

HYPNOTIC SUGGESTIBILITY AND ADULT ATTACHMENT

BURKHARD PETER^{1,2}, MARIA HAGL², ALEXANDRA BAZIJAN², CHRISTOPH PIESBERGEN²

¹ MEG-Stiftung, Konradstr. 16, 80801 Munich, Germany, ² Ludwig-Maximilians-University Munich, Leopoldstr. 13, 80802 Munich, Germany

ABSTRACT

Many attempts have been made to connect hypnotic suggestibility with certain personality traits. These efforts resulted in the discovery of 'positive' as well as 'problematic' aspects of hypnotic suggestibility. In a pilot project, the association between hypnotic suggestibility and attachment style of young adults was examined. We assessed the relationship attitudes in a sample of 117 undergraduate students with a German modification of the Relationship Style Questionnaire (RSQ) as well as their hypnotic suggestibility measured with the Harvard Group Scale of Hypnotic Susceptibility (HGSHS:A). Participants with insecure attachment styles showed higher hypnotic suggestibility. Two RSQ scales in particular, namely *anxiety* and *lack of trust*, correlated positively with hypnotic suggestibility. Thus, hypnotic suggestibility seems to be connected to the 'problematic' aspects of human personality traits; a result which has to be questioned further.

Key words: hypnosis, suggestibility, hypnotizability, attachment, RSQ

INTRODUCTION

Suggestibility is one of the more thoroughly investigated personality traits, and *hypnotic suggestibility* even more (Weitzenhoffer, 1953; Hull, 1933; Hilgard, 1965; Gheorghiu et al., 1989). The terms 'suggestibility' and 'hypnotizability' are often used synonymously, although they most likely describe two different concepts (Weitzenhoffer, 1980; Braffman & Kirsch, 1999). However, non-hypnotic and hypnotic suggestibility correlate strongly (Tart & Hilgard, 1966). Hypnotic suggestibility has been proved to be a stable personality trait over time (Morgan et al., 1974; Piccione et al., 1989) and showed strong correlation in identical twins (Morgan, 1973). Current research suggests neurobiological foundations for these facts (Crawford et al., 2004; Horton et al., 2004; Lichtenberg et al., 2004).

POSITIVE ASPECTS OF HYPNOTIC SUGGESTIBILITY

Attempts to relate hypnotic suggestibility to other personality traits, for example the 'big five', have been relatively unsuccessful (Malinoski & Lynn, 1999; Nordenstrom et al., 2002). Moderate correlations were found between hypnotic suggestibility and personality traits such as 'absorption' (Tellegen & Atkinson, 1974; Piesbergen & Peter, 2006), 'imaginative involvement' (Hilgard, 1970), 'fantasy-proneness' (Wilson & Barber, 1982), 'imagery

vividness' (Farthing et al., 1983; for an overview see e.g. Kirsch & Council, 1992), 'response expectancy' (Kirsch, 1985), and 'creativity' (Lynn & Sivec, 1992; Shames & Bowers, 1992). Recent research has shown similar correlations to 'emotional contagion' (Cardeña et al., 2009), 'empathy' (Wickramasekera & Szlyk, 2003), and 'self-transcendence' (Cardeña & Terhune, 2008).

Psychoanalytical authors associated hypnotizability with the ability for primary process imagery ('ego receptivity'; Fromm, 1992) and 'adaptive regression' (Hartmann, 1958), a mature form of 'regression in the service of the ego' (Gill & Brenman, 1959). Despite its appeal, the idea of hypnosis as adaptive regression could not, according to Nash (1992), be supported by research findings.

Lynn and Sivec (1992) viewed highly suggestible subjects as 'creative problem-solving agents' and according to Crawford (1989) they show notable cognitive and physiological flexibility. These features can be seen as positive characteristics of psychologically stable individuals. To simplify matters, we will refer to such personality traits as the *positive aspects of hypnotic suggestibility*.

PROBLEMATIC ASPECTS OF HYPNOTIC SUGGESTIBILITY

On the other hand, hypnotic suggestibility has been repeatedly researched in relation to psychopathology, due to the obvious phenomenological similarities between hypnotic phenomena and psychopathological symptoms. For example, Nash (1992) connected hypnotic phenomena to psychopathological symptoms referring to Freud's topographic model. Peter (2009a, 2009b) pointed out similarities such as *involuntariness* and *self-evidence*, as well as differences such as *contact* and *communication*.

Attempts to link hypnotic suggestibility to psychopathological symptoms reach as far back as Charcot (1882), Freud (Breuer & Freud, 1895/1957), and Janet (1925). Forel (1889) believed it was possible to 'produce, influence and prevent all known forms of the human psyche, as well as a large part of the objectively known nervous system, through use of hypnotic suggestion' (1889: 25); here, he particularly referred to psycho-pathological symptoms. Frankel (1974) paralleled hypnotizability to so called hypnogenic phobias, and Wickramasekera (1994) to somatoform disorders in individuals with higher neuroticism scores. On the background of Janet's (1925) original dissociative theory and Hilgard's (1974, 1989) neo-dissociative theory, a number of researchers and clinicians postulated links between dissociative ability and hypnotizability, in particular in dissociative disorders (Spiegel, 1990; Frischholz et al., 1992; Kluft, 1992, 2002) and eating disorders (Barabasz, 1990; Kranhold et al., 1992; Vanderlinden et al., 1995). Specific attempts to find a correlation between hypnotic suggestibility and dissociative experiences as measured with the Dissociative Experience Scale (DES; Bernstein & Putnam, 1986), for example, or a non-clinical version (DES-C; Wright & Loftus, 1999) have not, however, proved very successful (Dienes et al., 2009).

In his seminal paper on unwanted effects of hypnosis, Gruzeliier (2000; see also 2004) detailed the link between hypnosis/hypnotizability and psychopathology. Through neurophysiological research in his laboratory he found parallels between schizotypy unreality and hypnotizability. Schizotypy describes personality characteristics and experiences ranging from normal and non-pathological to more extreme states related to psychosis and, in

particular, schizophrenia (Gruzelier & Doig, 1996). Gruzelier and colleagues (2004; Jamieson & Gruzelier, 2001) were able to confirm this connection.

So, in this line of research, suggestibility is rather associated with psychopathology. Due to certain implications, which we would like to discuss at the end of this article, this is not entirely unproblematic. To simplify matters we will refer to such personality traits as the *problematic aspects of hypnotic suggestibility*.

Another possibility to associate hypnotic suggestibility with personality traits, and thus to pose the question if it is to be attributed either to the 'positive' or to the more 'problematic' aspects, would be to investigate its relationship to attachment styles. As far as we know, this has not been explored yet.

THE CONCEPT OF ADULT ATTACHMENT

In his attachment theory, Bowlby (1969) postulated an evolutionary developed behavioural system in infants to achieve and maintain proximity to caretakers in order to ensure survival. In case of separation from primary caretakers, the child shows behaviour like clinging or crying, which in turn activates parental care. In the presence of a caretaker, the child feels secure again and other behavioural systems (e.g. exploration) take over. Early attachment experiences influence later attachment behaviour in the form of so called 'internal working models'. The essential difference between attachment in childhood and in adulthood is that the role of the primary attachment figure moves away from the parents towards a partner or friends. This transformation is most apparent during puberty and is influenced by the internal working model of attachment previously learned.

These internal working models result in observable behaviour and can be measured in children by systematic behaviour observation, for example in the so called 'Strange Situation Protocol' (Ainsworth et al., 1978). Whereas Ainsworth and colleagues' classification of attachment patterns in children is quite established, classification in adults is more diverse. The approach developed by Main and Goldwyn (1985) and their Adult Attachment Interview (AAI) was strongly based on Ainsworth's concept of attachment during childhood. Hazan and Shaver (1987) focused on adult attachment in romantic relationships. Following Ainsworth as well, they differentiated between secure, anxious, and avoidant attachment patterns. Finally, drawing on Bowlby's definition of internal working models of attachment, Bartholomew and Horowitz (1991) proposed a four-category approach of adult attachment: secure, dismissing, preoccupied, and fearful (see Table 1). Two underlying dimensions define the four prototypic patterns: an individual's model of self and of others, representing expectations about oneself as being worthy and likeable; and about others as being available and trustworthy. In research on adults and their self-reported attachment-related attitudes concerning close relationships these dimensions were not always replicated (Kurdek, 2002; cf. Steffanowski et al., 2001). However, two factors, that is, *anxiety* and *avoidance*, were repeatedly isolated in several studies and with various instruments (Grau, 1999; Simpson et al., 1992; Kurdek, 2002); and these two are well in concordance with the dimensions in Bartholomew's model (Griffin & Bartholomew, 1994b). So, the present study follows this concept of adult attachment.

Table 1. Four-category Model of Adult Attachment according to Bartholomew and Horowitz (1991; Griffin and Bartholomew, 1994a, 1994b; cf. Steffanowski et al., 2001)

	Positive Model of Self Low anxiety	Negative Model of Self High anxiety
Positive model of other Low avoidance	Secure	Preoccupied
Negative model of other High avoidance	Dismissing	Fearful

Securely attached individuals are comfortable with intimacy in close relationships and show little anxiety. They hold a positive view of themselves as well as of others, seeing them as reliable and available when needed. This allows securely attached individuals to build close relationships. Individuals categorized as *dismissing* have a positive view of themselves, but a negative view of others. They dismiss the need for close relationships, emphasize their own independence, and show little separation anxiety. Individuals categorized as *preoccupied* have a negative view of themselves but a positive view of others. They see themselves as unworthy and not likeable and they strive for recognition by significant others in order to enhance their own self-esteem. They tend to seek closeness desperately and fear rejection. Finally, individuals categorized as *fearful* view themselves as unworthy of love and experience others as not trustworthy or uncaring. They avoid close relationships out of the fear of being disappointed and rejected. On the other hand, they are dependent on acknowledgement from others and therefore show separation anxiety as well.

What kind of relationship exists between an adult's predominant attachment style and his or her hypnotic suggestibility? Individuals who are easily hypnotized should surely show more signs of secure attachment: only securely attached individuals might allow themselves to risk a certain loss of reality and venture into hallucinatory or illusionary perception. In other words, only a mature, secure self can allow a 'regression in the service of the ego', in the sense described by Gill and Brenman (1959).

When asking psychologists who are familiar with attachment theory about this, about half of them agreed with this idea, which implies a rather positive view of hypnotic suggestibility. The other half, however, suggested the opposite: that highly suggestible individuals might be rather insecurely attached, as only such individuals would willingly let their own perception, feelings, thoughts, and actions be influenced by the suggestions of others. This position involves a problematic view of suggestibility, in the sense that insecure attachment patterns are related to psychological problems (see Mikulincer & Shaver, 2007). So, this is the starting point of the present study: the degree of hypnotic suggestibility is to be put into relationship with attachment styles in adults.

METHOD

Undergraduate students were recruited by postings and announcements during lectures in psychology and related subjects at a German university. In total 118 students participated, 25 men and 93 women; one participant had to be excluded because of missing data. Of the

participants, 65 (56%) reported to be in a relationship and 51 (44%) were single (in one case relationship status was not reported). Participants were aged between 18 and 68 years ($M = 24.76$, $SD = 8.42$), the majority being under the age of 25 (80%). Age, therefore, was not normally distributed.

The survey was conducted in groups of 6 to 20 persons. After a short introduction the participants completed the Relationship Scale Questionnaire (RSQ; Griffin & Bartholomew, 1994a). The RSQ is a self-report measure, containing items of a previous measure and items from other authors as well (Hazan & Shaver, 1987; Collins & Read, 1990). Participants rate 30 statements that address attitudes towards relationships on a five-point-scale. The subscales proposed by Griffin and Bartholomew (1994a) to assess the four attachment prototypes could not be replicated with a German version of the RSQ (Mestel, 1994) in a clinical sample ($n = 305$; Steffanowski et al., 2001). Instead, the authors proposed four newly derived scales: *anxiety*, *avoidance*, *lack of trust*, and *independence*, providing adequate internal consistency with $\alpha = 0.81$ for *anxiety*, 0.77 for *avoidance* and *lack of trust*, and 0.72 for *independence*.

The *anxiety* scale includes items such as 'I worry about being abandoned' or 'I want to be completely emotionally intimate with others', expressing a need for close relationships. On the other hand, the *avoidance* scale includes items such as 'I am uncomfortable being close to others' and expresses discomfort in close relationships. The *lack of trust* scale includes items such as 'People are never there when you need them' and 'I worry about having others not accept me'. Lastly, the *independence* scale includes items such as 'It is very important to me to feel independent'.

The two scales *anxiety* and *avoidance* correspond well to the dimensions already proposed by other authors (e.g. Simpson et al., 1992) and can be used to identify a person's prevailing attachment pattern according the model of Bartholomew and Horowitz (1991). For classification, we followed the proposed cut-off scores in Steffanowski et al. (2001), being > 2.88 for *anxiety* and > 2.75 for *avoidance*. Low values in both scales correspond to a secure attachment style; when *anxiety* scores are high and *avoidance* scores are low a preoccupied attachment style can be assumed; low *anxiety* and high *avoidance* point to a dismissing attachment style; and lastly, high values in both scales point to a fearful attachment style.

Following the completion of the RSQ, the Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS:A; Shor & Orne, 1962) was presented from a CD in a German version translated and evaluated by Bongartz (1985). The HGSHS:A is a widely used and valid measure for screening for hypnotic suggestibility within groups. It consists of 12 pass/fail items (suggestions) with ascending item difficulty (head falling, eye closure, hand lowering, arm immobilization, finger lock, arm rigidity, hands moving, communication inhibition, hallucination, eye catalepsy, post-hypnotic suggestion, and amnesia). According to their scores, subjects are usually assigned to one of three levels of hypnotic suggestibility, low (0–4), medium (5–8), and high (9–12). Bongartz (1985) found a rank-order correlation for item difficulty from 0.92 to 0.95 compared to the American, Australian, and Canadian samples, showing a high concordance between the four samples, and a reliability of 0.62 for the German scale (compared to 0.80 for the American, 0.76 for the Australian, and 0.84 for the Canadian scale). In total, the survey took 70 to 90 minutes. Participants received €8 for participating in the study (for more details see Bazijan, 2009).

RESULTS

The HGSHS:A scores were not perfectly normally distributed ($SD = 0.121$; $df = 117$; $p < 0.001$). The deviation is, however, negligible with a skewness of -0.10 and a kurtosis of -0.53 . On average, 6.42 items were passed ($SD = 2.61$) which corresponds well to German norms (6.5 according to Bongartz, 1985). Of the participants 23% were classified as low in suggestibility ($n = 27$; scoring 0–4), 52% as moderate ($n = 61$; 5–8), and 25% as high in suggestibility ($n = 29$; 9–12). Hypnotic suggestibility did not correlate with age but we found differences regarding sex, $t(115) = -2.52$, $p = 0.013$: women ($M = 6.73$, $SD = 2.87$) scored significantly higher than men ($M = 5.28$, $SD = 2.46$). However, this should be interpreted with care regarding the uneven gender distribution (79% female). For means and standard deviations of RSQ subscales see Table 2. Using a conservative $p < 0.001$ for testing for normal distribution, all four scales could be regarded as adequately normally distributed. The age of the participants did not correlate with the RSQ subscales except for *anxiety*, insofar as older participants agreed less to the respective items, $r = -0.24$, $p < 0.01$ (Spearman rank correlation). Also, there were no significant differences regarding gender except for the fact that women reported slightly more *avoidance* ($M = 2.39$, $SD = 0.63$) than men ($M = 2.11$, $SD = 0.60$), $t(115) = -1.98$, $p = 0.05$. Again, given the uneven gender distribution in our sample, this should not be overrated.

Table 2. RSQ subscales and their correlation with hypnotic suggestibility (HGSHS:A)

RSQ subscale	M (SD)	r ^a (RSQ x HGSHS:A)
Anxiety	2.82 (0.56)	0.28**
Avoidance	2.33 (0.63)	0.15
Lack of trust ^b	2.32 (0.71)	0.27**
Independence	3.81 (0.64)	-0.11

Notes: $n = 117$, ** $p < 0.01$.

^a Pearson correlation coefficient.

^b $n = 115$ (data were missing for 2 participants).

Table 2 also contains the correlations of the RSQ subscales with the HGSHS:A. We found significant associations with the *anxiety* scale, insofar as participants who showed more anxiety proved to be more suggestible. Additionally, *lack of trust* correlated with hypnotic suggestibility: participants who expressed less self-worth and trust in others scored higher on the HGSHS:A. In both cases, however, effects were rather small. Table 3 shows the intercorrelations of the RSQ subscales: the subscale *lack of trust* was both significantly correlated with *anxiety* as well as *avoidance*, all three scales expressing insecure attachment attitudes in relationships. So it makes perfect sense that all three should show correlations with the HGSHS:A in the same direction, if any. When deducing attachment patterns from the RSQ subscales, *lack of trust* is not considered. Regarding the intercorrelations this makes sense also, as this scale does not differentiate between preoccupied and dismissing attachment styles.

Table 3. Intercorrelations of RSQ subscales

RSQ subscales	Anxiety	Avoidance	Lack of trust
Anxiety	–		
Avoidance	0.19*	–	
Lack of trust ^b	0.37**	0.57**	–
Independence	-0.24**	0.31**	0.05

Notes: $n = 117$, * $p < 0.05$, ** $p < 0.01$.

^b $n = 115$ (data were missing for 2 participants).

Following the classification described in the method section (i.e. on the basis of the two subscales *anxiety* and *avoidance*), barely half of the participants (47%, $n = 55$) showed a secure attachment pattern. Accordingly, more than half of the participants were classified as insecure: 31% ($n = 36$) of the whole sample were classified as preoccupied, 9% ($n = 11$) as dismissing, and 13% ($n = 15$) as fearful. In Table 4 the suggestibility scores according to attachment style are presented for the whole sample, for the subgroups, as well as for men and women, respectively.

Table 4. Attachment styles and hypnotic suggestibility (HGSHS:A) in the total sample and according to gender

Attachment style	Hypnotic suggestibility <i>M</i> (SD); <i>n</i> (%)		
	All ($n = 117$)	Women ($n = 92$)	Men ($n = 25$)
Secure	5.75 (2.70); 55 (47%)	6.27 (2.63); 41 (45%)	4.21 (2.39); 14 (56%)
Insecure	7.02 (2.39); 62 (53%)	7.10 (2.27); 51 (55%)	6.64 (2.94); 11 (44%)
Preoccupied	7.00 (2.75); 36 (58%) ^a	7.04 (2.62); 28 (55%) ^a	6.88 (3.36); 8 (73%) ^a
Dismissing	6.91 (1.81); 11 (18%) ^a	6.80 (1.87); 10 (20%) ^a	8.00 (-); 1 (9%) ^a
Fearful	7.13 (1.89); 15 (24%) ^a	7.46 (1.81); 13 (25%) ^a	5.00 (0.00); 2 (18%) ^a

^a These percentages refer to percent of the respective subgroup (i.e. to the subgroups with insecure attachment in case of the preoccupied, dismissing, or fearful style).

When looking at suggestibility depending on attachment style (see Figure 1), there was only a small to moderate effect, which did not achieve statistical significance, $F(3, 113) = 2.41$, $p = 0.071$, $r = 0.25$. However, we found an apparent trend, insofar that the securely attached group had the lowest mean on the HGSHS:A. When combining the three insecurely

attached groups (preoccupied, dismissive, and fearful; $n = 62$, with a mean suggestibility of $M = 7.02$, $SD = 2.39$) and comparing them to the group showing a secure attachment style ($n = 55$; $M = 5.75$, $SD = 2.70$), the difference was significant, $t(115) = -2.70$, $p = 0.008$, $r = 0.24$.

Figure 1. Hypnotic suggestibility in relation to attachment style ($n = 117$)

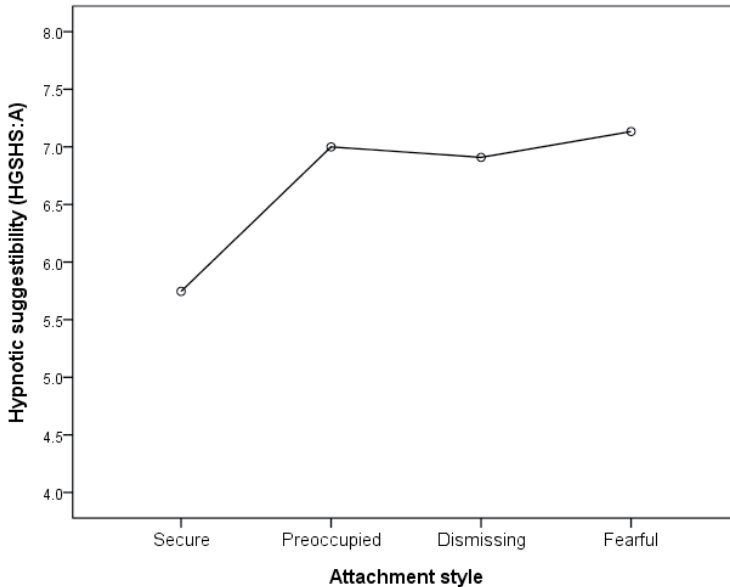
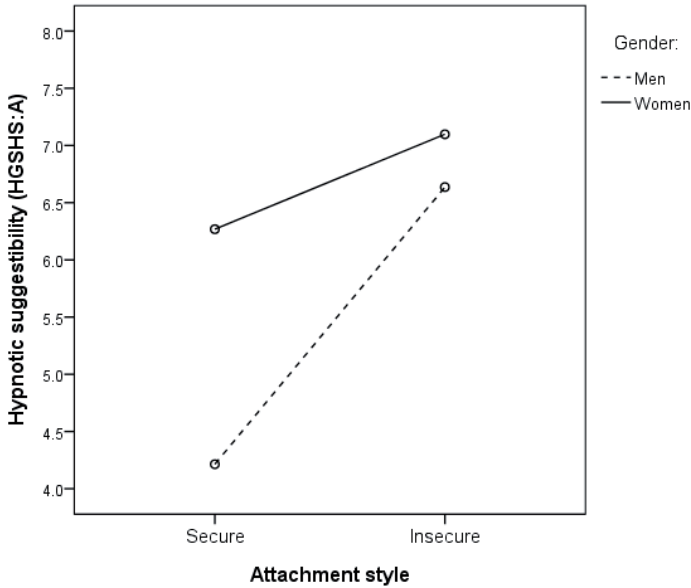


Table 4 shows that slightly more women were insecurely attached than securely, whereas with the men it was vice versa. However, there was no significant association between gender and type of attachment (secure vs. insecure), $\chi^2(1) = 1.03$; $p = 0.31$. Still, we took a closer look at the role of gender¹ as it was related both to suggestibility and to the avoidance scale of the RSQ. To account for a possible interaction we computed a two-way ANOVA, with gender and kind of attachment style as factors. To do so, we again combined all the insecure patterns into one insecure style to avoid too low cell frequencies, and first tested for homogeneity of variances (which was given). There was a significant main effect of gender, $F(1, 113) = 4.98$; $p = 0.028$, in the sense that women had higher scores on the HGSHS:A, as reported above. Also, the effect that insecure attachment was related to higher scores on the HGSHS:A remained significant, $F(1, 113) = 8.33$; $p = 0.005$. There was no significant interaction effect between gender and attachment, $F(1, 113) = 2.00$; $p = 0.16$, although Figure 2 suggests a possible interaction insofar as for males there seems to be a more pronounced relation between higher suggestibility and insecure attachment. This non-significant interaction should not be overrated, as there were only 25 men in our sample. Moreover, when excluding them and comparing suggestibility scores according to secure vs. insecure attachment only within the female sub-sample, this comparison was not significant, $t(90) = -1.62$, $p = 0.108$, $r = 0.17$.

¹ We thank John Gruzelier for his advice.

Figure 2. Hypnotic suggestibility in relation to attachment style and gender (n = 117)



DISCUSSION

In this pilot study with 117 undergraduate students we found moderate correlations of hypnotic suggestibility with certain attitudes concerning relationships and attachment styles. Participants who were able to engage well in a hypnotic group session, insofar as they passed more items of the HGSHS:A, showed rather adverse attachment attitudes when completing a German translation of the RSQ. Two of the scales showed positive correlations with suggestibility, namely *anxiety* and *lack of trust*. The latter is especially surprising because this scale includes items which express lack of trust in others (e.g. 'I find it difficult to trust others completely'). The *anxiety* scale expresses a similar form of attachment, insecurity, namely the fear of being abandoned by loved ones, but also wishing for very intimate relationships. In accordance with the model of Bartholomew and Horowitz (1991; cf. Table 1) and following Steffanowski et al. (2001) we used two scales, *anxiety* and *avoidance*, to classify for attachment styles. Considering the average age (young adults) of the present sample, the relatively high rate of participants who were thus classified as insecurely attached (more than half) is not surprising. Compared to the group of securely attached participants, the insecurely attached ones showed significantly higher hypnotic suggestibility. Detailed examination of the groups of insecurely attached participants (preoccupied, dismissing, and fearful) yielded no significant differences. Furthermore, if males were excluded from the analysis and computation was made only for females, the difference in suggestibility between securely and insecurely attached women was less pronounced and non-significant. This might be so only because of a general loss of power, or could point to the possibility that for women, there is an even more modest relation between suggestibility and attachment. In any case, the differences between secure and

insecure attachment were rather small and should not be overrated. Actually, we were not able to replicate these results in ongoing research with an apparently similar sample.

Still, we elaborate on possible implications of these findings in the following discussion because we want to stimulate further research on this topic. What's more, these results came as a surprise to the first author, while confirming the contradicting hypothesis proposed by his co-authors: high suggestibility is not associated with a secure, but rather with an insecure attachment style. Accordingly, hypnotic suggestibility would not belong to the 'positive' but rather to the 'problematic' aspects of human personality. This is in contrast to the hypno-analytical view, where high hypnotic suggestibility rather indicates a stable ego, which—consolidated by early secure attachment experiences—engages confidently in a regression in the service of the ego (Gill & Brenmann, 1959); or rather in a topographic regression, consisting in 'a disruption of ego and sensorimotor functioning, and a relative prominence of primary-process mentation' (Nash, 1992: 161); that is in different reality distorting experiences such as hypnotic phenomena. In a hypno-analytical view, only a stable ego can abandon self-control temporarily and comply with a sort of alien control; only a stable ego is capable of abandoning its own authorship or rather its genuine sense of agency for a while and easily to take over all these important ego modes again afterwards. However, these new results point to the contrary: high hypnotic suggestibility would indicate a personality who is—with all the negative connotations—defined as 'insecurely attached' within the psychoanalytically coined attachment theory. Such individuals would rather tend to or perhaps even depend on quickly detecting the clues and messages of relevant others and reacting to them more or less by intuition. They might not seek the intimacy of others 'by choice', but because of separation anxiety.

A somewhat fitting result comes from a study by Granqvist et al. (2009) who found disorganized attachment style (i.e. an insecure attachment style due to unresolved traumas) associated with a stronger affinity for so called New Age spirituality, with absorption as a mediator. Accordingly, the authors attributed an increased general suggestibility to such a tendency for experiencing paranormal phenomena and esoteric beliefs.

If securely attached persons are hypnotically less suggestible, this would be connoted rather positively within the architecture of attachment theory; securely attached persons have less separation anxiety and are therefore able to engage in intimate, trustful relationships; they have a positive image of themselves and of others and are open for possible changes in their world view. These changes obviously can't simply be 'suggested' to them (in the original Latin sense of *subgerere*—to push/put under), but have to be explained to them in open discourse, which allows for disagreement; in other words, they won't be easily subjected to anything. That is to say, securely attached, low suggestible individuals might prove to be hardly or not at all susceptible to manipulative distortions of their perception of reality; they rather would insist on the necessity or correctness of their own assumptions of reality; they would not be fooled and would not succumb to 'suggestion'. This description probably better fits the self-concept of a rational, enlightened human being.

To think this through, however, would be 'problematic' for us as professionals as well, for high suggestibility would thereby acquire a psychopathological flavour. Highly suggestible patients, students, and trainees could not then feel like stable, imaginative, and creative individuals, but would have to fear to standing out as insecure or 'airy-fairy'. However, we view such an interpretation as insufficient. Already Barber (1999; cf. Cardena, 1999) has postulated different types of suggestible individuals. Green and Lynn (2008) showed that

by far not all highly suggestible individuals are day-dreamers as well, in the sense of fantasy proneness. Accordingly, the group of highly suggestible individuals might prove heterogeneous regarding attachment style. Recently, Terhune and Cardeña (2010) gathered further evidence for two distinct response patterns of highly suggestible individuals: one sub-type was connected rather to negative affect and dissociation and the other one was characterized by the ability to direct attention inwards.

Overall, our present results regarding attachment styles show a moderate correlation, which is why it seems reasonable not only to seek replication with a larger sample but also to consider moderator variables (e.g. dissociation or IQ). Apart from not considering moderators, one further limitation of the present study is its generalizability because most participants were rather young psychology students.

The assessment of attachment styles with the RSQ by Griffin and Bartholomew (1994a), which was used in a German adaptation, might be problematic also. The alternatively proposed subscales for the German version show acceptable psychometric properties but were, however, found in a clinical sample (Steffanowski et al., 2001). A sufficient standardization is still needed, which is why the classification into four prototypical attachment styles in particular has to be viewed with care. Therefore, we repeated the analysis described above with a more conservative classification, in which we disregarded the data of 16 participants whose values were border cases lying between two attachment styles. The results largely remained the same, which speaks against the possibility of a chance event. Nevertheless, a study assessing attachment styles with the gold standard in attachment research, the Adult Attachment Interview (AAI; Main & Goldwyn, 1985), would be more than desirable, as the RSQ measures conscious attitudes in regard to romantic relationships rather than actual attachment behaviour.

REFERENCES

- Ainsworth M, Blehar M, Waters E, Wall S (1978). *Patterns of Attachment: A Psychological Study of the Strange Situation*. Hillsdale, NJ: Lawrence Earlbaum.
- Barabasz M (1990). Bulimia, hypnotizability and dissociative capacity. In van Dyck R, Spinhoven P, van der Does AJW, van Rood YV, de Moor W (eds) *Hypnosis: Current Theory, Research and Practice*. Amsterdam: Vrije University Press, pp. 207–214.
- Barber TX (1999). A comprehensive three-dimensional theory of hypnosis. In Kirsch I, Capafons A, Cardeña-Buelna E, Amigó S (eds) *Clinical Hypnosis and Self-Regulation: Cognitive-Behavioral Perspectives*. Washington, DC: American Psychological Association, pp. 21–48.
- Bartholomew K, Horowitz LM (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology* 61: 226–244.
- Bazijan A (2009). Zum Zusammenhang zwischen Hypnotisierbarkeit und Bindungsstilen (On the correlation of hypnotizability and attachment styles). Diploma thesis, Ludwig-Maximilians-Universität, Munich.
- Bernstein E, Putnam FW (1986). Development, reliability and validity of a dissociation scale. *Journal of Nervous and Mental Disease* 147: 727–735.
- Bongartz W (1985). German norms for the Harvard Group Scale of Hypnotic Susceptibility, Form A. *International Journal of Clinical and Experimental Hypnosis* 33(2): 131–139.
- Bowlby J (1969). *Attachment and Loss*. Vol. 1: *Attachment*. New York: Basic Books.

- Braffman W, Kirsch I (1999). Imaginative suggestibility and hypnotizability: An empirical analysis. *Journal of Personality and Social Psychology* 77: 578–587.
- Breuer J, Freud S (1895/1957). *Studies on Hysteria*, tr. Strachey J. New York: Basic Books.
- Cardeña E (1999). Culture and psychopathology: The hidden dimensions in T. X. Barker's theory. *Contemporary Hypnosis* 16(3): 132–138.
- Cardeña E, Terhune D (2008). A distinct personality trait? The relationship between hypnotizability, absorption, self-transcendence, and mental boundaries. In *Proceedings of the 51st Annual Convention of the Parapsychological Association*. Columbus, OH: Parapsychological Association, pp. 61–73.
- Cardeña E, Terhune DB, Löff A, Buratti S (2009). Hypnotic experience is related to emotional contagion. *International Journal of Clinical and Experimental Hypnosis* 57: 33–46.
- Charcot JM (1882). Sur les divers états nerveux déterminés par l'hypnotisation chez les hystériques. *Comptes-Rendus hebdomadaires des Séances de l'Académie des Sciences* 94: 403–405.
- Collins NL, Read SJ (1990). Adult attachment, working models and relationship quality in dating couples. *Journal of Personality and Social Psychology* 58: 644–663.
- Crawford HJ (1989). Cognitive and physiological flexibility: Multiple pathways to hypnotic responsiveness. In Gheorghiu VA, Netter P, Eysenck HJ, Rosenthal R (eds) *Suggestion and Suggestibility: Theory and Research*. Heidelberg: Springer, pp. 155–168.
- Crawford HJ, Horton JE, Lichtenberg P (2004). Die Neurowissenschaft der Hypnose: Der Einfluss von genetischen, neuroanatomischen und Informationsgeschwindigkeitsfaktoren auf die hypnotische Antwortbereitschaft (The neuroscience of hypnosis: Contributions of genetic, neuroanatomical and speed of information processing factors to hypnotic responsiveness). *Hypnose und Kognition* 21(1+2): 93–117.
- Dienes Z, Brown E, Hutton S, Kirsch I, Mazzoni G, Wright DB (2009). Hypnotic suggestibility, cognitive inhibition, and dissociation. *Consciousness and Cognition* 18(4): 837–847.
- Farthing CW, Venturino M, Brown SW (1983). Relationship between two different types of imagery vividness questionnaire items and three hypnotic susceptibility scale factors: A brief communication. *International Journal of Clinical and Experimental Hypnosis* 31(1): 8–13.
- Forel A (1889). *Der Hypnotismus: Seine Bedeutung und seine Handhabung* (The Hypnotism: Its Meaning and Usage). Stuttgart: Enke.
- Frankel FH (1974). Trance capacity and the genesis of phobic behaviour. *Archives of General Psychiatry* 31: 261–263.
- Frischholz EJ, Lipman LS, Braun BG, Sachs RG (1992). Psychopathology, hypnotizability and dissociation. *American Journal of Psychiatry* 149(11): 1521–1525.
- Fromm E (1992). An ego-psychological theory of hypnosis. In Fromm E, Nash MR (eds) *Contemporary Hypnosis Research*. New York: Guilford Press, pp. 131–148.
- Gheorghiu VA, Netter P, Eysenck HJ, Rosenthal R (eds) (1989). *Suggestion and Suggestibility: Theory and Research*. Berlin: Springer.
- Gill MM, Brenman M (1959). *Hypnosis and Related States: Psychoanalytic Studies in Regression*. New York: International Universities Press.
- Granqvist P, Fransson M, Hagekull B (2009). Disorganized attachment, absorption, and new age spirituality: A mediational model. *Attachment & Human Development* 11: 385–403.

- Grau I (1999). Skalen zur Erfassung von Bindungsrepräsentationen in Paarbeziehungen (Scales for recording representations of attachment in couples). *Zeitschrift für Differentielle und Diagnostische Psychologie* 20: 142–152.
- Green JP, Lynn JL (2008). Fantasy proneness and hypnotizability: Another look. *Contemporary Hypnosis* 25(3–4): 156–164.
- Griffin DW, Bartholomew K (1994a). Models of the self and other: Fundamental dimensions underlying measures of attachment. *Journal of Personality and Social Psychology* 67: 430–445.
- Griffin DW, Bartholomew K (1994b). The metaphysics of measurement: The case of adult attachment. In Bartholomew L, Perlman D (eds) *Advances in Personal Relationships*. Vol. 5: *Attachment Processes in Adulthood*. London: Jessica Kingsley Publishers, pp. 17–52.
- Gruzelier JH (2000). Unwanted effects of hypnosis: A review of the evidence and its implications. *Contemporary Hypnosis* 17(4): 163–193.
- Gruzelier JH (2004). Neurophysiologische Erörterung der ungünstigen Aspekte der Hypnose unter besonderer Berücksichtigung der Bühnenhypnose (Neurophysiological considerations of unwanted effects of hypnosis with special reference to stage hypnosis). *Hypnose und Kognition* 21(1–2): 225–259.
- Gruzelier JH, De Pascalis V, Jamieson G, Laidlaw T, Naito A, Bennett B, Dwivedi P (2004). Relations between hypnotizability and psychopathology revisited. *Contemporary Hypnosis* 21(4): 169–175.
- Gruzelier J, Doig A (1996). The factorial structure of schizotypy. Part II: Cognitive asymmetry, arousal, handedness, and sex. *Schizophrenia Bulletin* 22: 621–634.
- Hartmann H (1958). *Ego Psychology and the Problem of Adaptation*. New York: International Universities Press.
- Hazan C, Shaver P (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology* 52(3): 511–524.
- Hilgard ER (1965). *Hypnotic Susceptibility*. New York: Harcourt, Brace & World.
- Hilgard ER (1974). Toward a neodissociation theory: Multiple cognitive controls in human functioning. *Perspectives in Biology and Medicine* 17(3): 301–316.
- Hilgard ER (1989). Eine Neo-Dissoziationstheorie des geteilten Bewußtseins (A neodissociation theory of the divided consciousness). *Hypnose und Kognition* 6(2): 3–20.
- Hilgard JR (1970). *Personality and Hypnosis: A Study of Imaginative Involvement*. Chicago, IL: University of Chicago Press.
- Horton JE, Crawford HJ, Harrington G, Downs JH (2004). Increased anterior corpus callosum size associated positively with hypnotisability and the ability to control pain. *Brain and Cognition* 127: 1741–1747.
- Hull CL (1933). *Hypnosis and Suggestibility: An Experimental Approach*. New York: D. Appleton-Century Company.
- Jamieson G, Gruzelier JH (2001). Hypnotic susceptibility is positively related to a subset of schizotypy items. *Contemporary Hypnosis* 18(1): 32–37.
- Janet P (1925). *Psychological Healing: A Historical and Clinical Study*. New York: Macmillan.
- Kirsch I (1985). Response expectancy as a determinant of experience and behavior. *American Psychologist* 40: 1189–1202.

- Kirsch I, Council JR (1992). Situational and personality correlates of hypnotic responsiveness. In Fromm E, Nash MR (eds) *Contemporary Hypnosis Research*. New York: Guilford Press, pp. 267–291.
- Kluft RP (1992). Dissociation and subsequent vulnerability and revictimization: Implications for the facilitation of psychotherapy with hypnosis. In Bongartz W (ed) *Hypnosis: 175 Years after Mesmer – Recent Developments in Theory and Application*. Konstanz: Universitätsverlag, pp. 323–338.
- Kluft RP (2002). Advances in the treatment of dissociative identity disorder: An algorithm for evaluation and intervention with special attention to the role of hypnosis. In Peter B, Bongartz W, Revenstorf D, Butollo W (eds) *Munich 2000: The 15th International Congress of Hypnosis*. Munich: MEG-Stiftung, pp. 31–39.
- Kranhold C, Baumann U, Fichter M (1992). Hypnotizability in bulimic patients and controls. *European Archives of Psychiatry and Clinical Neuroscience* 242: 72–76.
- Kurdek LA (2002). On being insecure about the assessment of attachment styles. *Journal of Social and Personal Relationships* 19: 811–834.
- Lichtenberg P, Bachner-Melman R, Epstein RP, Crawford HJ (2004). Hypnotic susceptibility: Multidimensional relationships with Cloninger's tridimensional personality questionnaire, COMT polymorphisms, absorption, and attentional characteristics. *International Journal of Clinical and Experimental Hypnosis* 52(1): 47–72.
- Lynn SJ, Sivec H (1992). The hypnotizable subject as creative problem-solving agent. In Fromm E, Nash MR (eds) *Contemporary Hypnosis Research*. New York: Guilford Press, pp. 292–333.
- Main M, Goldwyn R (1985). *Adult Attachment Classification and Rating System*. Unpublished manuscript, University of California, Dept of Psychology, Berkeley.
- Malinoski PT, Lynn SJ (1999). The plasticity of early memory reports: Social pressure, hypnotizability, compliance, and interrogative suggestibility. *International Journal of Clinical and Experimental Hypnosis* 47: 320–345.
- Mestel R (1994). *Deutsche Übersetzung des RSQ* (German translation of the RSQ). Grönbach: Klinik für Psycho-somatische Medizin.
- Mikulincer M, Shaver PR (2007). *Attachment in Adulthood: Structure, Dynamics, and Change*. New York: Guilford Press.
- Morgan AH (1973). The heritability of hypnotic susceptibility in twins. *Journal of Abnormal Psychology* 82: 55–61.
- Morgan AH, Johnson DL, Hilgard ER (1974). The stability of hypnotic susceptibility: A longitudinal study. *International Journal of Clinical and Experimental Hypnosis* 22(3): 249–257.
- Nash MR (1992). Hypnosis, psychopathology, and psychological regression. In Fromm E, Nash MR (eds) *Contemporary Hypnosis Research*. New York: Guilford Press, pp. 149–169.
- Nordenstrom BK, Council JR, Meier BP (2002). The 'big five' and hypnotic suggestibility. *International Journal of Clinical and Experimental Hypnosis* 50(3): 276–281.
- Peter B (2009a). Hypnotische Phänomene und psychopathologische Symptome (Hypnotic phenomena and psychopathological symptoms). In Revenstorf D, Peter B (eds) *Hypnose in Psychotherapie, Psychosomatik und Medizin. Ein Manual für die Praxis* (2nd edn). Heidelberg: Springer, pp. 41–49.

- Peter B (2009b). Is it useful to induce a hypnotic trance? A hypnotherapist's view on recent neuroimaging results. *Contemporary Hypnosis* 26(3): 132–145.
- Piccione C, Hilgard ER, Zimbardo PG (1989). On the degree of stability of measured hypnotizability over a 25-year period. *Journal of Personality and Social Psychology* 56(2): 289–295.
- Piesbergen C, Peter B (2006). An investigation of the factor structure of the Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS:A). *Contemporary Hypnosis* 23(2): 59–71.
- Shames VA, Bowers PG (1992). Hypnosis and creativity. In Fromm E, Nash MR (eds) *Contemporary Hypnosis Research*. New York: Guilford Press, pp. 334–363.
- Shor RE, Orne EC (1962). *Harvard Group Scale of Hypnotic Susceptibility, Form A*. Palo Alto, CA: Consulting Psychologists Press.
- Simpson JA, Rholes WS, Nelligan JS (1992). Support seeking and support giving within couples in an anxiety-provoking situation: The role of attachment styles. *Journal of Personality and Social Psychology* 62: 434–446.
- Spiegel D (1990). Trauma, dissociation, and hypnosis. In Kluft RP (ed) *Incest-Related Syndromes of Adult Psychopathology*. Washington, DC: American Psychiatric Press, pp. 247–261.
- Steffanowski A, Oppl M, Meyerberg J, Schmidt J, Wittmann WW, Nübling R (2001). Empirische Ergebnisse: Psychometrische Überprüfung einer deutschsprachigen Version des Relationship Scales Questionnaire (RSQ) (Empirical Results: Psychometric Evaluation of a German Version of the RSQ). In Bassler M (ed) *Störungsspezifische Therapieansätze: Konzepte und Ergebnisse*. Gießen: Psychosozial-Verlag, pp. 320–342.
- Tart CT, Hilgard ER (1966). Responsiveness to suggestions under 'hypnosis' and 'waking-imagination' conditions: A methodological observation. *International Journal of Clinical and Experimental Hypnosis* 14(3): 247–256.
- Tellegen A, Atkinson G (1974). Openness to absorbing and self-altering experiences ('absorption'), a trait related to hypnotic susceptibility. *Journal of Abnormal Psychology* 83: 268–277.
- Terhune DB, Cardeña E (2010). Differential patterns of spontaneous experiential response to a hypnotic induction: A latent profile analysis. *Consciousness and Cognition*. 19(4): 1140–1150.
- Vanderlinden J, Spinhoven P, Vandereycken W, van Dyck R (1995). Dissociative and hypnotic experiences in eating disorder patients: An exploratory study. *American Journal of Clinical Hypnosis* 38(2): 97–108.
- Weitzenhoffer AM (1953). *Hypnotism: An Objective Study in Suggestibility*. New York: Wiley.
- Weitzenhoffer AM (1980). Hypnotic susceptibility revisited. *American Journal of Clinical Hypnosis* 22(3): 130–146.
- Wickramasekera I (1994). Psychophysiological and clinical implications of the coincidence of high hypnotic ability and high neuroticism during threat perception in somatization disorders. *American Journal of Clinical Hypnosis* 37(1): 22–33.
- Wickramasekera IE, Szlyk JP (2003). Could empathy be a predictor of hypnotic ability? *International Journal of Clinical and Experimental Hypnosis* 51: 390–399.

- Wilson SC, Barber TX (1982). The fantasy-prone personality: Implications for understanding imagery, hypnosis, and parapsychological phenomena. In Sheikh AA (ed) *Imagery: Current Theory, Research, and Application*. New York: Wiley, pp. 340–387.
- Wright DB, Loftus EF (1999). Measuring dissociation: Comparison of alternative forms of the dissociative experiences scale. *American Journal of Psychology* 112: 497–519.

Correspondence to Burkhard Peter, MEG-Stiftung, Konradstr. 16, 80801 Munich, Germany
Email: Burkhard Peter (Burkhard-Peter@t-online.de)
(Please note, the author's family name is Peter and his first name is Burkhard.)