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Suggestibility, Intelligence, Memory Recall and Personality: An Experimental Study

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Summary: A new suggestibility test, potentially useful in the context of police interrogation, was administered to 45 subjects who also completed the Wechsler Adult Intelligence Scale and the Eysenck Personality Questionnaire. Suggestibility was significantly related to low intelligence, poor memory recall, neuroticism and social desirability.

A test of suggestibility has been devised for use with subjects interrogated by the police to assist in assessing the reliability of their evidence. It has been used to compare intelligence, memory recall and personality with "suggestibility" as measured by the test.

Traditional measures of suggestibility are very indirectly linked to the two distinct types of suggestibility important in police work. In the first type subjects may give answers which have no objective basis, but are direct responses to the suggestive nature of the questions (Loftus, 1974). In the second the interrogator may be able to shift unwanted but perhaps true answers by challenge and negative feedback. The suggestibility scale presented in this paper attempts to measure these two types of suggestibility.

Theoretically and empirically, intelligence and memory have *a priori* relevance to suggestion-produced responses. People of low intelligence and those who remember little of the incident about which they are being interrogated would be expected to be particularly likely to yield to suggestions because of mistrust of their own judgement. Similarly, people who have a strong need to present themselves in a favourable light (high lie scorers) are more likely to want to please and therefore accept suggestion. Individuals high on trait anxiety would be operating at a high drive level, and thus be more suggestible.

Method

There were 45 subjects, 26 males and 19 females with a mean age of 30.3 and 33.4 years respectively. The subjects were approached through individual contacts. They were drawn from a variety of occupations — professional, skilled, semi-skilled and unskilled.

The scale was in two parts (full details, including scoring, are available from the author). The first part consisted of a story that the subjects were required to listen to from a tape recorder. They were instructed to try to remember as much of the story as they could. The second part consisted of 20 specific questions about the content of the story, from which the subjects' suggestibility scores were derived. The memory passage was similar to but considerably longer than that in the Wechsler Memory Scale. It was made sufficiently long for the subjects to be unable to remember some of the detail.

After the story had been read out the subjects were told that they were going to be asked questions about the story and they were instructed to answer the questions as accurately as possible. The scale comprised three groups of questions as follows:

1. There were 10 Yes and No questions which have certain suggestive effect and are more often answered in the affirmative than the negative. These included such questions as: 'Did the woman's handbag get damaged in the struggle?'; 'Did the woman's screams frighten the assailants?'; 'Did the woman's glasses break in the struggle?' No such events were mentioned in the story so that an affirmative answer was used in the suggestibility score.

2. Five questions were 'false alternative' questions such as: 'Did the woman hit one of the assailants with her fist or handbag?', 'Did the woman have one or two children?', 'Were the assailants armed with knives or guns?'. In each case neither alternative was correct, so that if an alternative answer was given then a suggestibility score was earned.

3. Five questions were 'true' questions; that is, the correct answer was an affirmative one. These questions were interspersed among the 15 suggestibility questions in groups 1 and 2 and were included to make the purpose of the test less obvious. The questions in this group were not included in the scoring.

In order to test how easily subjects could be made to change their replies under pressure, they were informed after completing the 20 questions, that they had made a number of errors on the first trial and it was therefore necessary to go through the questions once more. The subjects were instructed to be more accurate than before.

Therefore, the suggestibility scale was designed to detect two types of errors. The first related to how much the subjects responded to suggestive questions. This was labelled a Yield Score, the range of possible values being 0–15 and obtained during the first trial only. The second type of error related to how much subjects could be made to change their answers under the pressure of negative feedback. This was labelled a Shift Score, the range of possible scores being 0–15 and obtained during the second trial only.

Procedure

The experiment was introduced as an investigation into the relationship between memory, personality and verbal and non-verbal skills. The story was presented as the first task, the subjects then recalling verbally the content of the story. This gave an immediate recall score. The short Wechsler Adult Intelligence Scale (WAIS), comprising the comprehension, similarities, vocabulary (prorated verbal IQ), block design and object assembly (prorated performance IQ), was subsequently administered, followed by the Eysenck Personality Questionnaire (EPQ). The subjects were than asked again how much they remembered about the story, giving delayed recall. The length of time between immediate and delayed recall was 40–50 minutes.

After answering each question on the suggestibility scale, the subjects were asked to indicate their degree of confidence in their replies on a scale from 0–100.

Results

The Pearson correlations between the suggestibility scores and the independant variables are shown in Table I. As predicted, suggestibility correlated negatively with intelligence and memory recall, but positively with neuroticism and social desirability. The correlations were most significant for the intelligence and memory variables. In general, the correlations were most marked when a total suggestibility score was used, rather than individual yield and shift scores. In addition, full scale IQ was a better predictor of suggestibility than either the verbal or performance scores on their own. Although the confidence scores correlated negatively with the yield scores, the relationship with total suggestibility was not significant. Age was found to be independent of suggestibility.

A stepwise regression analysis was made to measure how much of the variation in total suggestibility was accounted for by the joint linear influences of full scale IQ, immediate recall, delayed recall, percentage

TABLE I

Correlations between suggestibility scores and personality attributes in 45 subjects

	Suggestibility scores		
Tests	Yield score	Shift score	Total score
Intelligence:			
Full scale IQ	−0.40**	−0.49***	−0.55***
Verbal scale IQ	−0.43**	−0.34*	−0.47**
Performance scale IQ	−0.30*	−0.53***	−0.50***
Memory:			
Immediate recall	−0.45**	−0.44**	−0.55***
Delayed recall	−0.45**	−0.49***	−0.58***
Percentage recall	−0.27	−0.52***	−0.49***
Personality			
Psychoticism	−0.20	−0.14	−0.20
Neuroticism	0.25	0.20	0.28*
Extraversion	−0.20	−0.15	−0.22
Lie (social desirability)	0.35**	0.21	0.34**
Confidence:			
Trial 1	−0.29*	−0.08	−0.24
Trial 2	−0.30*	−0.10	−0.23

* $P < 0.05$. ** $P < 0.01$. *** $P < 0.001$

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memory recall (i.e. delayed recall as a proportion of immediate recall), neuroticism and social desirability. The six variables were found to account for 44 per cent of the variance. The largest part of the variance (i.e. 43 per cent) was accounted for by the intelligence and memory variables alone.

Discussion

The results from this study show that the subjects who were most suggestible during the experiment tended to be of lower intelligence and had poorer memory recall. They commonly had high trait anxiety (neuroticism) and presented themselves in a socially desirable way. As neuroticism and social desirability were themselves negatively correlated with intelligence and memory, they added only marginally to the variance of the independant variables.

The moderately high negative correlation between suggestibility and the percentage of delayed vs. immediate recall points to the importance of memory processes in the study of suggestibility. In addition to absolute memory levels, the extent to which memory deteriorates with time is highly significant. Memory is known to deteriorate most rapidly with time in clinical groups, especially where there is organic damage (Powell, 1979). It could be that people who have poor memory and whose memory recall deteriorates quickly with time distrust their own judgements and learn to rely on cues provided by others. They may therefore be particularly vulnerable to suggestive influences.

The finding that the subjects' ratings of confidence in their answers did not strongly correlate with suggestibility points to the unreliability of self-reported confidence levels. In general, subjects appeared highly confident in their replies, irrespective of whether or not they were giving correct answers. Furthermore, many subjects who changed their answers during the second trial were equally convinced as before that they were giving the correct answers.

Even though intelligence and memory recall were clearly related to suggestibililty there were some intelligent subjects with good memory who were quite suggestible. Conversely, some subjects of low intelligence and poor memory were not highly suggestible and were prepared to admit that they did not know the answers to the questions rather than giving in to suggestions and leading instructions. It is also important to bear in mind that even when subjects are generally highly suggestible, they may give a reasonably reliable account of basic facts that they clearly remember (Gudjonsson and Gunn, 1982).

It is hoped that the suggestibility scale presented in this paper will eventually be of use to psychiatrists and psychologists asked to assess defendants and witnesses for suggestibility. The scale appears to be quite subtle in that none of the subjects tested in the present experiment appeared to be aware of the real purpose of the test. However, advocating the general use of the scale in its present stage of development is quite unjustified. The validity of the scale in predicting suggestibility during an actual police interrogation remains to be seen.

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