A STUDY OF THE RELATIONSHIP BETWEEN WECHSLER ADULT INTELLIGENCE SCALE SCORES AND KOPFITZ'S HUMAN FIGURE DRAWING TEST SCORES FOR MENTALLY RETARDED ADULTS

THESIS

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By

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The present study explored the possibility of applying Koppitz's developmental scoring techniques of mental maturity to retarded adults.

The following hypotheses were tested: 1) that there is a significant correlation between the Koppitz HFD Test scores and the WAIS Full Scale scores; 2) that the correlation between the Koppitz HFD Test scores and the WAIS Performance Scale scores is also significant. Statistical computations did confirm the latter hypothesis but not the former one.

The results of the statistical tests revealed that while Koppitz HFD Test scores correlated significantly with the WAIS Performance Scale scores, they did not significantly correlate with the WAIS Full Scale scores. The conclusions are: 1) The Koppitz HFD Test is not an effective estimator of intellectual level with retarded adults; 2) The Koppitz HFD Test can be used as a supplement to Wechsler-type scales measuring performance ability.
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CHAPTER I

INTRODUCTION

The historical survey in Goodenough's classic book, Measurement of Intelligence by Drawings, reviewed the literature in this area from 1885 to 1926 and indicated a marked interest of investigators the world over in the human figure drawings (hereafter HFDs) of children (11). The thrust of most of the studies, according to Goodenough, was that some characteristics of the HFDs of children resulted from developmental processes, and showed significant maturational changes. More recent studies have still held to this basic idea (16). However, it was not until the advent of standardized individual intelligence tests, and the publication of the 1916 revision of the Stanford-Binet, that Goodenough and her contemporaries had a criterion by which it became possible to test their inferences more rigorously. The decade following the 1916 Binet revision saw Goodenough develop an objective scoring procedure with high interexaminer reliability for HFDs of children. She designed her Draw-A-Man Test (DAM) to measure a child's intelligence between the ages of 4 and 10. She asserted that what was contained in the child's drawing (i.e. the number of parts drawn, the relative proportion of the
parts represented, and other dimensional qualities) was considered to be an objective measure of the child's mental maturity. Every unit represented in a child's HFD could be added and the sum could be considered indicative of that child's mental age. Goodenough's reported correlations were approximately .7 to .8 (at different age levels) between her test and the Binet.

Some of the specific assumptions that Goodenough made in developing her test, and that have persisted in later revisions of it, were: 1) that in children, a close relationship is apparent between concept development as shown in drawing, and general intelligence; 2) that drawing is primarily a language, a form of expression to the child, rather than a means of creating beauty; 3) that as he develops, the child draws first what he knows, rather than what he sees (which comes later through a slow evolutionary process); 4) that items proportionally emphasized by children are most important to them; 5) that the order of development in children's drawings are surprisingly constant; 6) that the drawings of sub-normal children resemble those of normal children at an earlier age in their lack of detail and in their defective sense of proportion; 7) that children of inferior mental ability sometimes copy well, but they rarely do good original work in drawing; 8) that up to age 10, children draw the human figure in preference to any other subject (11,14,17).
Because Goodenough's DAM Test could be given quickly and easily, it soon gained a great deal of popularity among practitioners in agencies where quick screening was necessary. Even though subsequent interest moved somewhat from the formal aspects of scoring, required in the evaluation of intelligence, to an emphasis on subjective interpretations required by a projective technique, the DAM Test as a measure of mental age has remained a much used, discussed, and studied psychometric instrument (1, 6, 7, 9, 20, 21, 36).

Silverstein, in a study of testing practices in mental institutions, reported the DAM Test to be among the ten leading tests in use. In response to the question, "What change in the kind of testing do you anticipate in the next five years?", he found the most consistent answer to be, "More projective testing (28)."

Silverstein's findings should come as no surprise when one considers how frequently a verbal skills deficit is encountered among patients in mental institutions and how inappropriate it would be for many of them to have to take the more formal, structured intelligence test. Having the patient draw a human figure instead, thus becomes a useful auxiliary procedure to the more formal intelligence testing for the clinician. His instructions are general and simple, his testing tools, a piece of white paper and a pencil, are common, and the individual freedom permitted
the patient affords an opportunity for a host of different responses. In addition to being free and not having to verbalize, the patient frequently finds the test fun. HFDs, therefore, can aid in the establishment of patient-clinician rapport, as they offer both an index of behavior to the clinician and support to the information he has gained by other intelligence testing techniques (17, 18).

The variety of responses that one can make when taking the Goodenough DAM Test has been a major reason why its scoring system has been so seriously studied in the last eleven years. Harris, in developing his Draw-A-Person Test (DAP), went to great lengths to revise and extend Goodenough's scoring system but found that her work was so well-designed and executed that little could be done to improve it (14). Harris did develop, however, a revised scoring system that correlated well with Goodenough's and is currently in wide use. A more recent study of the Goodenough-Harris revision concluded that Goodenough's method of scoring is better than Harris' with normal children, but that Harris' revision may be better with children of below average IQ (10).

In 1968, Koppitz's book, Psychological Evaluation of Children's Human Figure Drawings, added further support to the Goodenough-Harris developmentalist approach to the study of children's HFDs. The book offered a simpler scoring system in evaluating the HFDs of children aged 5 to 12 (17,
Koppitz's sample population consisted of 1856 public school children, none of whom were suspected as being mentally retarded. In a study of 335 Mexican school children, DeMoreau analyzed their HFDs by both the Goodenough and the Koppitz scoring systems. Scores obtained through each system were correlated for each age level. All of the Pearson product moment coefficients obtained in DeMoreau's study were found to be significant, suggesting that Koppitz's system may be used as confidently as Goodenough's (9).

Childers, using 31 mentally retarded children, correlated Koppitz HFD scores with Wechsler Intelligence Scale for Children Full Scale scores and Performance Scale scores. The Pearson product moment correlations he obtained were also found to be significant, suggesting that Koppitz's technique may also be used as a reliable estimator of intelligence in retarded children aged 5 to 12 (8). Childers also recommended an investigation of the applicability of Koppitz's scoring system of HFDs for mentally retarded individuals who are chronologically too old for the HFD Test, but whose mental ages are equivalent to the standardization population (8). The value of such a study should be obvious, considering the large number of mentally retarded individuals whose chronological age exceeds 12 years. The present study is based on Childers' proposal.

While the Goodenough, Harris, and Koppitz techniques were standardized on sample populations of children between
the approximate ages of 4 and 13, some research has been done using HFDs with chronologically older, normal and retarded subjects. Yepson obtained a correlation of .60 between the Goodenough and the 1916 Binet with 37 retarded boys between 9 and 18 years (36). Berdie reported a correlation of .62 between the Goodenough DAM and the Wechsler Mental Ability Scale, Form B, with 62 U.S. Marine recruits of low intelligence whose mean age was 20.4 years. He was satisfied that the DAM Test was useful as a quick screening device for adult males of low ability (5). Birch investigated the relevance of the Goodenough DAM Test with 68 retarded children who were chronologically older than the standardization population. He found a correlation of .64 with the 1937 version of the Stanford-Binet, when the mental ages were correlated and the chronological age was held constant (6). Carkhuff found that the DAM Test could be used in estimating the intellectual level of noninstitutionalized subnormal adults (7). Working with subnormal children 14 years of age, McElwee claimed that the DAM Test could be used as effectively with them as with the standardization population (20). Bellamy demonstrated that an increase in chronological age produces differences in HFD characteristics, and that these differences are related to IQ (4). In a home for the aged, Jones and Rich found the DAM Test to be a useful measure of intelligence (15). With suspected educable retardates, Thompson found the Harris-
Goodenough DAM Test to be an effective predictor of intelligence (32). Tobias and Gorelick found the DAM Test not only an effective instrument for assessing the level of intelligence of retarded adults between the ages of 17 and 30, but also found it to be a good predictor of work efficiency in a workshop setting (33). Using high school seniors, Renner found that persons with a high capacity for abstract thinking will synthesize many images to depict a "generalized" man (e.g. subculture person) in HFDs, while persons with less capacity for abstraction will more likely represent a "stereotyped" man (e.g. policeman) in their drawings (26). Gunzberg, in a study of the scope and limitations of the DAM Test in clinical work with adult mental defectives, determined that the presence of pathological features in HFDs suggests that the HFDs are both unlikely to indicate the appropriate intelligence level and point to the presence of clinical pathology (13). A study showing similar results was done more recently by Moore (21).

The number of studies performed that investigate the usefulness of HFDs as an estimator of intelligence and as a projective technique leaves little doubt that HFDs occupy an important place in the present historical situation of psychological assessment. However, the relative youth of the various HFD techniques in the still young science of psychology should warn the clinician to be cautious in evaluating HFD scores. The consensus in the literature
is that HFDs are excellent screening devices, always to be used in conjunction with other psychometric techniques in determining level of intelligence.

In most of the studies relating IQ and a HFD technique, the criterion test for the HFD technique under investigation has been either the Stanford-Binet or one of the many Wechsler Scales (Wechsler Mental Ability Scale, Wechsler-Bellevue, Wechsler Intelligence Scale for Children, Wechsler Adult Intelligence Scale). In the more recent investigations of retardates, the Wechsler Scales, especially the WISC and WAIS, appear to be the preferred criterion tests. Wechsler has long observed that subtest scatter was minimal among mental retardates (19). This observation was confirmed by Sternlicht, Siegel, and Deutsch, studying 509 institutionalized retardates (31). Barclay, Friedman, and Fidel further confirmed the similarity of the WISC and WAIS scores and subtest patterns for retardates. A major conclusion of the study was than among retardates, especially the older ones, scores were higher on the performance subtests than on the verbal subtests (3). The Wechsler Scales have had wide use in determining the intelligence level of mentally retarded adults. Research has shown the Wechsler Scales to be among the most valid instruments for that particular task (3,12,27,29,30,31).
Statement of the Problem

Following Childers' previously discussed recommendation (8), the purpose of the present study was to determine whether Koppitz's developmental scoring techniques of mental maturity are applicable to mentally retarded adults whose mental ages are determined by the Quick Test to be between 5 and 12 years.

Hypotheses

In light of Childers' study and prior research, two hypotheses have been posed for adult retardates: 1) that there is a significant correlation between the Koppitz HFD scores and the WAIS Full Scale scores; 2) that there is a significant correlation between the Koppitz HFD scores and the WAIS Performance Scale scores.

Description of Measuring Instruments

The Quick Test (QT) is a picture vocabulary test of intelligence using the same general types of material and procedures which are used with the Full-Range Picture Vocabulary Test (2). The test has three forms, each form consisting of four pictures and a series of words. The examiner shows the subject a form containing four pictures, verbalizes a test word, and the subject points to the picture on the form thought to convey the meaning of the test word. Each form of the QT takes five minutes or less to administer. Mental ages and IQs may be calculated from
each form singly, or from any combination of the three forms. Mental age norms for white children and IQ norms for white adults are provided (2).

Research comparing the QT and the Wechsler Scales with subjects of normal intelligence has generally supported the QT as a brief screening estimate of intelligence. Fless, using a population of 50 outpatient clinic subjects with a mean age of 10 years, obtained a correlation of .84 between the QT and the WISC Full Scale (24). Ogilvie, using 30 veteran's hospital patients with a mean age of 42.6, obtained a correlation of .75 between the QT and the WAIS Full Scale (22). Whitney and Metzger report a correlation of .77 between the QT and a short form of the Wechsler Bellevue II for applicants for state employment (35). Quattlebaum and White obtained a correlation of .86 between the QT and a short form of the WAIS with neuropsychiatric patients (25).

Koppitz's Human Figure Drawing Test is an abridgment of the Harris revision of the Goodenough DAM scoring system. Koppitz relied on her own clinical experience and the Harris revision to select the thirty Developmental Items that compose her test (17). A Developmental Item is defined as an item that occurs only on relatively few HFDs of children of a younger age level and then increases in frequency of occurrence as the age of the children increases, until it gets to be a regular feature of many or most HFDs.
at a given age level (17). The thirty signs that met the
criteria for Developmental Items and that currently con-
stitute the HFD Test, were chosen after pre-testing and
experimentation (17). The signs are listed in the appendix
(17). These signs, when represented on a HFD, indicate a
child's age and mental maturity. School learning, the
instructions given, the drawing medium used, and artistic
ability are considered by Koppitz unrelated to the number
of Developmental Items a child draws (17).

Koppitz preferred that the HFD Test be administered
individually, but it can be given as a group test (17).
The examiner gives the child a blank sheet of 8½" X 11" paper and a pencil, and tells the child: "On this piece
of paper, I would like you to draw a WHOLE person. It can
by any kind of a person you want to draw, just make sure
that it is a whole person and not a stick figure or a
cartoon figure (17)." The normative data for the Develop-
mental Items were intended to show which items on HFDs of
boys and girls, of different age levels, could be expected,
and which items were unusual or exceptional. Expected
items for a given age level were those occurring 86-100 per
cent on all HFDs of the standardization population.
Exceptional items were those occurring less than 16 per
cent on the same HFDs (17).

Scoring the Koppitz HFDs is a simple matter. The
omission of an Expected item is scored minus one. The
inclusion of an Exceptional item is scored plus one. To avoid a negative value the sum of these items is added to plus five. The sum is the HFD score and may be interpreted in the following way (17):

<table>
<thead>
<tr>
<th>HFD Score</th>
<th>Level of Mental Ability</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 or 7</td>
<td>High Average to Superior (IQ 110 upward)</td>
</tr>
<tr>
<td>6</td>
<td>Average to Superior (IQ 90-135)</td>
</tr>
<tr>
<td>5</td>
<td>Average to High Average (IQ 85-120)</td>
</tr>
<tr>
<td>4</td>
<td>Low Average to Average (IQ 80-110)</td>
</tr>
<tr>
<td>3</td>
<td>Low Average (IQ 70-90)</td>
</tr>
<tr>
<td>2</td>
<td>Borderline (IQ 60-80)</td>
</tr>
<tr>
<td>1 or 0</td>
<td>Mentally Retarded or functioning on a retarded level due to serious emotional problems (IQ less than 70)</td>
</tr>
</tbody>
</table>

The Wechsler Adult Intelligence Scale contains eleven subtests divided into a Verbal Scale and a Performance Scale. The Information, Comprehension, Arithmetic, Similarities, Digit Span, and Vocabulary subtests make up the Verbal Scale. The Digit Symbol, Picture Completion, Block Design, Picture Arrangement, and Object Assembly subtests make up the Performance Scale. The Verbal Scale yields an intelligence quotient as does the Performance Scale. The combination of the scaled scores of the eleven subtests yields a Full Scale intelligence quotient. The test was designed for use with seven age groups ranging in age from 16 to 64 years (34).

The WAIS Manual offers high reliability coefficients for age groups 18-19, 25-34, and 45-54. The coefficients are .96, .96, and .96 respectively for the Verbal Scale, .93, .93, and .94 respectively for the Performance Scale,
and .97, .97, and .97 respectively for the Full Scale. These are split-half reliabilities (34).

Coefficients of correlation between IQs based on WAIS and Stanford-Binet are .86 for the Verbal Scale, .69 for the Performance Scale, and .85 for the Full Scale. As a reliable psychometric instrument for the assessment of intelligence, the WAIS is quite adequate.
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CHAPTER II

METHOD

Subjects

Thirty-one mentally retarded adults between the ages of 17 and 39 (mean CA=26; Mean MA=8) made up the subject population of the present study. All subjects were living in residence at Denton State School, Denton, Texas. Subjects were selected without regard for sex, 14 were male, 17 were female.

Apparatus

The psychometric instruments used in this study were the Quick Test, the Koppitz HFD Test, and the WAIS.

Procedure

All mentally retarded adults at the Denton State School having enough manual dexterity to manipulate a pencil and WAIS scores no more than three years old, were considered candidates for the sample population of this study. The first thirty-one candidates found to have mental ages ranging from 5 to 12 as defined by Form One of the Quick Test were used as subjects in the sample population.

The following QT instructions were given to each subject (1):
This is a kind of picture game. I am going to show you some pictures and read some words. You point to the best pictures for the words. Some of the words will be very easy and some of the words will be hard. You won't know all the words. If I read a word that you don't know, just tell me that you don't know, and I will go on to another word.

The examiner then gave several easy words, making sure the subject understood the instructions. A hard word was then given to make sure that the subject understood to say or signal a "don't know" response. Scoring was done in the standard manner (1).

After the administration of the QT, the examiner placed a plain white sheet of 8½" X 11" paper before the subject, handed him a pencil, and gave him the following Koppitz HPD Test instructions: "On this piece of paper, I would like you to draw a whole person. It can be any kind of a person you want to draw, just make sure it is a whole person and not a stick figure or a cartoon figure" (2). The resulting HPDs were scored according to the Koppitz developmental items scoring system (2).

Upon completion of all testing, two Pearson product moment coefficients of correlation (r) were computed. The first r was between the HPD scores and the WAIS Full Scale scores. The second r was between the HPD scores and WAIS Performance Scale scores.
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CHAPTER III

RESULTS

Pearson product moment correlations were computed between the Koppitz HFD Test scores and WAIS Full and Performance Scale scores. The statistical significance of the correlations was determined by means of t tests, the desired significance level previously set at .05. The correlation for the relationship between WAIS Full Scale scores and Koppitz HFD Test scores (r = .32) was not found to be significant at the .05 level of significance. The data relative to the comparison between the WAIS Full Scale scores and Koppitz HFD test scores are reported in the form of group means, standard deviations, and product moment correlation coefficients in Table I.

TABLE I

SUMMARY OF THE MEANS, STANDARD DEVIATIONS, AND CORRELATIONS BETWEEN WAIS FULL SCALE SCORES AND THE HFD SCORES FOR 31 MENTALLY RETARDED ADULTS AGES 17 TO 39

<table>
<thead>
<tr>
<th>WAIS FULL SCALE</th>
<th>HFD</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>59.23</td>
<td>4.16</td>
</tr>
<tr>
<td>5.28</td>
<td>2.05</td>
</tr>
</tbody>
</table>

p > .05

21
The results in Table I show that the Koppitz HFD Test scores are not effective indicators of mental maturity, when the WAIS Full Scale scores are used as the criterion, with a mentally retarded adult population between the ages of 17 and 39. Therefore, it would appear inadvisable for the practitioner to use it for that purpose in screening procedures designed to estimate level of intelligence.

The correlation between the WAIS Performance Scale scores and Koppitz HFD Test scores ($r = .37$) was found to be significant at the .05 level of confidence. Data relative to the comparison between WAIS Performance Scale scores and Koppitz HFD Test scores are shown in Table II.

**TABLE II**

**SUMMARY OF THE MEANS, STANDARD DEVIATIONS, AND CORRELATIONS BETWEEN WAIS PERFORMANCE SCALE SCORES AND THE HFD SCORES FOR 31 MENTALLY RETARDED ADULTS AGES 17 TO 39**

<table>
<thead>
<tr>
<th>WAIS PERFORMANCE SCALE</th>
<th>HFD</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>64.32</td>
<td>4.16</td>
</tr>
<tr>
<td>SD</td>
<td>SD</td>
</tr>
<tr>
<td>7.99</td>
<td>2.05</td>
</tr>
<tr>
<td>$r$</td>
<td></td>
</tr>
<tr>
<td>.37</td>
<td></td>
</tr>
</tbody>
</table>

The significant results indicated in Table II emphasize a relationship between the Koppitz HFD Test and the Performance Scale of the WAIS. The specific factors involved in this relationship are not clear.
Still it appears that, according to the results, the Koppitz HFD Test can be used as a supplement to Wechsler-type test scales measuring performance ability.

As a result of the Pearson Product moment correlations, it was possible only in part to reject the null hypothesis and only in part to accept the experimental hypotheses. The correlation of .32 for the relationship between the Koppitz HFD Test scores and the WAIS Full Scale scores was not found to be significant at the .05 level of significance. The first null hypothesis tested was, therefore, accepted. The correlation of .37 for the relationship between the Koppitz HFD Test scores and the WAIS Performance Scale scores was found to be significant at the .05 level of significance. The second null hypothesis tested was rejected.
CHAPTER IV
DISCUSSION

An attempt was made, based on a recommendation in a study by Childers (3), to correlate Koppitz's HFD Test scores with WAIS Full and Performance Scale scores using a sample population of retarded adults with mental ages between 5 and 12. The results indicated that while the Koppitz HFD Test cannot reliably be used to estimate level of intelligence in retarded adults, it does correlate significantly, if only moderately, with the WAIS Performance Scale scores and can be used as a supplement to scales measuring performance ability. The significant correlation between the Koppitz HFD Test and the WAIS Performance Scale is consistent with the results of previous studies (3,6). However, the lack of a significant correlation between the HFD Test scores and WAIS Full Scale scores suggests that the Koppitz scoring system, noting Expected and Exceptional items on HFDs, does not apply with mentally retarded adults whose mental ages are between 5 and 12. It appears that either the Koppitz HFD Test scores are not effective indicators of IQ, when the WAIS is used as the criterion, or that the validity of the Koppitz HFD Test decreases with a retarded population in the age range under investigation. The obtained correlation
coefficients of the current study were much smaller in magnitude than those reported in the Childers' study with retarded children (both $r = .51$) (3). However, the current study's correlation coefficient between WAIS Full Scale scores and HFD Test scores was very close to the small but significant coefficient ($r = .30$) reported by Tobias and Gorelick in their study with retarded adults, where the WAIS was used as the criterion for the Goodenough DAM Test (6). The difference in the size of the sample populations used in the current study ($n = 31$) and the Tobias and Gorelick study ($n = 103$) could explain the difference in obtaining a significant correlation in the latter study and not in the current one. This seems possible since the Koppitz HFD Test and the Goodenough DAM Test have been shown to measure similar aspects of mental ability (4). A greater sample size could have reduced the probability of making a Type II Error which, in view of earlier studies (1,2,6), may have been committed here.

The significant correlation coefficient found between the WAIS Performance Scale scores and the Koppitz HFD Test scores is, as reported above, in line with previous research (3,6). The smaller magnitude of the current study's coefficient when compared to those obtained by others (1,2,3,6) is curious, suggesting either that the validity of the Koppitz HFD Test as an indicator of performance ability on Wechsler-type scales decreases with retarded adults, or
that a sampling error, involving a restricted range of scores, is responsible for the unusually small correlation coefficient. In either event, the Koppitz HFD Test as a supplement to a non-verbal, performance-type test scale used with retarded adults, does not appear to be as valuable a supplement as the Goodenough DAM Test. The Koppitz scoring system is faster than Goodenough's, but the latter test's greater correlation with the WAIS when used with adult retardates is persuasive evidence of its greater value. Whatever advantage is gained by the speed with which the Koppitz HFD Test can be given, seems to be lost when, at test's end, the subject is placed into one of three broad categories: 1) mentally retarded; 2) average; 3) above average (5). The intelligence quotient or mental age yielded by the Goodenough DAM is obviously less ambiguous than Koppitz's categories. Using either test as a performance test or supplement may involve still other problems as Childers suggests (3):

Categorizing the HFD Test as a performance test, however, may be doing violence to the concept of performance ability as it is associated with the scales of Arthur and Wechsler. Motor-speed is not a premium in this test. Neither is attention-span. Performance quality in the test is there mainly because the subject does something and leaves a record of having done it. By the same token, its non-verbal quality resides in the fact that the subject is not required to say anything.

Thus, the results of the current study seem to contraindicate the use of the Koppitz HFD Test as a quick screening
estimate of intellectual level with retarded adults whose mental ages are between 5 and 12. Although the Koppitz HFD Test scores did correlate with the WAIS Performance Scale scores at the .05 level of significance, to use the HFD Test as a supplement to similar performance scales seems a questionable procedure at this time.
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CHAPTER V

SUMMARY

Thirty-one mentally retarded adults whose mental ages were between 5 and 12 were used as subjects in the present study. The study explored the possibility of applying Koppitz's developmental scoring techniques of mental maturity to retarded adults.

The following hypotheses were tested: 1) that there is a significant correlation between the Koppitz HFD Test scores and the WAIS Full Scale scores; 2) that the correlation between the Koppitz HFD Test scores and the WAIS Performance Scale scores is also significant. Statistical computations did confirm the latter hypothesis but not the former one.

All subjects having WAIS Scores no more than three years old were administered the Quick Test and the Koppitz HFD Test. The tests were given individually. The scoring was done according to standard procedures in the test manuals. Subjects receiving a mental age between 5 and 12 as defined by the QT were included in the sample population. Pearson product moment coefficients of correlation were determined between Koppitz HFD Test scores and WAIS Full Scale scores, and between Koppitz HFD Test scores and Wais Performance Scale scores. The statistical significance of the two
correlations was determined by means of t tests.

The results of the statistical tests revealed that while Koppitz HFD Test scores correlated significantly at the .05 level of confidence with the WAIS Performance Scale scores ($r = .37$), they did not significantly correlate with the WAIS Full Scale scores ($r = .32$). The conclusions indicated by these data are: 1) The Koppitz HFD Test is not an effective estimator of intellectual level with retarded adults whose mental ages are between 5 and 12; 2) The Koppitz HFD Test can be used as a supplement to Wechsler-type scales measuring performance ability, but caution must be exercised, as the validity of the HFD Test used in this way seems to decrease with retarded adult subjects.
APPENDIX

Developmental Items on HFDs of Children

1. Head
2. Eyes
3. Pupils
4. Eyebrows and eyelashes
5. Nose
6. Nostrils
7. Mouth
8. Two lips
9. Ear
10. Hair or head covered by hat
11. Neck
12. Body
13. Arms
14. Arms two-dimensional
15. Arms attached at shoulders
16. Arms pointing downward
17. Elbow
18. Hands
19. Fingers
20. Correct number of fingers
21. Legs
22. Legs two-dimensional
23. Knee
24. Feet
25. Feet two-dimensional
26. Profile
27. Good proportion
28. Clothing: 1 piece or none
29. Clothing: 2 or 3 pieces
30. Clothing: 4 or more pieces
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