


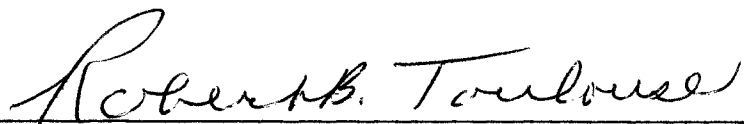
THE GOODENOUGH DRAW-A-MAN TEST
AS A MEASURE OF INTERPERSONAL ADJUSTMENT

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THE GOODENOUGH DRAW-A-MAN TEST
AS A MEASURE OF INTERPERSONAL ADJUSTMENT

THESIS

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CHAPTER I

INTRODUCTION

Theoretical Background

The requirements for the effective functioning of the human organism within the context of a given culture are many and varied. One provision, obviously, is adequate adjustment to the mores, social requirements, and interpersonal modes of behavior dictated by that culture. With this factor in mind, the evaluation of personality adjustment becomes an important element in examining the degree to which new members of a society are being introduced to the ways of the culture.

Among the plethora of techniques designated to assess certain aspects of an individual adjustment to a given culture is the Goodenough Draw-A-Man Test of Intellectual Maturity (DAM), developed in 1926 by Florence L. Goodenough, and revised in 1963 by Dale B. Harris. The initial purpose of the test was to provide an easily scored, relatively culture free measure of the intellectual functioning of the pre-adolescent child (6). Subsequent research has indicated that it serves this purpose well (See "Related Research," p. 8.). But, a second use of the test was suggested by Goodenough: the use of the DAM as a measure of personality adjustment.

Goodenough originally stated:

It is not impossible that a type of performance which is so closely related to the mental life of the individual as is spontaneous drawing, may sometimes reveal much instability before it has manifested itself to any marked degree in everyday behavior (5, p. 62).

Since this statement was made, the test has in fact developed into a valuable tool for the detection and diagnosis of behavior disorders and individual maladjustment in children. Several other tests have been developed and validated on the theoretical basis of Goodenough's original effort. The guidelines of the test, as set forth by Goodenough and later revised by Harris, also seem to indicate the possibility of analyzing personal adjustment with the DAM. The core assumption of the test follows:

The child's drawing of an object will reveal the discriminations he has made about that object as a concept. This concept, when expressed, becomes a useful index to the complexity of his concepts in general (6, p. 7).

Concept formation, according to Harris, is composed of three elemental factors:

1. The ability to Perceive, i.e., to discriminate likenesses.
2. The ability to Abstract to a new situation these discriminations.
3. The ability to Generalize from a given context to a new context (6, p. 5).

Each of these statements seem to indicate that the child must accurately perceive his environment in order to be considered adequately adjusted and, concomitantly, to perform well on the DAM.

At this point, it would seem necessary to suggest a working definition for the term "adjustment." For this delineation, Leary's theory of interpersonal behavior, as derived from Sullivan, Horney, Fromm and others, provides valuable enlightenment. Rather than assess a degree or quality of adjustment on the basis of some internal or personal criterion, Leary chooses another measure. He states that any deviation from the norm must be viewed in terms of the social context in which the individual is adjusted. Hence, factors of adjustment and maladjustment are evaluated in the following manner:

Adjustment in terms of the over-all personality organization consists of flexible, balanced, appropriate, accurate interpersonal behavior. In terms of the subdivisions of personality--the levels of public interaction, perception and private symbolism--it consists of appropriate, accurate and balanced interpersonal behavior respectively (9, p. 31).

Leary, then defines adjustment in terms of effective interaction between individuals. But, one vital point must be noted. According to this theory, "it is important to note that interpersonal behavior refers to private perceptions, conscious reports, symbolic and unwitting expressions, as well as to overt actions" (9, p. 9). In this way Leary encompasses the individual behavior exhibited, for example, by the schizophrenic child who is unable to form a complex "body image" concept. The child's perception of interpersonal relationships is so distorted as to make him unable to accurately complete the abstraction and generalization

necessary to successful performance on a measure such as the DAM.

This example suggests a relationship between Leary's definition of adjustment and DAM performance. The "subdivisions of personality" that Leary sets forth--public interaction, perception and private symbolism--are almost exactly analogous to those elements Harris considers vital to successful performance on the DAM. Leary's "perception of interpersonal data" is the counterpart of Harris' "ability to perceive." Leary's "public interaction" can be likened to Harris' "ability to generalize from a given context to another situation." Leary's "private symbolism" equates to Harris' "ability to abstract." Following the equation of each theorist's three basic processes, logical progression seems to indicate that if the premises of the system are related, then the conclusions should also be related. Hence, a relationship between performance on the DAM test and social adjustment/maladjustment becomes tenable in light of Leary's definition of social variables.

In order to measure the extent of this supposed relationship, it is necessary to select a relevant criterion measure of social adjustment. Fortunately, there exists an instrument that is readily adaptable to this use, and in fact encompasses some aspects of the relationships just described. The Devereux Child Behavior Rating Scale (DCB) was developed in 1964 with the expressed purpose being to

". . . reliably describe the patterns of symptomatic behaviors as observed in 'real life' situations" (5, p. 1). The scale ". . . provides a means whereby an individual who has intimate living contact with the child can reliably describe and communicate to others regarding overt symptomatic behavior" (5, p. 3). According to the manual, the scale is considered by the authors to be a reliable behavior criterion for use as a research tool (15, p. 3).

The DCB measures seventeen behavior factors which cover such areas as basic self-care, control of body processes, attentive power, need for independent mastery, and areas related to social functioning that are basic to the establishment of effective reality contacts and meaningful interpersonal relationships. Of these seventeen factors, five are dominant in their measurement of interpersonal behavior. These factors and their descriptions follow:

1. Social Isolation.

This factor taps the extent to which the youngster is socially "in contact" with his peers. The factor being measured combines social fearfulness and avoidance with the tendency to be rejected by peers. Youngsters with moderate retardation (around IQ 70) tend to show more social isolation than those with less or more intellectual efficiency (15, p. 10).

2. Inadequate Need for Independence

Factor scores measure the extent to which a child fails to show the usual signs of striving for autonomy. Inadequate

need for independence is greater in lower IQ youngsters. Certain youngsters diagnosed as schizophrenic obtain higher scores on this factor, possibly reflecting their inadequately developed sense of "self" (15, p. 13).

3. Need for Adult Contact

This factor taps the tendency to approach adults, implying an emotional need for adult contacts, relationships, and/or approval. Many children with the clinical diagnosis of schizophrenia or personality disorder obtain lower scores due to their exaggerated social distance (15, p. 16).

4. Social Aggression

Items in this factor combine the elements of aggressive intent and peer relations. While the aggressive aspect is more clearly in evidence, the social aspect must not be underestimated. Over a broad IQ spectrum, high scores tend to occur in children who show other signs of social relatedness. Among severely retarded children, factor scores are related to the efficiency of communication with others and maturity of language development, both of which increase as social relatedness to adults increases (15, p. 19).

5. Unethical Behavior

The four items in this factor are unambiguous in their suggestion of an absence of internalized codes of ethical social conduct. Scores are positively related with IQ across a broad range of IQ. The suggestion is that high scores on this factor do not stem from an inability to understand

intellectually, that such behavior is frowned upon, but rather from a deficient learning or "introjection" of certain "moral" codes of conduct while growing up. (It should be noted that this factor was chosen because it was felt that failure to internalize cultural norms indicated a failure in the socialization process resulting largely from faulty interpersonal and social relationships (15, p. 17).)

To summarize, then, the DAM measures the level of intellectual functioning of pre-adolescent children by sampling the child's ability to perceive a concept, the ability to abstract from that concept, and the ability to generalize that abstraction to another context. Leary's definition of adjustment in terms of the totality of personality components requires effective interpersonal functioning at the subdivisions of personality that he defines as public interaction, perception, and private symbolism. These terms are, as noted, to some degree analogous to Harris' three vital elements, and indicate that some relationship might exist between the two measures. A third indicator of the relationship between intellectual function and social adjustment, and the chosen criterion measure, is the DCB rating scale, which develops several factors of interpersonal and social behavior. Hence, the course of this investigation is indicated.

The Problem

Since the premises and history of the DAM seem to indicate a relationship between this technique and adjustment/

maladjustment, and since Leary defines maladjustment in terms of interpersonal behavior, the problem to be studied is to attempt to quantitatively relate DAM scores with some objective measure of social adjustment or maladjustment in children. The criterion chosen for this purpose is the DCB rating scale. The hypothesis, then, follows:

There will be a significant positive correlation between children's performance on the Goodenough Draw-A-Man Test and quality of social and interpersonal adjustment as measured by selected forms of the Devereux Child Behavior Rating Scale.

Related Research

The justification of the Goodenough Draw-A-Man Test as a valid measure is extensive. In addition to the presentations made by Goodenough (who found a .74 W/SB) (5) and Harris (6), much independent research has solidly established the DAM as an easily scored, relatively culture-free measure of intellectual efficiency. Kennedy and Lindner (8) found a .67 correlation between the DAM and the Stanford-Binet form LM. Carkhuff (2) found an r between the DAM and the WAIS Full Scale of .74, with r 's between scorings of .93, .93, and .92 for the three judges. Vane and Kessler (19) found test retest reliability ranging from .60 to .80, as well as correlations with the Stanford-Binet ranging from .53 to .58. Their summary was that the DAM was indeed a reasonably effective, quickly scored measure of intelligence in children.

In order to determine the degree of freedom from cultural influence of the DAM, Thomas and Sjab (17) administered the test to a group of Indonesian children and found that ". . .the DAM yields sufficiently promising results to warrant its use as a measure of ability for Indonesian children" (p. 234). Kennedy and Lindner (8), in a normative study with 1500 Negro elementary school children also found the measure to be effective. Hence, the claim of the DAM to be relatively culture-free would seem to be justified.

As a technique for the evaluation of personality, the DAM has a strong theoretical and empirical background. The Reichenberg-Hackett Study (1953) showed that experimentally induced, positively toned emotional states influenced children toward improved drawing performance. Una (20) tested a group of Israeli children and concluded that "children describe the perception of their external world in their drawings" (p. 495). This would suggest that some aspect of the individual's "mental set" is incorporated in the drawing process. If this is true, then pathology would be detectable through analysis of the drawings. In support of this theory, Kahn and Jones (7) had prospective admissions to a mental institution draw a figure prior to any other examination. Correlation of the analysis of the figure to the complete mental examination led to the conclusion that the drawing was indeed a good screening device for the judgment of pathology. Lewinsohn (10) also found a direct relationship between the

height of a figure drawing and the degree of depression evidenced by a group of mental patients, with significance extended to the .01 level of confidence.

Several researchers have used the DAM test itself to measure pathology. Des Lauriers and Halper (4), for example, found lower IQ scores in schizophrenic children with the DAM than with another standard measure of intellectual functioning. This was attributed theoretically to the psychotic child's body image disturbance which results from faulty perception of both himself and others. Bender (1) used the DAM with a small sample of children suffering from post-encephalitic behavior disorders and found that the DAM IQ was much inferior to scores on the Stanford-Binet. She hypothesized that the cerebral damage caused by the disorder had resulted in considerable impairment to the perceptual processes necessary to accurately form a meaningful "body concept" whole. Chase (3) noted small DAM differences between paranoids and normals after matching IQ on the Stanford-Binet. Again, this difference was attributed to a failure to accurately perceive self or other body image.

More recently, Vane and Eisen (18) attempted to determine the sensitivity of the DAM to the school adjustment of 662 kindergarten children. The criterion was teacher's ratings of adjustment. It was found that at least four DAM signs proved to be significant in the identification of those children deemed to be suffering from maladjustment. Richey

and Spotts (13) found a direct relationship between the drawing of a figure and the popularity of the child, indicating to some extent a relationship between the principles and premises of the DAM and pathology of interpersonal adjustment.

It follows from this research that the Goodenough, in addition to serving its original purpose, shows promise as a measure of personality adjustment. This assumption is probably most soundly supported by Machover's (11) extensive treatment of the subject. There is, however, little research into the interpersonal implications of the pathological behavior detected by the DAM and related techniques, since most of the above studies tend to mention behavior limited to the evaluation of intra-personal disorder.

The related research associated with the Devereux Child Behavior Rating Scale originates with the development of the scale by Spivak and Levine. It stems from research oriented toward providing "a reliable and quantitative system of symptom description to provide the basis for a more useful diagnostic nomenclature" (14, p. 3). In a further investigation, Spivak and Spotts (16) factor analyzed 121 behavioral symptoms to produce a series of first- and second-order factors. These factors were investigated and developed into the DCB scale, which was published in 1966 (15). The manual outlines (without reference) further validating research, and normative data. It is vital to note that a rater reliability of .77 to .83 was found, insuring, to some extent, the validity of the ratings.

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CHAPTER II

RESEARCH METHODS

Subjects

The subjects chosen for this experiment were 47 pre-school children enrolled in a private kindergarten in Denton, Texas. Some upward skewing of the DAM scores was expected due to the limited nature of this sample, but this problem did not, however, materialize, as will be demonstrated. The children ranged in age from four to seven years of age. The subjects were divided into four classes by the kindergarten, and this division was not disturbed.

Instruments

The measures chosen for this investigation were, as previously described, the Goodenough Draw-A-Man Test of Intellectual Maturity, and the five selected factors of the Devereux Child Behavior Rating Scale. The DCB factors are intended to be statistically independent of one another. Hence, no harm to the validity of the scale is done by extraction of isolated factors. The DCB was scored according to the instructions outlined in the manual (2).

The Harris revision of Goodenough's original scoring methodology (1) was selected because of its greater refinement and more explicit instructions, as well as the provision

of more extensive and recent normative data. Harris' entire test revision was not employed because of a lack of independent verification data concerning the modification to Good-enough's original technique.

Procedure

Prior to administration of the DAM test, a condensed set of instructions for administration was given to the teachers involved (See appendix). Since the DAM was to be administered by each child's teacher in the class setting, the teachers were briefed concerning the purpose of the test, directed to read the instructions, and counseled concerning any questions or misunderstandings. The DAM was then administered as part of the normal classroom activity. All of the standardized procedures set forth by Harris were rigidly followed, with only the exception previously noted. Each child was given paper and pencil identical to that of his neighbors, and no individual attention was given except as provided for in Harris' manual.

Following completion of the test, three independent scorers (the investigator and two trained assistants) evaluated the tests according to Harris' guidelines. In order to assure objectivity of rating, each test was scored three times, once by each independent judge. In order to evaluate the objectivity of the scoring process, a rank-order correlation was computed between the three raters. Results of

the intercorrelations showed coefficients of .87, .90, and .91 between all possible combinations of judges.

The revised DCB rating forms were then distributed to the teachers and instructions given. The teachers were encouraged to take all the time they wished in order to complete the forms, thereby assuring studied attention to rating. Following the collection of the rating scales, the various factor scores were compiled.

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CHAPTER III

RESULTS

The results derived from the procedures outlined in Chapter II were examined statistically in order to provide a basis for acceptance or rejection of the major hypothesis. The main part of this examination involved Pearson product-moment correlations between intelligence as measured by the DAM, and the several selected DCB factors. These correlations are summarized in Table I, with significance determined by attainment of the .05 level of confidence.

TABLE I
CORRELATIONS OF DAM SCORES AND DCB FACTORS

DCB Factor	Correlation with DAM Scores	Significance
Social Isolation	-.1731	N.S.
Inadequate Need for Independence	-.1218	N.S.
Need for Adult Contact	+.1175	N.S.
Social Aggression	-.1642	N.S.
Unethical Behavior	-.0242	N.S.

The results presented in this table indicate that none of the five DCB factors correlated to a significant degree with DAM IQ since an r of .288 was necessary to produce

significance. It will be noted, however, that four of the five correlations were in a negative direction, that is, in the hypothesized direction. The highest correlation produced was between DAM IQ and DCB factor Social Isolation (-.1731).

Since the basic correlation of factors failed to produce statistically significant relationships between the variables, another technique, not directly related to the major hypothesis, was attempted. The Ss, with a total DAM score range from approximately 62 to 137, a mean of 92.65 and a standard deviation of 15.74, were divided into three groups on the basis of ability as represented by DAM scores. These groups and their limits follow:

Group I: Lowest 25 per cent (62-82)

Group II: Middle 50 per cent (85-96)

Group III: Highest 25 per cent (101-137)

Next, the mean DCB factor scores were computed for each of the three DAM ability groups. This technique is employed in order to attempt to discern any potentially meaningful indications of trends, whether or not these trends approach a degree delineated statistically significant. The DCB means and standard deviations are presented in Table II.

TABLE II
 MEANS AND STANDARD DEVIATIONS OF DCB FACTOR SCORES
 FOR EACH OF THREE DAM ABILITY GROUPS

DCB Factor	Low		Middle		High	
	M.	S.D.	M.	S.D.	M.	S.D.
Social Isolation	7.3076	3.9102	5.4166	3.0127	4.8000	2.1817
Inadequate Need for Independence	13.3076	1.4349	13.1250	1.9856	11.9000	1.8138
Need for Adult Contact	9.3846	3.4090	8.7083	2.7760	11.0000	3.5777
Social Aggression	14.3846	5.0052	14.5000	4.8045	12.5000	3.1064
Unethical Behavior	7.0769	2.0176	6.0833	2.3614	7.0000	2.7202

Examination of this table in order to discover ascending or descending trends in means of the DAM groups shows DCB Social Isolation to be related linearly with DAM ability, although not to a significant statistical degree. This same factor, as previously noted, also bears the highest level of correlation.

Following this computation, a simple analysis of variance was computed to test the significance of the differences among the three sample means for each DCB factor separately. This procedure generated five analyses of variance summary tables which are presented as a composite in Table III.

TABLE III
SUMMARY OF SIMPLE ANALYSES OF VARIANCE

Source	Sum of Squares	Dif.	Variance Estimate	F Level
1. Between	43.0740	2	21.5370	2.0414
Within	464.2026	44	10.5500	
Total	507.2766	46		
2. Between	13.3653	2	6.6826	1.9056
Within	154.2943	44	3.5066	
Total	167.6596	46		
3. Between	37.0710	2	18.5355	1.7575
Within	464.0345	44	10.5462	
Total	501.1064	46		
4. Between	30.3379	2	15.1689	.6841
Within	975.5771	44	22.1722	
Total	1005.9150	46		
5. Between	10.8606	2	5.4303	.9163
Within	260.7565	44	5.9262	
Total	271.6171	46		

Code:

1. Social Isolation
2. Inadequate Need for Independence
3. Need for Adult Contact
4. Social Aggression
5. Unethical Behavior

Again, there was no evidence of significant relationships, although the highest level of interaction appears on DCB Social Isolation, indicating that perhaps this factor bears the greatest relationship to DAM IQ.

Although in no way involved with the major hypothesis, a third operation was integrated into the examination of data. This process involved correlation of the interfactor relationships of the DCB scale. These results are presented in Table IV. Significance is again achieved by attainment to the .288 level, and is noted by an asterisk (*).

TABLE IV
INTERCORRELATIONS OF DCB FACTORS

	Inadequate Need for Independence	Need for Adult Contact	Social Aggression	Unethical Behavior
Social Isolation	.0453	-.1875	.0792	.1750
Inadequate Need for Independence	. . . .	-.1292	.0799	-.0552
Need for Adult Contact	. . . .	. . . .	.4309*	.7075*
Social Aggression	. . . .	. . . .	. . . .	.4359*

In this case it will be noted that three factors are correlated to a significant degree, namely Need for Adult Contact and Social Aggression; Need for Adult Contact and Unethical Behavior; and Social Aggression and Unethical Behavior. This finding suggests that, in this population at least, the DCB factors are not entirely homogeneous.

CHAPTER IV

DISCUSSION OF RESULTS

Results Relating to Major Hypothesis

In any investigation, there are two basic areas wherein error may foil the affirmation of the hypothesis. Initial failure of theory, encompassing analysis of previous research and deduction from the premises thereby derived, can lead to the statement of a hypothesis which is inherently inaccurate. Thus, the results of an accurately conducted test of the hypothesis will prove the statement incorrect.

Conversely, a hypothesis properly researched and formulated and based on sound theory, can be rejected because of faulty technique in administration. This broad heading includes the use (or misuse) of improper measures, that is, not measuring what should be measured in order to adequately test the hypothesis. Secondly, the population sample may not be appropriate for the problem to be investigated. Thirdly, improper administration of the investigation must be included; that is, admission of extraneous variables or commission of administrative errors which lead to the confounding of results.

A review of the results presented in Chapter III indicates that the working hypothesis of this investigation

was not affirmed; that the previously stated level of significance was not reached by any of the necessary combinations of factor scores. Hence, the hypothesis, that there would be a significant positive correlation between children's performance on the Goodenough Draw-A-Man Test and quality of social and interpersonal adjustment as measured by selected factors on the Devereux Child Behavior Rating Scale, must be rejected. It is the purpose of this discussion to attempt to speculate as to possible reasons for the results as well as to indicate areas which might warrant further research.

As stated, none of the correlations between the five DCB factors and DAM scores from the total population proved significant. The highest correlation, as well as the highest degree of interpretation (keeping in mind that negative correlation is compatible with the hypothesis, since the DCB factor's scores should vary inversely with DAM score) is exhibited between factor two, Social Isolation, and DAM IQ. This level is approached by factor five, Social Aggression. These seemingly disparate indications may be reconciled to some degree by returning to the DCB Manual's description of the factors.

The DCB Manual states that Social Isolation scores tend to be highest in "children who communicate poorly and show poor language development" (5, p. 11). By the same token, Social Aggression is "related to the efficiency of communication with others and maturity of language development... ."

Hence, the common factor of "communication." A return to the Related Research section of the Introduction will reveal that several of the researchers quoted--Des Lauriers and Halper (3), for example--found the DAM to be significant measure of disorder in psychotic children. Is it not conceivable, then, that the impairment of communicative ability suffered by the psychotic or seriously disturbed child may in some way be related to his lowered level of Draw-A-Man performance? It follows from this suggestion, then, that the communication-related elements of the DCB Social Isolation and Social Aggression factors are somehow tied to the same basic processes that are employed in DAM figure expression, and that both are related to social and interpersonal interaction. One explanation for the confluency of these three factors might be that the child perceives sense data more accurately from a social situation than from the isolation of an individual perceptual system. This observation is substantiated by Colley, who states:

. . . a human comes to have a self--to experience personal identity--only through interpersonal intercommunication. . . . Thus the "self" is largely a social product, dependent upon the process of communication for its development. Much that is called personality can be viewed as a result of the meanings and expectations others bring to their interactions with us (1, p. 17).

This theory is consistent with the Des Lauriers and Halper theory that the basis of the psychotic child's lessened DAM performance is ". . . a body image disturbance resulting from faulty perception of both himself and others" (3, p. 66).

The child suffering from problems in interpersonal communication (as measured to some degree by the DCB scales Social Isolation and Social Aggression) is not afforded the social contact necessary to adequately form accurate perceptions of his own and others' "body image," especially when his perceptions are markedly distorted by psychosis. Hence, he performs badly on an expressive measure such as the DAM test.

By the same token, the lowest correlation is seen in the category Need for Adult Contact. Again from the DCB Manual, ". . . scores increase with the increase in ability and/or willingness to verbally communicate. The relationship between active socialization with adults, and language and communication is intimate" (5, p. 16). We see, then that the child who scores most highly on the DAM also scores highly on Need for Adult Contact, a factor which to some extent is relevant to communicative ability, and varies directly with that ability. Yet the child who scores poorly on a measure of communicative ability scores poorly on the DAM. We can theorize from this somewhat insubstantial data that the DAM test may be measuring some facet of communication based on interpersonal behavior, or that some process inherent in DAM performance is also inherent in the DCB factors mentioned. Although this theory is at best speculative, it is not inconsistent with either the hypothesis or the background of this experiment and would seem to merit further investigation.

Just as the correlation of factors yields no significant data, the analysis of variance fails to give insight into any meaningful relationships inherent in the Results. It was initially felt that an effect or relationship present in one level of intellectual ability might not be found in another, disparate stratum. The most nearly significant factor, again, was Social Isolation, which seems to be most directly related to intelligence. Since communicative ability is inherent in the theoretical structure of intellectual functioning, that we have seemingly developed for the DAM, then this finding is again to some degree consistent with our hypothesis.

The summary of the basic data relevant to the working hypothesis reveals no statistically significant relationships. It does, however, appear meaningful when related to the totality of the Results and the dominant theme of the Related Research. To state the problem on a logical continuum, the DAM is purportedly a measure of intellectual function, measuring the accuracy of a child's perception and expression of a "body image" concept. But it has also proven valuable as a tool in the detection of personality disorder. Leary defines maladjustment in terms of interpersonal and social relationships which, of necessity, embody a communicative element. The DCB factors most nearly related to DAM performance also tend to embody this communicative element. And Colley summarizes the dilemma by

theorizing that formation of a perceptual system, and resultant conception of a "self-image" is dependent on interpersonal and social relationships. Hence, it can be stated that there are indications that the Goodenough Draw-A-Man Test of Intellectual Functioning is measuring, in addition to the pure intellectual process, a social and communicative process. Admittedly this interpersonal process is not independent of intelligence, nor has it ever been suggested that intelligence can develop completely independent of social contact. Yet perhaps communication and interpersonal relationships are more vital than has been suspected, especially in the sense that a perceptual system is formed on the basis of other's reaction to his own behavior and personality, as described by Cooley's "Looking Glass Self" theory (2).

If all the above is to any extent true, why, then did the investigation not produce significant results? Returning to the brief summary of areas of error at the beginning of this chapter, it is possible to analyze systematically this investigation in order to discover its failures. Under the heading of Theory, it is felt that the background material, and the deductions from this material to the statement of the problem and the resultant hypothesis, were not greatly in error. The fact that the trends present in the data would seem to indicate a potential for substantiation of the hypothesis, confirms the belief that the foundations of the experiment were sound.

Technique, then, would seem to be the culprit. Since all possible variables were standardized, and statistical analysis shows the population sample to be sound, it follows that the error lay in the selection of measures. Either the DAM test did not adequately measure the element of social and communicative interaction that seems to have been isolated, or the DCB was not an adequate criterion for that measurement, (or both elements conspired to produce the error).

It is felt that, to some extent, both of these areas are contributory. Taken as a criterion, the DCB measures broad factors each of which embodies a component of interaction and communication, but none of which are pure in that measurement. It is conceivable, then, that the factor of social communication was not dominant enough to be able to sway the results significantly. It is also conceivable that the rating scale methodology employed by the DCB is not adequate to sample that behavior labeled as "communicative and interpersonal," although the description of the factors employed would seem to indicate their adequacy for the job at hand. It can only be concluded that the novelty of the DCB scale has not allowed sufficient research to be fully confident of its abilities, and that any usage of the scale must be accompanied by caution concerning the intended application.

Far more probable than rating scale error, however, is error in selection of the DAM IQ score as a measure in this investigation. Although it may seem paradoxical to state, on the one hand, that the working hypothesis may in fact be valid, yet on the other hand state that the very measure vital to that hypothesis is invalid for the purpose, it is felt that this dilemma can be rectified. The problem lies in the use of total IQ scores as produced by the DAM to correlate with the criterion. Vane and Eisen (6) concluded that four signs were more significantly related to poor adjustment than any others. These were labeled "grotesque," "no body," "no mouth," and "no arms." By the same token, Lewinsohn found that height of drawing was more indicative of maladjustment than any other factor. It would seem that the theory behind the use of the DAM as a measure of maladjustment is sound, but that only some factors prove significant indicators of disorder. The totality of the scores is not a satisfactory measure, except in markedly abnormal cases. The error in this experiment was in the assumption that atrophied factors would lead to an atrophied total score. Apparently this is not true, for the DAM scores tend to balance the abnormal factors to produce a normal score. It is possible that the scoring directions are adequate only for the purpose of intelligence evaluation, and not for the task of personality evaluation. If this is true, the use of

the DAM as a measure of personal (or interpersonal) adjustment is dependent on two courses.

The DAM can be used projectively, as a fairly subjective measure of personality structure (based on the same basic premises as those stated in the theoretical introduction to this study). This has in fact, been done, and the theories stated provide the basis for such instruments as the Draw-A-Person, the House-Tree-Person, and the Draw-A-Group techniques, to name only a few. Although the utility of these tools is obvious, they suffer greatly from subjective and highly intuitive scoring structures, and lose the objectivity for which such strict scoring mediums as those presented by the DAM are commendable.

Secondly, a new scoring structure could be devised based on the style of the DAM. A point by point analysis of the drawing with emphasis on abnormality could be developed to aid in the diagnostic function of the test, yet retain the objectivity so vital to the true success of any method. Rigorous investigation and standardization might well reveal drawing abnormalities common only to a given diagnostic classification or disorder typology. Further research would indeed seem indicated in this area, for such a tool would be valuable indeed in the identification and treatment of childhood disorders.

Interrelationship of Devereux Factors

As an ancillary element of the statistical analysis a Pearson correlation of the five selected Devereux factors was

undertaken. According to the research on which the DCB is based, the seventeen Devereux factors were developed through factor analysis of descriptions of behavioral observations. The result was felt to be seventeen fairly distant factors providing not an analysis of personality "traits," but rather a profile of problem areas in children's behavior, with the goal being a "reliable and quantitative system of symptom description. . .providing the basis for a more useful diagnostic nomenclature" (4, p. 701). Although it is not claimed that these factors are totally independent of one another, the statistical analysis and factor isolation was felt to assure a reasonable degree of item homogeneity.

The results exhibited in Table IV indicate, however, that for this sample, the assumption of homogeneity is not necessarily warranted. Significant correlations between factors measuring Need for Adult Contact and Social Aggression, Need for Adult Contact and Unethical Behavior, and Social Aggression and Unethical Behavior, point to common elements in each category. One explanation for this difference might be found in examination of the population groups. The original DCB developmental work was undertaken on institutionalized children, whereas this investigation concerns normal children in the home environment. In addition, the DCB rating was done by the houseparents of the children involved, and it is logical to assume that these individuals were more competent to rate the child due to their more intimate living

contact with the subject, than were the teachers who judged the children used as subjects for this investigation.

In light of the paucity of research available concerning the DCB, it should prove interesting to further investigate the interrelationships between factors and in this manner to lend further data to available normative material. Only in this way will the full potential of this seemingly valuable instrument be realized.

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CHAPTER V

SUMMARY AND CONCLUSIONS

The purpose of this study was to investigate the relationship between intelligence scores of pre-school children on the Goodenough Draw-A-Man Test and factors of the Devereux Child Behavior Rating Scale which were thought to measure social and interpersonal adjustment. The theoretical and empirical data which formed the background for this study seemed to indicate a potential for the DAM as an instrument for the discovery of personality disorder and maladjustment. Since maladjustment in this context was defined in terms of social and interpersonal behavior, according to the theory suggested by Leary, it followed that some measure of interpersonal maladjustment might relate positively to DAM scores. Toward this end, five factors of the Devereux scale were selected as criterion measures. These factors were

1. Social Isolation
2. Inadequate Need for Independence
3. Need for Adult Contact
4. Social Aggression
5. Unethical Behavior

The working hypothesis was: There will be a significant positive correlation between children's performance on the Goodenough Draw-A-Man Test and quality of social and

interpersonal adjustment as measured by selected factors of the Devereux Child Behavior Rating Scale.

The sample of subjects consisted of forty-seven subjects aged four, five, six and seven years, who were enrolled in a private kindergarten in Denton, Texas. Each child was given the DAM test, and then was rated on the modified DCB by his respective teacher.

The DAM tests were scored by three qualified judges, with each test being evaluated three independent times. Correlations were computed between judges, with results yielding coefficients of .87, .90, and .91 between all possible combinations of judges.

To test the hypothesis, Pearson's coefficient of correlation was computed between the factor scores and the intelligence ratings. Secondly, an analysis of variance was computed between the low (lower 25 per cent), middle (mid 50 per cent), and high (upper 25 per cent) intelligence groups and each of the DCB factors. Neither the correlations nor the analysis of variance produced results to the previously set .05 level of confidence. Hence, the working hypothesis was rejected.

Some indications of trends, however, suggested that there may have been a common element at work in this data, although not to a significant level. The element of "communicative ability" seemed integral in the three most highly correlated measures, as well as in the theoretical bases

of the DAM test. It was then theorized that further investigation might reveal interpersonal communication to be a vital element in the formation of concepts necessary to effective intellectual performance, especially as measured by techniques such as the DAM.

In addition to this suggestion, proposals for the modification of the DAM technique to produce an objective measure of personality disorder were reviewed. In addition, and independent of the stated problem, the interfactor correlations between the DCB were examined in relation to available normative data.

The results of this study did not support the working hypothesis. They did, however, suggest some possible trends that could indicate areas of future research and development of both the DAM and DCB measures.

APPENDIX

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Instructions for Administration of the
Goodenough Draw-A-Man Test

Each child should be provided with a pencil and test paper. Crayons should not be used. The number two or two-and-one-half pencil is preferred. See that pictures and books are put aside, to reduce the likelihood of copying.

When the children are ready to begin drawing, ask them to make a picture of a man, the very best picture that they can make. Be certain that they understand they are to make the whole man, not just his head and shoulders.

While the children are drawing, stroll about the room and encourage those who are slow or who seem to have difficulty. Do not make adverse comments or criticisms, and do not give suggestions. If any child wishes to write about his picture, he may do so at the bottom of the sheet.

If children ask for further instructions, such as whether the man is to be doing anything particular like working or running, say, "Do it whatever way you think is best." Avoid answering "Yes" or "No" or giving any further specific instructions to the children.

The importance of avoiding every kind of suggestions cannot be overemphasized. The examiner must refrain from remarks that might influence the nature of the drawing. He must also see to it that no suggestions come from the children.

They should not hold up their drawings for admiration or comment.

There is no time limit for the test, but young children rarely take more than five minutes for the drawing. If one or two children are slower than the rest, it is best to collect papers from those who have finished and allow them to go on with their regular work while the slower workers are finishing.

A child may spoil his drawing and wish to start again. In such case he should be given fresh paper and be allowed to try again. All such instances should be noted on the margin of the paper after the child has finished his work.

If a drawing occurs in which the subject cannot be recognized, the child should be questioned about his drawing, taking great care to avoid suggesting the expected answer. Identify in writing on the picture all parts of the picture which the child explains. If the child is unable to respond, or if, as is frequently the case, he calls each part in turn "a man," then record this on the picture.

The Devereux Child Behavior Rating

Scale of Selected Factors

Child's Name _____

Child's Sex _____

Child's Birthdate _____

Rating Guide

- | | |
|---|--|
| 1. Base rating on child's recent and current behavior. | Consider only the behavior of the child over the past two weeks. |
| 2. Compare the child with normal children his age. | In most of the items, the standard for comparison should be the normal child of the same age and sex. |
| 3. Base rating on your own experience with the child. | Consider only your own impressions. As much as possible, ignore what others have said about the child. |
| 4. Consider each question independently. | Make no effort to describe a consistent behavioral picture or personality. It is known that children may display seemingly contradictory behavior. |
| 5. Avoid interpretations of "unconscious" motives and feelings. | As much as possible, base ratings on outward behavior you actually observe. Do not try to interpret what might be going on in the child's mind. |
| 6. Use extreme ratings whenever warranted. | Avoid tending to rate near the middle of all scales. Make use of the full range offered by the scales. |

7. Rate each item quickly. If you are unable to reach a decision, go on to the next item and come back later to those you skipped.
8. Rate every question. Attempt to rate each item. If you have no opportunity to observe the child in certain situations necessary for the rating, (e.g., bathing, eating, etc.) circle the item number.

You are going to rate the overt behavior of a child. For items one through twenty-four use the rating scale below. Write your rating number on the line to the left of the item number.

Very frequently	Often	Occasionally	Rarely	Never
5	4	3	2	1

Compared to normal children, how often does the child . . .

- | Rating | Item |
|--------|---|
| _____ | 1. Approach strangers who come to visit the unit or home? (Examples: go up to him, touch him, speak or ask questions if the child has speech) |
| _____ | 2. Seek out adult help in doing things? |
| _____ | 3. Express anger in a poorly controlled and tantrum-like fashion? |
| _____ | 4. Say other children or adults do not like him or are against him? |
| _____ | 5. Seek out adults for attention? |
| _____ | 6. Hit, bite, scratch, push, or in other ways hurt or attack other children in a free play situation with peers? |
| _____ | 7. React with immediate anger or upset if some other child interferes with his play or takes something that is his? |
| _____ | 8. Attempt to get in physical contact with adults? (Examples: hugs, touches, sits in lap, holds hand) |

- _____ 9. Express anger?
- _____ 10. Intentionally tell lies?
- _____ 11. Act bossy or domineering with other children?
- _____ 12. Complain that others are picking on him?
- _____ 13. Tease or bully other children?
- _____ 14. Take things that do not belong to him? (Steals)
- _____ 15. Get easily upset by peers? (Examples: when teased, pushed, etc.)
- _____ 16. Blame others for his actions?
- _____ 17. Annoy or provoke peers into hitting or in other ways attacking him?
- _____ 18. Burst into tears or rage with little provocation?
- _____ 19. Act dependent upon adults?
- _____ 20. Get very upset or overemotional if things don't go his way?
- _____ 21. Disobey the rules in games or in the house? (Cheat)
- _____ 22. Resist an adult offer of help in doing things?
- _____ 23. Show great pride and satisfaction when he has accomplished something?
- _____ 24. Want to do things for himself without help from others?

On the next items select the statement that best describes the child and write the number of that statement on the line to the left of the item number. If the child's behavior falls in between any two statements write the number between the statements

Very creative
and imaginative

1

2

Tends to be
creative and
imaginative

3

4

Does not tend
in one direction
or another

5

	Tends to be simple, repetitive, unimaginative		Completely lacking in imaginative and creative qualities
6	7	8	9

_____ 25. How imaginative is the child's play?

For items 26-28 use the rating scale below.

Extremely 8	Markedly 7	Distinctly 6	Quite a bit 5
Moderately 4	A little 3	Very slightly 2	Not at all 1

Compared to normal children his age, to what degree is the child . . .

_____ 26. Socially isolated or withdrawn?

_____ 27. Rejected or avoided by other children?

_____ 28. Timid or shy? (Will not "venture" out to try something new?)



[T-18]

1, 4, 9, 11, 22,
28, 30, 31, 33, 35,
39, 40, 44, 46, 47,
55, 63, 10-2-62

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