

THE USE OF THE DAP
WITH CONDUCT DISORDERS

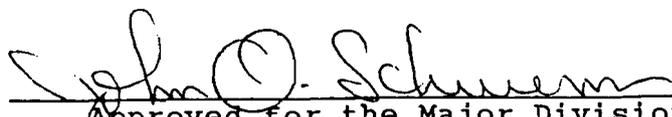
A Thesis

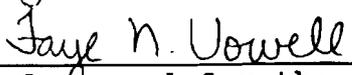
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The Draw-A-Person (DAP) test has been one of the most controversial tests used by clinicians today. The purpose of this study was to examine the validity of the DAP. For this study, drawings of two groups of conduct disordered and non-conduct disordered males and females, aged 10-16, were compared for the presence of nine indicators. These indicators were monster-like/grotesque figure, omission of arms, big hands, clenched fists, talon-like fingers, teeth, slash-line mouth, and toes on a clothed figure. These indicators were determined by Machover (1949) and Koppitz (1968) as being related to aggressive tendencies.

A chi-square was calculated for each indicator, and t-tests were computed to find overall significance between the groups. In the results, none of the t-tests or chi-squares reached significance, indicating no significant differences between the presence of indicators of conduct

and non-conduct disordered were found. In addition, no significant differences were found to exist between genders.

The results support the hypothesis that there is no significant difference between the drawings of conduct disordered and non-conduct disordered subjects. The most obvious conclusion that can be drawn from this study is that Machover and others are incorrect in stating these "indicators" actually detect aggressive/anti-social tendencies. In addition, it also suggests the use of drawings as a diagnostic tool is weak and subsequent research into the validity of the DAP is needed.

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CHAPTER 1

INTRODUCTION

Projective tests have been used by clinicians as assessment and diagnostic tools. These tests are unique in that the client is able to respond freely to the stimuli while the individual's attitudes, beliefs, and feelings are revealed. The research in this area has been overwhelming and controversial. One of the most controversial tests in this area has been the Draw-A-Person (DAP) (Falk, 1981).

Typically, this test involves having the client complete two drawings. These drawings consist of a picture of the same sex and the opposite sex of the client (Machover, 1949). Other variations of the test used include having the client draw a picture of himself/herself, his/her family, and finally a drawing of whatever the client desires. These drawings are then analyzed for signs of emotional distress. The research into the use of the DAP has both supported it and disputed it. However, the use of the DAP as a diagnostic tool has been continuously questioned. Despite these findings, the DAP is one of the top ten tests employed by psychologists today (Lubin, Larson, & Matarazzo, 1984). The popularity of this test is due to the ease of administration and scoring.

Research on the DAP test has been with various clients. These include delinquent children, schizophrenics, aggressive children and withdrawn children, (Fisher & Fisher, 1950; Daum, 1983; Norford & Barakat, 1990). Little

research has been conducted using the DAP to diagnose conduct disorders.

Conduct disorders are characterized by a display of extreme aggressiveness and emotional detachment. More specifically, this usually entails truancy, setting fires, lying, stealing, and physical cruelty to animals or people. This display of symptoms is parallel to the adult diagnosis of antisocial personality disorder. However, conduct disorder is a diagnosis used only for children and adolescents (American Psychiatric Association, 1987).

Statement of Problem

The validity of the DAP is highly questionable. Although some studies have supported it, the support has been limited. Given that the DAP is controversial, its use as a diagnostic tool is questionable. More specifically, the use of the DAP for diagnosing conduct disorders is questionable. The diagnosis of conduct disorder is complex, as are most diagnoses, and requires the use of tests that are very efficient and valid predictors of mental illness. The question is, does the DAP test elicit drawings that can be used to diagnose conduct disorders?

Statement of Purpose

This study was conducted using conduct and non-conduct disordered children who were given the Draw-A-Person test. The results were compared using chi-square and t-test statistics to see if differences existed between the two groups regarding the number of indicators found in the

drawings for both groups. For instance, do conduct disordered children exhibit signs common to this diagnosis in their drawings compared to non-conduct disordered children? If results are found to support that the DAP is invalid in diagnosing conduct disorders, then these findings would further question the validity of the DAP as a diagnostic tool.

Statement of Significance

The rationale behind this study comes from the lack of research in this area, the increased diagnoses of conduct disorders, and the fact that testing instruments must be effective. Because of the increasing popularity of conduct disorder diagnoses, clinicians need to use testing instruments that are most beneficial and accurate. If this study does in fact indicate the DAP is an ineffective instrument in determining signs of conduct disorder, this will force clinicians to be cautious when diagnosing with this instrument. If, however, this study proves the DAP is effective, this study will give validity to the DAP as an assessment tool for conduct disorders. Whatever the findings, it will provide a framework for future research and also add to our knowledge of the DAP.

Review of Literature

Projective testing as an assessment method has declined in use by psychologists. This is notably due to the results of studies and research in the area of projective tests (Rabin, 1986). Specifically, there has been disagreement among clinicians about the use of the DAP.

Despite the discrepancies and contradictions, the DAP is widely used by psychologists as an assessment tool.

Support for the DAP

The study conducted by Strommen and Smith (1987) addressed the reliability and validity of the DAP. Subjects aged 5, 6, 7, and 8 were given the test and scores were analyzed. The results found 5 year olds differ significantly from all other age groups regarding the internal consistency of the DAP. The 6 and 7 year olds showed no differences. The internal consistency of the DAP was assessed and found to be in the fair to good range. Across the sub-groups the reliabilities ranged from .63 to .92. However, for the 8 year olds the reliabilities were very high, .84 for males and .92 for females.

Koppitz (1966b) tried to determine which of the emotional indicators on human figure drawings relate specifically to conscious or unconscious attitudes revealed by aggressive or shy behavior. The following indicators: gross asymmetry of limbs, teeth, long arms, big hands, and genitals--were found in the drawings of aggressive subjects. Handler and McIntosh (1971) also used aggression as a variable. This study involved the use of aggressive, withdrawn, and control subjects in comparing the Draw-A-Person and Bender-Gestalt with behavioral observation and self-rating in the prediction of aggression and withdrawal. Results demonstrated the Bender-Gestalt and Draw-A-Person indexes may be scored with some degree of

reliability. The aggressive subjects showed the highest frequency of DAP and Bender-Gestalt aggression indexes.

Other studies have supported the DAP. One study (Pihl & Nimrod, 1976) assessed the reliability of the DAP when administered twice and also when the administration of the test was given by the examiner who was either present or absent from the examining room. Results support reliability of the test.

Koppitz (1966a) investigated the validity of the human figure drawing in identifying emotional indicators among children. Seventy-six pairs of clinical patients and well-adjusted children were compared. Findings supported the hypotheses that emotional indicators occur more often on clinical patient drawings than on well-adjusted children's drawings. Also found was a higher frequency of emotional indicators with the clinical patients than the non-clinical patients.

Recent studies have also shown support for the DAP. The first of these studies, conducted by De Fazio (1988), compared the drawings of 14 psychiatric inpatients who tended to draw the feet first and then the head last to 15 psychiatric patients who drew the human figure starting with the head first. Patients who drew the figure from the bottom up showed a higher prevalence of mental illness in their families and increased anti-social behavior in themselves.

Fabry and Bertinetti (1990) assessed whether human

figure drawings could be used to determine non-verbal cognitive maturity. The Human Figure Drawing test has been criticized because of its low validity coefficients with the Wechsler Intelligence Scale for Children-Revised. The coefficient for the Verbal subtests was .53 and .31 for the Performance subtests. This raised some questions about the non-verbal aspect of this assessment. Significant correlations were found for both scales. The value of .69 for drawings and WISC-R Performance I.Q. was significant, suggesting these tests can detect non-verbal maturity.

Although the previously listed research suggests support for the use of the DAP as a testing instrument, the support is somewhat limited. Wohl and Kaufman (1985) suggested that no single drawing should be used as a predictor but that a whole battery of drawings need to be administered and other variables need to be considered.

Non-Support for the DAP

Three studies that have not supported the DAP have used aggression as a variable. The first of these, conducted by Griffith and Lemley (1967), hypothesized that if teeth and a threatening look were related to aggression, then both signs must be present to infer verbal aggression. However, just because both signs are present it cannot be assumed that physical aggression will be found. Subjects were selected from 222 pupils from a state institution for the mentally retarded. After the test was given, the drawings were screened for the presence or absence of signs. The data did

not support the clinical impressions that teeth and a threatening look in the DAP could be used to infer physical or verbal aggression.

A similar study by Daum (1983) tried to link the personality traits of human figure drawings to delinquent populations. Two traits, aggression and withdrawal, were chosen. The human figure drawings of 200 male withdrawn or aggressive delinquents were evaluated. The list of traits compiled was based on the agreement of three or more authors. Only 2 of the 12 indicators of aggression were found to be significant. This study suggested that human figure drawings are affected more by the emotional and behavioral characteristics of withdrawal than by aggression. Furthermore, this study suggested extreme caution be used by clinicians when concluding aggressive or withdrawal tendencies based on human figure drawings. Daum (1983) also suggested drawings be used with other diagnostic aids.

The final study using aggression as a variable was conducted by Norford and Bakarat (1990). The purpose of this study was to determine if human figure drawings were related to aggressive and non-aggressive behaviors. It was hypothesized that the aggressive behavior would be associated with a particular number of indicators in a drawing. These indicators included missing body parts, gross asymmetry of limbs, and monster-like or grotesque figures. Thirty-two pre-school children were assigned to

two groups, aggressive or non-aggressive, based on the Child Behavior Checklist.

Results found there was no significant difference between aggressive and non-aggressive pre-school children. The omission of certain body parts and grotesque figures were not found to be more prevalent in the aggressive pre-school children. Results also suggest human figure drawings are not useful for discriminating between aggression and non-aggression in pre-school children. They concluded the use of human figure drawings as a diagnostic tool may not be appropriate due to the lack of development in pre-school children.

Other studies have questioned the reliability and validity of the DAP. Hammer and Kaplan (1966) investigated the reliability of human figure drawings of children. A total of 1,305 children in grades 4, 5, and 6 were assessed. The children were asked to complete drawings of persons and persons of the opposite sex. The task was repeated one week later. Only the omission of fingers was found to be reliable. The following indicators were found to be unreliable in children's drawings: the opposite sex drawings; girls' same sex drawings; omission of hands, feet, and nose; figures placed on the right side of the page; drawing of teeth; and boys' drawings of buttons.

Due to the use of figure drawings in evaluation, it is important to test some of the assumptions of interpretation. This was the case of the following study.

Fisher and Fisher (1950) wanted to determine if using figure drawings detected paranoid trends and if, when evaluating the drawings, there was agreement with regard to the facial expressions and stance of the human figure. The study also wanted to see if raters who had special training in figure drawing analysis showed greater agreement than unskilled raters. Thirty-five drawings were selected from patients diagnosed as paranoid schizophrenics. Two procedures were used to complete the assessment. The first procedure looked for the presence or absence of paranoid signs. The judgement between the raters was inconsistent and suggested the detection of paranoid tendencies in figure drawings is difficult and unreliable. The second procedure attempted to determine if facial expression and stance can be interpreted reliably. The results indicated poor judgement among raters regarding descriptors of facial expression and stance. This study suggested the whole process of figure drawing analysis is questionable.

A review of literature by Swensen (1968) found the reliability of the content and structural variables of the DAP are relatively low for making clinical judgements. The review suggests several drawings need to be used when making clinical judgments. Furthermore, the review concluded the use of content and structural signs on the DAP are not likely to increase the accuracy of clinical judgements.

Other research studies questioning the use of the DAP were reviewed by Falk (1981). Falk analyzed the literature

along 3 dimensions: projective test theory, subject populations, and psychodiagnostic labeling. This study stated " a clinician who uses a projective technique aims at revealing the individual's internal world of feelings, expressions, and thoughts which is often obscure by psychological defenses" (p.467). According to Falk, these are not addressed adequately when testers are asked to make judgements based on one drawing or three drawings. This review stressed the importance of using children as subjects with the DAP. It also suggested people who are in the extreme of the normal/abnormal range do not present as much difficulty as the ones who lie in between. Also stressed was the fact that research needs to respond to the strengths and limitations of the DAP.

Summary

As stated previously, the reliability and validity of the DAP is highly questionable. Although there has been support for the DAP in the literature, it seems to be limited. Additional research has indicated the DAP is unreliable and should perhaps be discarded as a testing instrument. Given these findings, the controversy regarding the DAP remains and will continue to remain. However, further research into this area can only help by providing answers and allowing for follow-up research. Given that proper assessment of individuals is the goal of clinicians, the testing materials used must be reliable and valid. If clinicians do not use reliable and valid materials, they are

not going to get an accurate picture of the person. This inaccuracy will lead to improper diagnosis and possibly improper treatment. Therefore, practicing clinicians are given the responsibility to research assessment tools and to be aware of their effectiveness.

CHAPTER 2

METHOD

Subjects

Subjects for this study consisted of 80 children, aged 10-16 years. Forty conduct-disordered and 40 non-conduct disordered children (20 male and 20 female in each group) were randomly selected from the population. A simple random sample procedure was used to select the sample, including the use of the table of random numbers. The conduct disordered sample was drawn from a mental health center located in Topeka, Kansas. The conduct-disordered children were diagnosed by a Master of Social Work or a Registered Master Level Psychologist, based on information obtained during the intake process. The non-conduct disordered sample was drawn from after-school programs also located in Topeka, Kansas. Permission to use the subjects was obtained through the appropriate administrators. Written consent from all parents and all subjects participating in the study was obtained.

Testing Instrument

The Draw-A-Person technique was first used as an instrument to assess intelligence, but has since been used as a projective technique. Machover (1949) was the first to expand the use of the DAP as an assessment tool. She developed her test through clinical work with male adolescents and adult patients but extended her findings to include children and female adolescents (Koppitz, 1968).

The main purpose of the DAP is to gain insight into the subject and how the subject sees himself/herself in relation to his/her surroundings. The test itself is very easy to administer and takes approximately 10 to 20 minutes to complete. The only materials needed are pencil and paper. The administration consists of presenting the subject with the materials and asking him/her to draw a person. After the first person is drawn, the subject is asked to draw the opposite sex of the previously drawn figure. At times the subject may only draw the head. If this occurs, the subject is asked to complete the figure. It is recommended both drawings be collected. If, however, circumstances arise that allow for only one drawing to be completed, this is acceptable.

Observation of the subject while the task is being completed is to be inconspicuous and notes regarding the sequence of parts drawn and which sex is drawn first is done on another sheet of paper (Machover, 1949). Although there is no scoring system for interpretation of the DAP, Machover (1949) provided detailed accounts outlining the meanings of features drawn. Due to the various meanings related to the drawings, interpretation of the DAP is somewhat complex. Drawings of the DAP need to be examined carefully to ensure valid interpretations. For this study, carefully defined indicators were used to help simplify the interpretation.

Procedure

Permission to complete the study was obtained through

the Human Subjects Review Board and the appropriate administrators. A list of eligible conduct-disordered children and non-conduct disordered children was obtained through the after-school programs and mental-health center. A letter explaining the study and a permission form were sent to the parents of the subjects. Parents were assured of confidentiality of their children's results. To obtain strict confidentiality, the subjects were identified by a number. Only the identification number and the gender were on the test record.

After agreeing to participate, the subjects were administered the DAP. The testing took place within the span of one month. All testing was conducted by the author of this thesis. However, to control for Rosenthal effects, the protocols were scored by two other individuals who have been trained in the DAP.

Subjects were tested one at a time in an enclosed room with adequate lighting and temperature level to control for the effects of extraneous variables. Each subject was given an 8½ x 11 piece of paper and a No. 2 pencil. The subject was asked to draw a picture of a whole person. After completing this task, the subject was given another piece of paper and was asked to draw the opposite sex of the previously drawn figure. The subject was assured that if at any point during the testing procedure he or she wanted to discontinue, the examiner should be so informed.

Both of the subjects protocols were assessed for the

presence or absence of indicators described by Machover (1949) as being related to conduct disorders. The first of these indicators was gross asymmetry of arms, defined as one leg or arm differing markedly in shape from the other leg or arm. The second, monster-like or grotesque figure, is a figure that represents a degraded, non-human, or ridiculous person. In order to be an indicator, the grotesqueness of the figure must be deliberate on the part of the child and not a result of his/her lack of drawing skill or immaturity. Complete omission of the arms was another indicator. Big hands were considered as an indicator when they were as big or bigger than the face of the figure (Koppitz, 1968).

Other indicators were clenched fists, specifically when the arm is away from the body, and talon-like fingers (fingers that are shaped like spears). Visible teeth were also considered to be an indicator. In addition, two more indicators, a slash-line mouth indicated by a heavy line and toes on a clothed figure, defined as toes that are indicated on a figure that is not meant to be clothed, were used. If the two raters disagreed on the presence or absence of an indicator, a third person acted as the final arbiter.

Statistical Design

A 2x2 statistical design was used in this study. The variables consisted of male vs. female and conduct vs. non-conduct disordered. The level of measurement was categorical. The data were analyzed using chi-square. A chi-square was computed for each indicator: gross asymmetry

of arms, missing body parts, monster-like and grotesque figures, talon-like fingers, clenched fists, toes on a clothed figure, slash-line mouth, and omission of body parts (Daum, 1983) to compare the frequency of indicators between the two groups. In addition, t-tests were calculated for the means of the groups, male vs. female and conduct vs. non-conduct, to determine if there was an overall significance. Justification for using chi-square was based on the fact that this technique is used when analyzing categorical data. The final step in the process was to find the contingency coefficient. In addition, Yates Correction was used, when necessary.

CHAPTER 3

RESULTS

Chi-squares were computed comparing two groups on nine indicators identifying aggressive and conduct-like tendencies: gross asymmetry of arms, monster-like or grotesque figure, omission of arms, big hands, clenched fists, talon-like fingers, teeth, slash-line mouth, and toes on a clothed figure. Frequencies and values of chi-square are presented in Table 1.

In addition, chi-squares were computed to compare the frequency of indicators between males and females. The frequency and chi-square values of gender are presented in Table 2.

A t-test was performed to compare the presence of indicators between the two groups. The mean result of the t-test, $t(78) = .13$, $p > .05$ was not significant. Additionally, a t-test was computed to compare the presence of indicators between genders. The mean result found that $t(78) = .91$, $p > .05$ was also not significant, indicating no significant difference existed between the groups based on group type or gender.

Frequency and percentage of indicators were also computed. Slash-line mouth and talon-like fingers were the indicators found most frequently, while monster-like/grotesque figure and omission of arms were present in only 1.3% of the drawings, as seen in Table 3.

Table 1

Frequencies and Values of Chi-square of Indicators

Indicators	Conduct	Non-Conduct	<u>χ^2</u>
	(<u>n</u> =40) Frequency	(<u>n</u> =40) Frequency	
Gross asymmetry/arms	3	3	1.0
Monster-like figure	0	1	.31
Omission of arms	0	1	.31
Big hands	3	4	.69
Clenched fists	2	3	.64
Talon-like fingers	8	12	.30
Teeth	7	5	.53
Slash-line mouth	13	8	.20
Toes on a clothed figure	2	0	.15

Note. All chi-square values were not significant.

Table 2

Frequencies and Values of Chi-square of Indicators between Male and Female.

Indicators	Male	Female	χ^2
	(<u>n</u> =40) Frequency	(<u>n</u> =40) Frequency	
Gross asymmetry/arms	4	2	.39
Monster-like figure	0	1	.31
Omission of arms	1	0	.31
Big hands	3	4	.69
Clenched fists	3	2	.64
Talon-like fingers	11	9	.60
Teeth	8	4	.21
Slash-line mouth	11	10	.79
Toes on a clothed figure	0	2	.15

Note. All chi-square values were not significant.

Table 3

Frequencies and Percentages of Indicators.

Indicator	Frequency	Percentage
Gross asymmetry/arms	6	8.0
Monster-like figure	1	1.3
Omission of arms	1	1.3
Big hands	7	9.3
Clenched fists	5	6.7
Talon-like fingers	20	26.7
Teeth	12	16.0
Mouth	21	28.0
Toes	<u>2</u>	<u>2.7</u>
Total Responses	75	100.00

None of the t-tests or chi-squares reached significance indicating no significant differences between the presence of indicators of conduct and non-conduct disordered drawings were found. In addition, no significant differences were found to exist between the drawings of males and females.

CHAPTER 4

DISCUSSION

The results of the present study support the hypothesis that there is no significant difference between the drawings of conduct disordered and non-conduct disordered subjects. These findings are similar to the findings of Norford and Barakat (1990), in which four of the previous indicators: gross asymmetry of arms, teeth, monster-like/grotesque figure, and big hands--were found to be not significant in detecting aggression in drawings of pre-school aged children. The most obvious conclusion is that Machover (1949) and others are incorrect in stating these "indicators" actually detect aggressive/anti-social tendencies. Another conclusion that can be drawn is that children, regardless of the presence or absence of pathology, draw figures based on their artistic ability and perception of body parts.

In addition, certain indicators may be affected by the subject's emotional state at the time the figures are drawn. For example, a subject may draw a slash-line mouth because he or she is feeling sad or angry rather than aggressive. Additionally, clenched fists may be drawn because the subject is angry at the time the figure is drawn, rather than exhibiting long-term signs of pathology.

The lack of significant findings for indicators of aggression suggest these indicators may not be applicable to conduct disordered subjects. However, perhaps there are

other indicators that are applicable, but not included in this study. For example, Dawn (1983) found only 2 of 12 indicators related to aggression to be significant.

The present study supports Falk's (1981) findings that the use of drawings as a diagnostic tool is weak. It also suggests drawings may not detect behavioral tendencies as Machover (1949) may have thought. At least drawings alone are not enough to infer behavioral tendencies. Further examination of the results suggest gender does not seem to be a factor in determining presence of indicators; in fact, females are just as likely as males to draw an indicator. In addition, females may be more likely than males to exhibit an indicator. In this study, females showed higher frequencies on three of the nine indicators.

Although this study shows evidence to question the validity of the DAP, this study is not without limitations. For one, the sample size was relatively small and this may influence the results. Perhaps if the sample size had been larger, significance would have been found. In any instance, sample size is a factor to consider. Another limitation is that age was not a variable in this study. The focus of this study was on the difference between group type and gender, rather than the specific ages of the subjects. Perhaps age could be a factor in future studies. It would be worthwhile to see what age groups typically present the most indicators. If the DAP is truly a depicter of behavioral tendencies, then older subjects

would exhibit more indicators because they have typically been exhibiting pathological symptoms longer.

Although the results of this study were not significant, what is significant is the continued controversy regarding the use of the DAP as a diagnostic tool. This study adds to that controversy and questions the validity of the DAP. So what do we as researchers and clinicians do? For one, we continue to research using different variables and different populations as was done in this study. Many studies have used the DAP, but virtually none exist that used the conduct disordered population. Perhaps, this study will elicit studies that take a further look at conduct disordered clients and the relation to the DAP.

Subsequent research could look at individuals with conduct disorders who are in the criminal justice system. It is possible these individuals show a higher frequency of indicators than the ones used in this study. In addition, researchers could investigate the presence of indicators using two groups that have a clinical diagnosis, such as conduct disorder and oppositional-defiant disorder. This could even be taken a step further in which conduct disorders are compared to anti-social personality disorders, which is the diagnosis given to those with conduct disorders over the age of 18.

This study has provided researchers with data suggesting the DAP may not be a useful diagnostic tool in

assessing behavioral tendencies and specifically, in depicting conduct disorder-like tendencies. It has also raised questions regarding the validity of the DAP and has given those who rely strictly on this tool, a reason to question. Clinicians as well as researchers have a responsibility to use tools that have been proven to be effective. One could argue there are plenty of studies that show the DAP is reliable and valid, and there are, but there are just as many who question it. This study provides one more reason to question and one more reason to do further research.

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