The Relationship Between Personality Type and Memory Processes

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A preliminary investigation of memory capacities and strategies of different types is described.

Several research studies using the Myers-Briggs Type Indicator (MBTI) have shown that the Sensing-Intuitive scale appears to be highly related to academic performance, with Intuitives (N) typically having significantly better grades, achievement and motivational test scores than Sensors (S). (See Carlyn, 1977 and Hoffman & Betkouski, 1981 for reviews.) Intuitives have also been shown to score higher than Sensors on standardized IQ tests (e.g., McCaulley & Natter, 1974). This is not surprising, since grades are used as the validity criterion for most major IQ tests (e.g., The Stanford-Binet).

Although many factors are related to school performance, one of the major ones is the ability to encode and retrieve information from memory (Dunn & McConkie, 1972). It is possible that Sensors perform more poorly in school and on tests merely because they lack basic memory encoding and decoding strategies which come more naturally to Intuitives. The purpose of the present study, then, was to investigate this possibility by using a long-term memory task which better assesses complex information processing and retrieval than the typical measurements of short-term memory (digit span) or simple long-term information retrieval (general information) used in most standardized IQ tests like the Stanford-Binet and Weschler Scales. We then related subjects' responses on the memory task to selected MBTI scales (S-N and T-F).

The experimental task used was the Bousfield memory task (Bousfield, 1953). This task consists of presenting subjects with a list of words comprised of a fixed number of categories (e.g., professions, minerals, vegetables, etc.). The words of those categories are then presented in a quasi-random order for the purpose of masking the inherent list organization. Typically it is found that those subjects who organize their recall of the words into the inherent categories will recall a higher number of items than those who do not. These results using this and similar tasks have led many investigators (Mandler, 1967; McConkie & Dunn, 1971; Tulving, 1968) to argue that the organization that a subject discovers or imposes on information during learning is positively related to his or her later recall of that information.

Since the "Sensor" tends to take information in as it is presented, whereas an "Intuitor" tends to look for hidden meanings when encoding information, it was hypothesized that Sensing types would have more difficulty discovering the inherent list categories and hence would have lower recall (poorer memory) than Intuitive types. Further, given the descriptions of "Thinkers" versus "Feelers" it was predicted that the propensity for logical processing of the T's would cause them to cluster and recall more items than F's. Thus, it was hypothesized that NT's would have greater clustering and recall scores than NF's, SN's, and SF's, the latter of whom would have the lowest performance.

Method

Subjects. Thirty-four upper-division college students (25 males and 9 females) served as voluntary participants. Their type distribution is shown in Table 1.

Materials and Procedures. Subjects were given the Myers-Briggs Type Indicator (Form F). In the present study only the Sensing-Intuitive (S-N) and Thinking-Feeling (T-F) scales were investigated, and dichotomous data were used. This allowed placement of subjects into one of four groups depending on their preferences: ST, SF, NF, or NT.

One week after being given the MBTI, subjects reported back to the laboratory and were given a learning and recall task. This task was similar to that used by Bousfield (1953), and consisted of a 40-item word list

containing the five most difficult, 8-word categories that could be derived from the McConkie and Dunn (1969) word-sorting norms. Words were presented in quasi-random order, with no two members of the same category being contiguous. (See Table 2.)

Table 1. Type Distribution of All Subjects.

$N = 34$ I = 1% of N

ISTJ $n = 3$ (8.8%) IIIII IIII	ISFJ $n = 2$ (5.9%) IIIII I	INFJ $n = 4$ (11.8%) IIIII IIIII II	INTJ $n = 3$ (8.8%) IIIII IIII
ISTP $n = 1$ (2.9%) III	ISFP $n = 2$ (5.9%) IIIII I	INFP $n = 2$ (5.9%) IIIII I	INTP $n = 0$ (0.0%)
ESTP $n = 1$ (2.9%) III	ESFP $n = 3$ (8.8%) IIIII IIII	ENFP $n = 4$ (11.8%) IIIII IIIII II	ENTP $n = 4$ (11.8%) IIIII IIIII II
ESTJ $n = 1$ (2.9%) III	ESFJ $n = 2$ (5.9%) IIIII I	ENFJ $n = 0$ (0.0%)	ENTJ $n = 2$ (5.9%) IIIII I

E 50%	S 44%	T 44%	J 50%
I 50%	N 56%	F 56%	P 50%
IJ 35%	IP 15%	EP 35%	EJ 15%
ST 18%	SF 26%	NF 29%	NT 26%
SJ 24%	SP 20%	NP 29%	NJ 26%
TJ 29%	TP 18%	FP 32%	FJ 24%
IN 26%	EN 29%	IS 24%	ES 20%
ET 24%	EF 26%	IF 29%	IT 21%

The list was projected for subject viewing one word at a time with each word being projected for 5 seconds. Following the initial presentation, the entire list was projected in similar fashion a second time. Immediately after presentation, subjects were allowed 5 minutes to recall the list in any order they wished.

Table 2. Words Used in Recall Task.

Inherent Categories	Presentation Order
sacrifice	completely
holy	hunt
marriage	threw
freedom	moral
moral	likely
major	swing
glory	sufficient
faith	holy
	directly
completely	float
likely	recently
recently	wheat
surely	wagon
directly	chicken
practically	vessel
nevertheless	freedom
sufficient	pie
	dash
threw	port
throw	jump
swing	practically
jump	stroll
aim	coast
stroll	shook
shook	potato
dash	tent
	glory
potato	owl
chicken	surely
pie	cake
nut	nevertheless
wheat	sacrifice
root	throw
owl	faith
cake	root
	aim
coast	adventure
port	major
vessel	nut
adventure	marriage
tent	
wagon	
hunt	
float	

Results

A one-way ANOVA performed on the recall data found no significant differences among the MBTI groups, F (3, 33) = .78, p◄.50, suggesting that there was no difference in the amount of information encoded by the various types. Mean recall for the four types was: ST = 15.8; SF = 18.4; NF = 18.7; NT = 19.4. Standard deviations were 2.9, 6.0, 3.7, and 4.8, respectively.

Although the groups did not differ significantly in the number of items recalled, it is possible that they differed in the manner in which they organized the words in memory. A large body of literature (Bousfield, 1953; Mandler & Pearlstone, 1966; Tulving & Psotka, 1971) suggests that the organization (clustering) produced by a subject at recall is indicative of the organization of that information in his or her memory. When using a Bousfield task as was used here, clustering is defined as the recall of the words into the categories comprising the list. Consequently, in order to determine if the four MBTI types had differing memory structures, the subjects' recall protocols were scored for the amount of clustering. This metric is based on the comparison of obtained versus expected clustering (categorical organization) using a method reported by Bousfield and Bousfield (1966).

Clustering score (obtained vs. expected) was treated as a repeated measure and a two-way unweighted means ANOVA was performed on the data. Only the main effect of type of score yielded significance, F(1, 30) = 11.19, p◄.003, with subjects' mean obtained clustering (4.73) being significantly greater than their chance clustering scores (3.09). Neither the main effect of MBTI group F(3, 30) = .18, p◄.90, nor the MBTI group by score (obtained vs. expected) interaction approached statistical significance, F(3, 30) = .05, p◄.90.

Discussion

Taken together, the results of this experiment suggest that the differences between the various MBTI types on IQ tests and measures of academic achievement are not necessarily due to either differential memory capacity (recall data) or the use of differing logical strategies (clustering data). This suggests that the lower academic and IQ test performance of some types relative to others (e.g., S's vs. N's) may be due to some cognitive or motivational ability other than pure memory. Although suggestive, the present results are based on a small sample of subjects who were tested on a relatively simple memory task. Future research should use many more subjects and a wide variety of tasks; for instance it should look at the encoding and retrieval strategies of subjects while learning and recalling complex information like prose, before a strong statement can be made concerning the lack of differences in memory processes across types. Such investigations are currently being conducted in our laboratory.

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