclusion our replication studies are compatible with the hypothesis that hypnotic susceptibility has associations with 'positive' syndromes of schizotypy and social anxiety. Here there have been consistent but modest associations with individual positive schizotypy items which have varied across samples. Accordingly, aside from the advantage of hypnotizability, and the virtues of cognitive flexibility and neurophysiological plasticity (Crawford and Gruzelier, 1992; Evans, 1991), hypnotic susceptibility may represent a vulnerability factor for psychopathology. This may take the form of positive schizotypy or a broader range of psychopathology (Gruzelier, 2002; 2004; Laidlaw et al., 2004). This hypothesis warrants large scale research taking into account the heterogeneity of hypnotic susceptibility.

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Appendix A

Schizotypy items listed by syndrome which significantly correlated with hypnotic susceptibility in the Rome study

Unreality: Cognitive

- 15. I believe in telepathy (mind reading). ($r = 0.271$, $p < 0.020$)
- 16. I have never sensed some person or force around me when alone. ($r = -0.386$, $p < 0.001$)
- 39. I don't believe in clairvoyance (fortune telling). ($r = -0.231$, $p < 0.047$)
- 60. I have never had an experience with astrology, seeing the future, UFOs, ESP or a sixth sense. ($r = -0.237$, $p < 0.042$)
- 71. I have never felt that I am communicating with another person telepathically (mind reading). ($r = -0.331$, $p < 0.004$)
- 82. My thoughts are so strong sometimes I can almost hear them. ($r = 0.305$, $p < 0.008$)

Unreality: Perceptual

- 28. When looking at a person or myself in the mirror, I have never seen the face change right before my eyes. ($r = -0.294$, $p < 0.011$)
- 72. My sense of smell sometimes becomes unusually strong. ($r = 0.370$, $p < 0.001$)

Unreality: Paranoid

- 76. I never or rarely feel that other people have it in for me. ($r = -0.233$, $p < 0.046$)

Activation

- 29. Sometimes people think I'm a little strange. ($r = 0.304$, $p < 0.009$)
- 54. I often find I can't sit still. ($r = 0.285$, $p < 0.014$)
- 74. I sometimes find that I say one thing and mean just the opposite. ($r = 0.248$, $p < 0.033$)

Appendix B

Schizotypy items listed by syndrome which significantly correlated with hypnotic susceptibility in the stress reduction London study

Unreality: Cognitive

- 31. I am sometimes sure that other people can tell what I am thinking. ($r = 0.244$, $p < 0.021$)

64. I never or rarely pick up hidden threats and put-downs from what people say or do. ($r = -0.230$, $p < 0.028$)

Activation

13. I nearly always express my thoughts clearly when I speak. ($r = -0.201$, $p < 0.048$)
34. I rarely have trouble finding or using the right word to express what I want to say. ($r = -0.318$, $p < 0.004$)
51. It is unusual for me to ramble on too much when speaking. ($r = -0.241$, $p < 0.022$)
65. I sometimes find it difficult to put together what people are saying to understand their meaning. ($r = 0.231$, $p < 0.027$)

Withdrawn

3. I sometimes avoid going to places where there will be lots of people because I think I will get anxious. ($r = 0.200$, $p < 0.048$).
16. I never or rarely get nervous when I have to make polite conversation. ($r = -0.287$, $p < 0.008$)
20. I prefer to keep to myself. ($r = -0.243$, $p < 0.021$)
28. I hardly ever get nervous when someone is walking behind me. ($r = -0.220$, $p < 0.034$)
43. I don't usually get anxious when meeting people for the first time. ($r = -0.211$, $p < 0.040$)
53. My 'non-verbal' communication (smiling and nodding during conversation) is good. ($r = -0.250$, $p < 0.018$)
56. I never or rarely feel nervous when with a group of unfamiliar people. ($r = -0.265$, $p < 0.013$)
67. I feel very uncomfortable in social situations involving unfamiliar people. ($r = 0.206$, $p < 0.044$)

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