Brit. J. Psychiat. (1967), 113, 1139–1140

The Modified Word Learning Test and the Aged Psychiatric Patient

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Introduction

This paper reports primarily the use of the MWLT (Walton and Black, 1957) on aged subjects with a variety of clinical conditions. Earlier studies by Walton (1958), Walton, White, Black and Young (1959) and Walton and Mather (1961) demonstrated that the MWLT identified over 80 per cent. of organics without any misclassification of non-organics. More recently, Orme, Lee and Smith (1964) found that 81 per cent. of organics were correctly classified, but only 69 per cent. of non-organics. Misclassification was particularly serious with schizophrenics (70 per cent.). Other reports, including Newcombe and Steinberg (1964), White and Knox (1965), have found as few as 47 per cent. of the organic group correctly classified. These recent studies cast some doubt upon the original claims of the MWLT as a diagnostic test of generalized brain damage. We hope to present further evidence on the efficiency of the MWLT; particularly on its use with elderly subjects.

There is also conflicting evidence on the relationship of the MWLT with the ART (Inglis, 1957, 1959). A secondary aim of the present study was to examine this relationship, as previous work by Riddell (1962) and Kendrick *et al.* (1965) is contradictory on this point.

Methodology and Results

The sample consisted of 144 subjects over the age of 60. It was divided into 4 diagnostic groups: normals (n=29), affectives (n=42) schizophrenics (n=31) and organics (n=42). The organics were patients with senile and arteriosclerotic dementia drawn from St. Nicholas' Mental Hospital, Gosforth, and the Newcastle General Hospital geriatric wards. The affectives and schizophrenics were drawn from St. Nicholas' Hospital, and the normals were taken from three electoral wards of the sample used in the Newcastle Community Aged Survey (Kay, Beamish and Roth, 1964a, 1964b).

The MWLT, the ART and the 11 sub-tests of the WAIS were administered according to standard procedure, except that the MWLT was discontinued after seven successive trials and the ART after sixteen. This was found to be necessary since for many elderly subjects these tests were quite exhausting. The method of scoring the MWLT was that suggested by Walton and Black (1957). A MWLT cut-off point score of above 25 was used to indicate generalized organicity.

Table I presents means and S.D.s for the whole sample and for each diagnostic group on the MWLT. The organics perform at a significantly lower level than the affectives ($p<0.05$), the schizophrenics ($p<0.01$) and the normals ($p<0.01$).

In considering the diagnostic efficiency of the MWLT as a test of generalized cerebral damage, it was essential to exclude from the organic group 7 patients for whom there was EEG evidence of focal lesions. (Incidentally, 6 of these 7 subjects obtained non-organic scores on the MWLT). The validity of the MWLT as a diagnostic index of generalized organic brain damage is presented in Table I, as a percentage correct classification in terms of psychiatric diagnoses. It is evident that the test has most success with normal subjects, where no misclassification took place. The degree of identification among the

Table I

Modified Word Learning Test

Means, S.D.s and Diagnostic Validity

	Normals	Affectives	Schizophrenics	Organics	All Subjects
Mean	9·34	16·14	12·70	22·42	15·86
S.D.	7·12	13·16	12·85	14·18	12·23
Per cent. correctly identified	100·00	71·40	77·40	71·40	80·00

abnormal groups, both functional and organic, was approximately equal. Overall, 80 per cent. of the sample were correctly classified. Some light is cast on the degree of misclassification by considering the significant negative correlation (−·47) between the MWLT and the WAIS full scale intelligence quotient. It suggests that misclassification resulted in part from the less intelligent non-organic subjects, obtaining high "organic" scores, a finding noted by previous workers (Walton and Black, 1957; Kendrick *et al.*, 1965).

The correlation between the MWLT and the ART was +0·58. It would appear from this result that both tests measure a similar capacity as found by Kendrick *et al.* (1965) rather than the different functions as suggested by Riddell (1962). This could presumably be "short term memory" or a factor of verbal-learning-ability.

Whilst this study does not record the same high degree of success with the MWLT as some of the earlier investigations, the results are sufficiently encouraging to justify its use in research and clinical practice with elderly patients. It certainly emerges as a more useful diagnostic test of *generalized brain damage* than the deterioration indices and verbal performance discrepancy scores calculated from the WAIS (Bolton, Britton and Savage, 1966). The chief disadvantage of the test is its high correlation with general intelligence: this suggests that clinicians should be cautious in drawing conclusions from the MWLT scores obtained from subjects with low IQs. The study also casts doubt on Riddell's suggestion that the MWLT may measure generalized brain damage whereas the ART is more concerned with memory loss independent of brain damage. Our findings are more in keeping with that of Kendrick, namely that the two tests measure a great deal in common. It may well also be valuable to use the MWLT as a measure of verbal learning ability, irrespective of presumed organic involvement. It is valuable to know whether patients, irrespective of their psychiatric label, have or have not verbal learning difficulties.

In summary, the test was found valuable in discriminating generalized organic disorders from normals and functional psychiatric patients. Intelligence and MWLT verbal learning showed a significant correlation. The MWLT also correlated significantly with the ART measurement of memory impairment in the aged.

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(*Received 10 August, 1966*)