THE RELIABILITY OF A TEST OF PSYCHOLINGUISTIC ABILITIES (I.T.P.A.) IN A POPULATION OF YOUNG MALE SUBNORMALS

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Attention has repeatedly been drawn to the poor language abilities of the subnormal. This refers not so much to pronunciation and enunciation but to his difficulties in understanding what is said to him and expressing correctly what he wants to say. These weaknesses are, of course, associated with his comparatively low intelligence level and with his poor socio-economic background which fails to encourage literacy. Mastery of language is not a school subject by itself, and time spent in academic work at a special school is devoted to the tool subjects, reading, writing and arithmetic, but not to promotion of language. Language which provides the general method of communication among people is something which is assumed will take care of itself, and the subnormal will, like the normal, simply "pick-up" an understanding for language and its proper use in the course of "growing up." This means in fact that much, probably too much, reliance is placed on the subnormal's ability to benefit by incidental learning. As Wall (1962) has pointed out intelligence could quite well be defined as the ability to learn in non-formal teaching situations and is in fact the ability to pick up information whilst going along. Since the subnormal has a relatively low I.Q. this particular skill is obviously handicapped and not too much confidence can be placed in his ability to acquire incidental information.

Gulliford (1960, 1964) suggests that the mentally handicapped should be taught his mother tongue. Bernstein (1961), a sociologist, investigated very carefully the speech patterns of the mentally subnormal and came to the conclusion that language deficit limits social growth. He points out that there are two kinds of language, "public language" used by the uneducated and characterized by a lack of conjunctions and adequate sentence forms, and "formal language" used by the more educated group which is on a much higher level and makes it possible to use language as a very flexible instrument of communication. Since the two sections of the population have to communicate with each other there will be difficulties if two different types of language are used. This was highlighted by Gunzburg (1962) when he gave examples of words which were in common use but misunderstood and misinterpreted by the subnormal. Some of the subnormal's "foolish" and "incomprehensible" actions could in fact be due to him attaching his own "personal" meaning to a word or phrase and acting accordingly, rather than in accordance with the commonly accepted meaning of the word or phrase. Gunzburg pointed out that the subnormal is in fact very often "a stranger in his own country" because he is unfamiliar with language idioms, concepts, conventions of his home land, in the same way as a tourist feels "out of it" when visiting a country with a foreign culture.

Similarly Earl (1961) pointed out that there is something like a "subnormal language" and that "the selective interests of their minds (the subnormals') differ from the normal." In consequence the "outer, generally agreed conventional meaning" will often be sacrificed to the subnormal's "inner private and individual" meaning.

Deficiencies in language facility may account not only for difficulties in communication between people but also for an individual's failure to control his actions. Luria (1959, 1963) carried out a number of most interesting experiments demon-

strating the role of language on thought processes and behaviour. As Luria (1959) says the word is " a tremendous factor which forms mental activity," and it is quite arguable that the limitations of the subnormal's thinking, as reflected in a low I.Q., are the result of his poor verbal development (O'Connor and Hermelin 1963). In recent years some useful surveys have been made which seem to suggest that a poor and restricted social environment interferes with the growth of verbal development. Various studies (Schlanger 1954, Badt 1958, Lyle 1959) have shown that the language ability of the mentally subnormal child brought up in an institution is well below that of a child brought up at home. One of the most significant results of the famous Brookland's Experiment (Tizard 1962) was the fact that institutionalized children who had been given an opportunity to live in " normal surroundings " for a while increased significantly in the verbal I.Q.s compared with the I.Q.s of a controlled group who stayed in an institutional environment (Lyle 1959). This links up with a study by Kirk (1959) who also reports significant changes in " Verbal I.Q." in children given the stimulation of a normal nursery school experience. Mein (1960, 1961) investigating the oral vocabulary of mentally subnormal adults in an institution, and comparing it with the vocabulary of normal children of comparable mental development, found a number of words which were less part and parcel of their living language than in the vocabulary of normal children.

Remedial action to overcome language deficits may either be based on a complete change to a stimulating environment without tackling the language weaknesses directly or instituting classroom language programmes. Whilst it is fairly easy to establish a general language weakness by comparing an individual child with a sample of children of the same age group in a Vocabulary Test, it is not always quite clear *where exactly* the weakness is situated. There may be difficulties in understanding what the other person says, or difficulties in expressing oneself; there may be difficulties in remembering what has been said and difficulties in associating words with concepts. Many of these difficulties are not diagnosed in a routine examination of hearing and articulation, where weaknesses of a different type are considered.

Recently a battery of tests has become available in an experimental edition which has been designed to assist in locating the actual weaknesses in those linguistic abilities, which are not speech or articulation defects. This battery is based on a theoretical model developed by Osgood (1954). Preliminary work by Sievers (1960) was followed up by Kirk and McCarthy (1961) and several papers (Kirk and Bateman 1962, Kirk et al. 1962, Kirk 1960) demonstrate the application of the diagnostic findings to remedial work.

The I.T.P.A. Battery

The Battery consists of 9 sub-tests, each of which assesses a separate and distinct aspect of language ability. Two tests (Nos. 1 and 2) are concerned with the understanding (Decoding) of what is heard and what is seen. Two tests (Nos. 5 and 6) attempt to assess the extent of expressive ability (Encoding) either by verbalising or by miming. Two further tests (Nos. 3 and 4) intend to gauge the ability to see relationships from what is heard and what is seen. The six tests are measured at the " representational or meaning level " and assess language functioning requiring an understanding for verbal or visual stimuli. A full mastery of communication processes requires however also ability to use and respond to symbols in a near automatic way, e.g. use of grammar, syntax and immediate recall. These aspects of language functioning are assessed in test No. 7 gauging the extent of correct use of simple English grammar, whilst tests 8 and 9 measure the subject's ability in immediate recall of auditory and visual stimuli (short term memory). The result of the complete assessment is a linguistic psychogram which indicates which

particular aspects of language functioning show pronounced weaknesses. Scores can be converted into "Language Ages" and Standard Scores.

The Battery has been standardized on 700 young children aged 2½—9. This means that the norms available make it possible to compare the language achievements of a young child with the average attainments of (American) children of his own age. In other words it is possible to say that the majority of children of a particular age group obtain a certain score in each of the 9 different sub-tests. Excessive deviations from those norms would suggest either particularly well or poorly developed language functions.

This Battery has been used in its experimental form for English male subnormals aged 16+, and the following paper will set out the results of this investigation. It is, however, obvious that it might be quite misleading to interpret the results obtained in a population of a completely different composition on the lines suggested by the norms of the battery. There is also the problem of various "Americanisms" and pictorial conventions in the test which may represent greater difficulties to the British subject than to the American child. Yet since there is no similar battery available which could be used in the circumstances, an attempt has been made to investigate some aspects which have a close bearing on the usefulness of the battery as a diagnostic instrument.

Sample

The I.T.P.A. battery was applied to 50 young men admitted to this Hospital. The data referring to the group are presented in Table I. None of the young men had been in the Hospital for a considerable time and the difficulties noticed in language skills cannot be ascribed to the effects of institutionalization. No selection was carried out and the 50 young men represent all the trainable young men available at the time of the testing. For retest only 39 were available after a mean time interval of 4 months 2 weeks.

TABLE I

SAMPLE USED IN INVESTIGATION

50 Men

AGE RANGE:	16—31	Mean Age: 19 years	Standard Deviation: ±3 years
I.Q. RANGE (WAIS Full):	39—90	Mean I.Q.: 70.4	Standard Deviation: ±12
TEST-RETEST INTERVALS RANGE: (N—39)	1 month— 14 months	Mean Interval: 4 months 2 weeks	Standard Deviation: ±2 months 2 weeks

Problem

The I.T.P.A. test is primarily a diagnostic tool and is not so important when used as a classifying instrument, e.g. giving the overall Language Age of a child. Several questions have to be clarified if the test is to be used with an adult subnormal population. Among them the most important are:

(a) Does the fact that the Test has been standardised on young normal children make it "too easy" for adult subnormals?

(b) Are the various subtests of the Battery *reliable* enough to be used diagnostically and for measuring the effects of a remedial programme ?

(c) Does the test measure in fact linguistic functioning rather than intellectual efficiency ?

(d) Are the various subtests of the battery *valid* in diagnosing the particular aspect they intend to assess ?

As far as the problem of establishing the validity of the battery is concerned, this is not easily solved and the present investigation does not attempt to make a contribution in this respect. There are scarcely any other test instruments of recognised standing which could assist in a validation study. It will require special experimental investigations to establish whether the various subtests of the I.T.P.A. measure what they are alleged to measure and how far the results are relevant to the clinical problems and remediation procedures. Yet, even before this is to be undertaken it is necessary to feel fairly confident about some fundamental issues particularly when the test is to be used in a population of an entirely different composition compared with the standardisation population.

The present investigation deals, therefore, primarily with the reliability of the test in a population of subnormal young men and its relationship to a traditional intelligence test.

Results:

(a) **Applicability of the I.T.P.A. Test to young male subnormal people**

Table II summarises the Language Age Means obtained by the young men in the sample for each of the 9 subtests and according to intelligence levels. The situation is shown in graphical form in Fig. I which illustrates very well the fact that a similar pattern of success and failure applies to the various groups within the sample irrespective of intelligence level. Some of the means are very near together suggesting either that the test items in each subtest are about equally difficult for

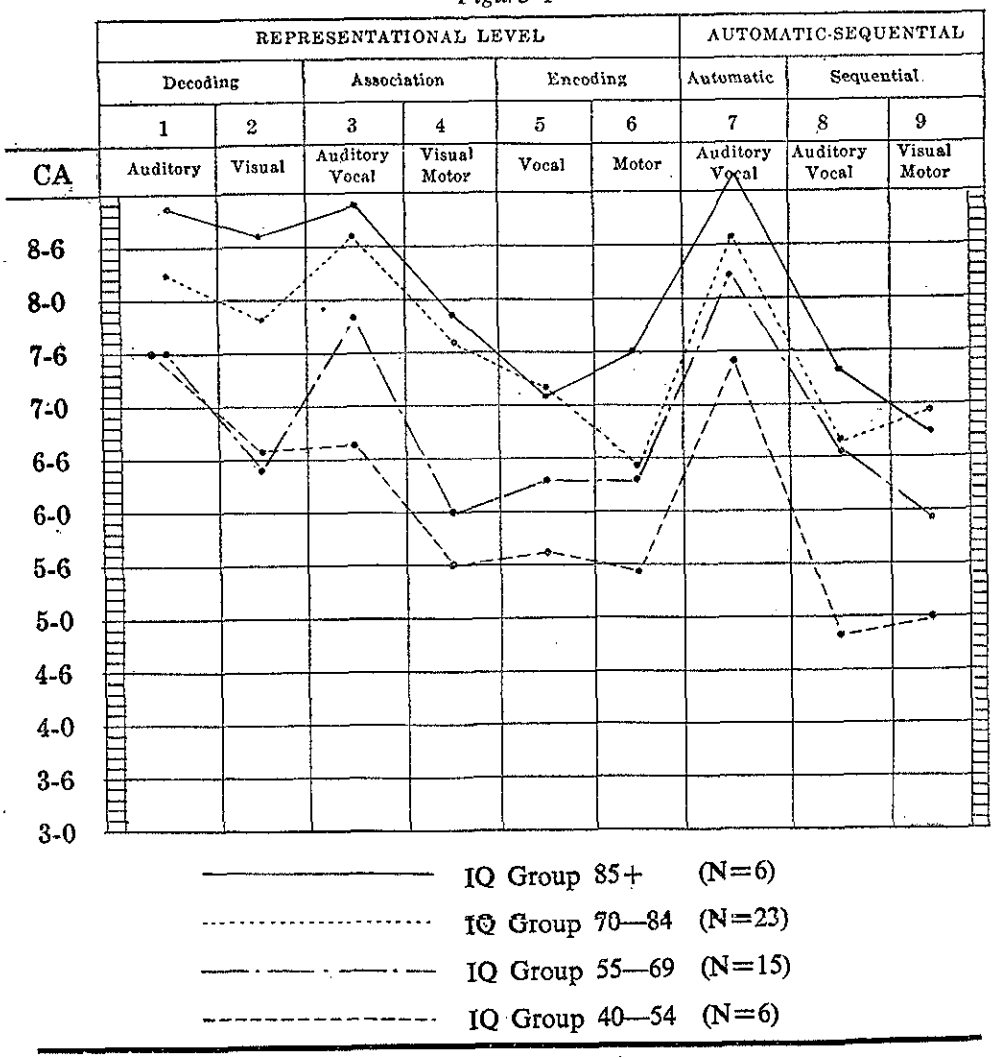
TABLE II

MEAN LANGUAGE AGES AND INTELLIGENCE LEVELS
(N = 50, C.A. = 16—31)

I.Q. GROUP[1]	N	I.T.P.A. TEST NO. 1	2	3	4	5	6	7	8	9
85+ Mean I.Q.=88	6	8-10	8-7	8-10	7-10	7-1	7-6	9-2	7-4	6-9
70—84 Mean I.Q.=76	23	8-3	7-10	8-7	7-7	7-2	6-5	8-7	6-8	6-11
55—69 Mean I.Q.=64	15	7-6	6-5	7-10	6-0	6-4	6-4	8-3	6-7	5-11
40—54 Mean I.Q.=48	6	7-6	6-7	6-8	5-6	5-8	5-5	7-5	4-10	5-0
Mean		8-0	7-6	8-0	7-0	6-8	6-3	8-6	6-5	6-5
S.D.		±1yr 9m	±1yr 8m	±11 m	±1yr 4m	±1yr 6m	±1yr 7m	±8m	±1yr 5m	±1yr 8m

[1]—The I.Q. groups correspond to Standard Deviation Units of the WAIS Test (see R. Heber, Manual on Terminology and Classification in Mental Retardation, AAMD 1961)

Figure 1



the tested population regardless of intelligence level, or that the results are too near the ceiling level of the test. On the whole the relative position of the means according to intelligence grouping has however been maintained. Considering the unequal sizes of the four subgroups, the results are quite satisfactory and suggest that most subtests are sufficiently discriminatory to be usable in an adult subnormal population. In Tests No. 1 and No. 7 the means are, however, too near the ceiling and do not discriminate sufficiently.

Generally speaking it appears that the battery (with the exception of the two subtests No. 1 and No. 7) is *not too easy* for a population of mentally subnormal young adults. It is probably not so sensitive within the dull normal range (from I.Q. 84 upwards) yet some subtests present difficulties even on this level. The available data suggest that the battery is capable of yielding scores which will discriminate within a subnormal adult population.

(b) **Reliability of the I.T.P.A. Battery**

Table III gives the test retest correlation coefficients of the raw scores of 9 subtests. They range from .38 to .79 with an overall test retest correlation for the whole battery of .83.

TABLE III

RELIABILITY COEFFICIENTS, STANDARD ERRORS OF MEASUREMENT AND INDEXES OF RELIABILITY

(N=39, C.A.=16—31)

		Correlation	Index of Reliability(1)	Standard Error of Measurement(2) (Raw Scores)
Decoding:				
Auditory	(No. 1)	.38	.62	3.94
Visual	(No. 2)	.66	.81	2.0
Association:				
Auditory-Vocal	(No. 3)	.78	.88	1.74
Visual Motor	(No. 4)	.37	.61	3.75
Encoding:				
Vocal	(No. 5)	.60	.77	3.59
Motor	(No. 6)	.79	.89	1.79
Automatic:				
Auditory-Vocal	(No. 7)	.48	.69	2.12
Sequential:				
Auditory-Vocal	(No. 8)	.77	.88	2.42
Visual Motor	(No. 9)	.67	.82	2.96
I.T.P.A. Total Language Age		.83	.91	9.35

(1) Index of Reliability "gives the maximum correlation which the given test is capable of yielding." (Garrett 1953)

(2) Standard Error of Measurement indicates how much an obtained score misses the true value. The S.E. of an obtained score expresses the reliability of a test, since it takes account of the self-correlation of the test as well as of the variability within the group, e.g. in Test No. 2 the odds are 2:1 that an obtained score by any individual in the group does not differ from his true score by more than ± 2 points.

Some of the low test retest correlation coefficients are disappointing and cause doubt as to the usefulness of a diagnostic test where chance seems to affect reliability quite considerably. There is very little possibility that the failure of obtaining comparable results in the two administrations was due to maturation and the often large discrepancies between the scores of the two tests suggest that these scores are neither stable nor trustworthy.

TEST NO. 1 (AUDITORY DE-CODING TEST)

This is the test which tends to obtain the highest average scores in each of the 4 intelligence ranges. The means are near the ceiling level of the battery and because of this the test is not as discriminative as one would like it to be. The low

self-correlation of .38 seems to be entirely due to some very marked differences in test retest scores by some individuals (e.g. the difference in two cases amounted to 11 points, in one case 15 points and in another case 19 points). The large discrepancies were partly due to the method of scoring which imposes an artificial ceiling level at too early a stage. They were also partly due to wandering attention, mechanical answering—yes, no, yes, no—and the 50/50 chance of being correct by mere guessing.

It was concluded that the Auditory De-coding test was probably of little value when used with young male adults and that it would be worth while to replace the De-coding test by another test gauging the understanding of the spoken word.

TEST NO. 7 (AUDITORY VOCAL AUTOMATIC TEST)

This test is supposed to assess the extent of conformity to grammatical conventions. In other words thinking processes should be eliminated to a large extent and responses should be purely automatic. One would expect the test retest coefficient to be high for a test assessing automatic behaviour and the low correlation coefficient of .48 is therefore disappointing as it appears to indicate a wide variability which does not support the "automatic" aspect of the test. An analysis of the results suggested that "wrong grammar" was used by the subjects at one occasion and the correct grammar on another occasion and that they were obviously not sure of grammatical conventions. It seems that the low test retest correlation of this subtest reflects the fact that in this sample of low socio-economic background "accepted grammar" has not become automatic knowledge. The test does not appear to contribute anything of value to the assessment of the young adolescent subnormal and would have to be administered twice to obtain a measure of the success with which grammatical conventions have been mastered.

TEST NO. 4 (VISUAL MOTOR ASSOCIATION TEST)

This test demands the selection of one out of four stimuli to "associate" with another stimulus picture. In most cases a reasonable explanation could be found for each picture to go with the stimulus, though of course one particular picture is the "best" and therefore the "correct" solution. One would expect that level of intelligence plays a considerable part in this and this is corroborated by the spread of means in the graph Fig. 1 indicating that success in this test comes easiest to the comparatively intelligent person. There is, however, a considerable choice element as shown by the inconsistent results in the two administrations of the test due to the comparative interchangeability of the various stimuli and this test appears therefore not reliable enough to serve as a diagnostic index.

The remaining six subtests show satisfactory correlations ranging from .60 to .79. This suggests that these tests are fairly reliable as assessed by the test retest method.

As is usually the case with test batteries the reliability of the total score is higher than that of the component subtests. Wechsler reports Reliability coefficients for the W-B I and the WAIS Full Scale Scores and I.Q.s varying from 0.90 to 0.97, but individual subtests have smaller reliability coefficients ranging from 0.62 to 0.88 (Wechsler 1958).

The comparatively low reliabilities of the subtests in the I.T.P.A. battery are mainly due to the short lengths of the tests and to the small sample in the present

study. Nevertheless, these figures raise the well-known problem of the advisability of using subtest scores for diagnostic purposes.

The third column of Table III giving the Standard Errors of Measurement indicates that raw score differences of 2 to 4 points will occur quite regularly between test and retest in the individual subtests. They are slightly larger than the Standard Errors given by Kirk and McCarthy (1961) yet their advice that "raw score difference of less than four points between test and retest should not be regarded as reliable" is applicable to this sample of adult subnormals. Similarly the Standard Error of Measurement for the total I.T.P.A. Language Age is approximately 6 raw score points for the children sample and 9 points for the present adult sample and the rule of thumb suggested by Kirk and McCarthy would still apply that "no difference of less than 10 raw score points should be regarded as reliable."

It is, therefore, sound practice to draw no conclusions as to the effects of remedial education if test and retest raw scores differ only by 4 points or less in individual subtests. Experience and further research work will be able to tell how much larger than 4 points a difference has to be to indicate a significant change in performance.

(c) A Shortened Battery for adult subnormals

In view of the fact that three of the subtests of the I.T.P.A. Battery show such low reliability in test-retest conditions within this particular population it seems that from the diagnostic point of view it is hardly defensible to retain tests which have such large variations in score. The battery has, therefore, been reduced to 6 tests by retaining only those subjects which had a correlation coefficient of at least .6. This does not improve the reliability of the battery very markedly ($r = .83$ to .86) but the elimination of weak tests strengthens the case for using individual subtests for diagnostic purposes.

The shortened Battery still measures each of the aspects of the model by Osgood, though not all channels are represented. De-coding is now measured only by the visual channel, Association only in the Auditory-Vocal field but En-coding in both vocal and motor channels. The automatic Auditory-vocal aspect has now been completely eliminated but the two Tests of sequential memory have been retained.

The raw scores of the shortened battery of 6 tests correlates well with those of the original I.T.P.A. test ($r = .94$) and make it possible to use the Language Age Totals of the I.T.P.A.

Table IV is a tentative Conversion Table which shows the equivalent Raw Scores of the shortened and long battery. The Standard Error of Estimate is 9 raw score points, or, in other words, using the shortened form of the I.T.P.A. battery the chances are about two in three that a predicted Full I.T.P.A. Raw Score is within ± 9 points of the score in the population from which the sample was taken.

The overall Language Age is, however, by and large only a classification device. The fact that a prediction of an overall Language Age of the full I.T.P.A. battery will be correct within ± 9 points in 68% of the cases should not distract from the far more important use of the battery as a diagnostic method and more attention should be paid to the results of the individual subtests than to the summing up of the Language Age.

TABLE IV

I.T.P.A. Language Ages

Tentative Conversion Table for use with Abbreviated I.T.P.A. Test
(Based on 50 Mentally Subnormal Men, C.A. 16—31)

Standard Error of Estimate—8.814 raw score points.

Raw Score Shortened Battery	Estimated Raw Score Full Battery	Language Age
50	96.6	4—6
51	97.9	4—7
52	99.2	4—7
53	100.5	4—8
54	101.8	4—8
55	103.1	4—9
56	104.4	4—9
57	105.7	4—10
58	107.0	4—10
59	108.3	4—10
60	109.6	4—11
61	110.9	5—0
62	112.2	5—0
63	113.5	5—1
64	114.8	5—1
65	116.1	5—2
66	117.4	5—2
67	118.7	5—3
68	120.0	5—3
69	121.3	5—3
70	122.6	5—4
71	123.9	5—4
72	125.2	5—5
73	126.5	5—6
74	127.8	5—6
75	129.1	5—6
76	130.4	5—7
77	131.7	5—7
78	133.0	5—8
79	134.3	5—8
80	135.6	5—9
81	136.9	5—9
82	138.2	5—10
83	139.5	5—11
84	140.8	5—11
85	142.1	6—0
86	143.4	6—0
87	144.7	6—1
88	146.0	6—1
89	147.3	6—2
90	148.6	6—3
91	149.9	6—3
92	151.2	6—4
93	152.5	6—5
94	153.8	6—5
95	155.1	6—6
96	156.4	6—6
97	157.7	6—7
98	159.0	6—8
99	160.3	6—8
100	161.6	6—9
101	162.9	6—10
102	164.2	6—10
103	165.5	7—0
104	166.8	7—0
105	168.1	7—1
106	169.4	7—1
107	170.7	7—2
108	172.0	7—3
109	173.3	7—4
110	174.6	7—5
111	175.9	7—6
112	177.2	7—6
113	178.5	7—7
114	179.8	7—8
115	181.1	7—9
116	182.4	7—9
117	183.7	7—11
118	185.0	8—0
119	186.3	8—1
120	187.6	8—2
121	188.9	8—3
122	190.2	8—4
123	191.5	8—6
124	192.8	8—7
125	194.1	8—8
126	195.4	8—9
127	196.7	8—11
128	198.0	9—1
129	199.3	9—4
130	200.6	9—4+

The I.T.P.A. Test and Intelligence

It is reasonable to assume that Intelligence would have a considerable influence on the language functions as measured by I.T.P.A. The most intelligent subnormals should be considerably better in their handling of language functions than the severely subnormal with an I.Q. below 50.

Table V presents the correlation coefficients between the I.T.P.A. raw scores on 6 tests and the WAIS Full I.Q.s. The correlations range between low (Tests Nos. 5, 6, 8) and fairly substantial (Tests Nos. 2, 3, 9) and the overall correlation is, as usual, much higher than that of the component parts.

The low correlation coefficients between the various subtests and the WAIS Full I.Q.s indicate that only between 10 to 30% of the variance of one test is associated with the variability in the other test (Coefficient of determination). Even the higher correlation between full L.A. and WAIS I.Q. still indicates that 60% are independent of the other test. This suggests that the various subtests of the I.T.P.A. assess largely other aspects than those gauged by the WAIS and that the test could usefully supplement the clinical evaluation based on an intelligence test.

TABLE V

CORRELATION BETWEEN I.Q. AND I.T.P.A. LANGUAGE AGES
(SHORTENED BATTERY)

(N = 50, Male, C.A. = 16—31)

	TEST NO.	r
Decoding:		
Visual	2	.55
Association:		
Auditory Vocal	3	.52
Encoding:		
Vocal	5	.37
Motor	6	.33
Sequential:		
Auditory Vocal	8	.38
Visual Motor	9	.45
Language Age (Total: 6 Tests)		.63

Conclusion

The I.T.P.A. test intends to provide a diagnosis of psycholinguistic functioning which could lead to directed remedial work to overcome particular weaknesses. The originators of the test have published various case studies (Kirk and Bateman 1962, Kirk et al. 1962) which use the child as his own control and which showed the effect of planned remedial tuition. At least one study (Smith 1962) using the I.T.P.A. to reassess the situation after remedial work, claims that a general language

programme was also effective and that there was no need for treating individual defects. The merits and de-merits of these two contrasting approaches require further investigation.

It is, however, essential that there should be an awareness of the nature and size of the problem of language deficiencies. The I.T.P.A. battery, despite its shortcomings when used in conditions for which the test had not been designed, appears a very promising tool. But for the 3 subtests discussed (No. 1, 4, 7) the remaining subtests are of a sufficiently high reliability to satisfy one basic requirement of diagnostic testing and assessment of remedial work. Nothing much can be said at this stage regarding " validity " or whether the test measures what it is supposed to measure. It is difficult to see how " validity " can be convincingly demonstrated in the absence of other test instruments which gauge the same aspects. Some evidence for the " validity " of the test procedure and the " relevance " of the test results can probably be obtained by comparison with information obtained from other sources, and it will be important that such evidence should be available soon as it may well have some decisive influence on the education and training of the subnormal.

Looking at the graphs of Fig. 1 once again it appears that the statistical findings are well supported by clinical impressions. The mentally subnormal has a certain understanding for a limited primitive vocabulary (Auditory decoding—average language age 8 years). He has less ability in deciphering the visual symbols which provide guidance and help in finding one's way about in life (Visual Decoding Test—average Language Age 7 years 6 months). He is quite capable of relating auditory impressions (Vocal Auditory Test—average Language Age 8 years), but is less capable to do the same with visual impressions because of his initial handicap in visual decoding (Visual Motor Test—average Language Age 7 years). The mentally subnormal is poorest in the encoding processes because his vocal channel is handicapped by his limited " sub-cultural " vocabulary (Vocal Encoding Test—average Language Age 6 years 8 months), and efficiency in his " motor " channel is lowered by his reluctance to support the spoken words by appropriate gestures (Motor Encoding Test—average Language Age 6 years 5 months).

The mentally subnormal has acquired certain superficial language skills which deceive the listener regarding his real ability (Auditory Vocal Automatic Test—average Language Age 8 years 4 months) but is extremely handicapped by his pronounced difficulties in remembering verbal symbols (Auditory Vocal Test—average Language Age 6 years 5 months) or visual impressions (Visual Motor Sequential Test—average Language Age 6 years 5 months).

Among the various aspects of education and training of the mentally subnormal, none has received so little attention as his communication abilities, yet they are vital to him if rehabilitation efforts in adjusting him to the community are to have any lasting effect. Diagnostic procedures as exemplified by the I.T.P.A. test appear to have more relevance to the actual work to be carried out than Intelligence Quotients and Mental Ages and should be introduced into the remedial work as much as possible.

Summary

The I.T.P.A. Test has been applied to 50 mentally subnormal men, with a mean age of 19 years and a mean I.Q. of 70. Certain subtests of the battery were found unreliable in this type of population but the battery was on the whole reliable

and appeared to measure other aspects than those measured by an Intelligence Test. A table for estimating Total Language Age based on an abbreviated I.T.P.A. battery is presented.

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