A Re-Evaluation of Upper-Left Hand Placement as an Indicator for Anxiety on The Draw a Person Technique

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Abstract

Johnson (1971) reported a significant positive relationship between upper-left hand placement of the figure and anxiety scores. His study contrasted with Handler and Reyher’s (1964) earlier work which said that figure placement was not related to anxiety. We extended these studies by adding more specific scoring criteria, a larger sample (N=154), with clearer demographic information, and a contemporary measure of anxiety (STAI: Spielberger, 1985). The current results indicated no particular relation between upper-left hand placement and anxiety. A 2-tailed independent samples t-test indicated the state ($t = -0.40$) and trait ($t = -1.78$) anxiety’s means were not significantly different from those who drew in the upper-left hand quadrant (State M (UL n=20) = 38.1, M (all others n=128) = 39.2; Trait M (UL) = 36.1, M (all others) = 40.7). The results we found are consistent with Waehler’s (1997) contention that attempting specific conclusions based on single-sign indicators in DAP drawings may be full of difficulties.

Placement may matter in relation to anxiety, however, the mixed results and limitations of this study (e.g. participant drawing ability and writing handedness) require further examination. The current study also expanded research in this area by asking participants about drawing characteristics related to anxiety which will lead to developing more complex hypothesis in future studies.
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Karen Machover’s monograph on the Draw-a-Person (DAP) technique (1949) caused people in the personality assessment world to look at a drawing subjectively to see what the client may be showing through the figure. This was radical because, at the time, the tests were mostly objective. The DAP has received both positive and negative attention for decades with debate centering on the reliability and validity of the instrument. Supporters of the method contend that when the DAP is used in conjunction with counseling the activity can open a passage for dialogue and allow a person to express him/herself in a nonverbal and nonthreatening way (Waehler, 1997). The drawing of a person becomes a way to promote conversation between client and clinician, especially for clients who may have trouble expressing themselves. On the other hand, the DAP has been criticized by scientists because of concerns about validity and reliability (e.g. Joiner, Schmidt, & Barnett, 1996). Despite this debate, the DAP remains popular among clinicians in practice (Reschly, 1998). A longitudinal study by Reschly (1998) surveyed school psychologists in 1986, 1992, and 1997 and found that the DAP was among the top ten assessment tools used consistently across the nine year study.

Anxiety has been one variable looked at in depth with the DAP technique (Kahill, 1984). Placement of the drawn figure on the DAP as an indicator of anxiety is one controversial area of examination. For every study that has found evidence for an anxiety indicator in the DAP there seems to be another article which refutes the concept of upper-left hand placement as an anxiety index (Handler, 1967).

Johnson (1971b) looked at upper-left hand placement as a specific indicator of anxiety in the DAP technique. In his article, Johnson’s participants (N=103) had two tasks; one was to draw a person and the other was to complete the IPAT Anxiety Scale. These tasks were given in groups and the order of the tasks were reversed for each group to control for effects of doing the DAP and the IPAT anxiety test in a certain order.

Johnson (1971b) examined the placement of the figure drawn, using the upper left hand placement as an indicator of anxiety. To measure the placement, Johnson folded the paper on which the figure was drawn vertically, then horizontally. If the entire figure was in the upper left
fourth of the page and no other part of the drawing was touching the horizontal or vertical lines then it was deemed to be upper left hand placement. Johnson found evidence that supported the hypothesis of upper left hand placement as an indicator of anxiety in his college student sample (z value significant beyond the .05 for a two-tailed test), although he did not report how many of their participants actually met this criteria.

Johnson’s (1971b) article is thought provoking, but the brevity and lack of detail about this sample and instrument limit their contribution. These results contradicted Handler and Reyher’s (1964) earlier conclusion that upper left hand drawing placement was not related to increased anxiety. Therefore, the evidence Johnson found for anxiety indicators on the Draw-a-Person (DAP) test deserves further attention.

What we did to improve Johnson’s (1971b) methodology was to use common and contemporary anxiety scale to improve the validity of the earlier assertions. The STAI anxiety scale is widely used because of its good psychometric properties and because it can be easily distributed to participants (Spielberger et al., 1999). Using more reliable and valid scoring instruments should increase the reliability and validity of the earlier studies.

Moving beyond Johnson’s (1971b) work, the current study also opened communication between the participants and the researchers to consider the issue of anxiety indicators on the DAP from a different perspective. Following suggestions by Waehler (1997), we wanted to see what people say about drawings if they speculated about what variables might be used to convey personality variables in the DAP technique. When the DAP is used clinically there is usually a dialog associated with it to better understand the person and his/her drawing (Waehler). We asked a question regarding what the participant would draw if he/she was trying to convey high levels of anxiety. The content analysis derived from answers to this question may shed light on future work with the DAP technique and its utility with assessing certain personality features.

Method

Participants
From the self reported demographics, the participants for this study were 154 college students with a mean age of 23 (SD 6.2) and a range from 18 to 60. The participants consisted of 113 (73%) female, 101 (66%) were psychology majors, 126 (82%) self reported being “white, Caucasian” and 19 (12%) reported “black, African-American.” In addition, 135 (88%) of the participants have never been married.

Measures

*The Draw a Person Technique.* DAP is considered a projective technique where the client is asked to draw a person on a blank 8½” x11” sheet of paper. We also asked participants to do another drawing, this time of the opposite sex. This second picture helped clarify any questions about gender of the drawings. Many studies have looked at specific indexes in a drawing to see if there are any direct correlations to personality traits (Handler, 1967; Kahill, 1984).

*Upper Left Hand Placement.* A template was placed over the figure drawings to see if the figure was placed in any particular quadrant of the paper. If nothing but the hands or feet were partially touching the intercepting lines then and it will be considered in the upper left quarter of the page.

*Anxiety and The State-Trait Anxiety Inventory.* Spielberger, Gorsuch, and Lushene first developed the State-Trait Anxiety Inventory (STAI) in 1970. They wanted to create an anxiety test that was relatively brief, reliable, and able to assess both trait and state anxiety. Ever since it was created, the STAI has been used frequently in clinical setting as well as in scientific experimentations (Spielberger, 1985). Spielberger et al. (1999) defined state anxiety (S-Anxiety) as an “emotional state for a specific situation characterized by unpleasant feelings, tension, worry, nervousness and which activates physical arousal” (p. 995). S-Anxiety fluctuates over time depending on the situation and it can vary in intensity. Trait anxiety (T-Anxiety), on the other hand, is a person’s “overall anxiety, how they perceive threats in a variety of situations” (p.995). T-Anxiety is meant to address individual differences and remain stable over a person’s lifetime. The higher T-Anxiety is, the more frequent and intense one’s S-anxiety is compared to someone with low T-Anxiety (Spielberger et al., 1999).

Different questions and rating scales are used for state and trait anxiety. Spielberger et al. (1999) discussed the rating scales for each anxiety type. An example of a T-Anxiety question is “I feel like a failure” and the rating follows a four point frequency scale; 1= “almost never” 2=
“sometimes” 3= “often” 4= “almost always.” A S-Anxiety question example is “I am worried” rates the participants’ intensity of their feelings on the four point scale of 1= “not at all” 2= “somewhat” 3= “moderately so” 4= “very much so.” The different scales are needed because T-Anxiety and S-Anxiety are testing different types of anxiety.

Johnson originally used the IPAT but we are using the STAI. The IPAT was constructed in 1960 by Cattell, and for the first 25 years there was “little evidence of 8-PF as a measure of anxiety” (Spielberger, 1985, p. 9). Spielberger (1985) also stated that “at best, the 8-PF is a confounding measure of state and trait anxiety” (p. 9). Not much was done to empirically support the IPAT; on the other hand, the STAI was built on empirical evidence. The STAI intergrated Cattell’s concept of state and trait anxiety and Freud’s danger signal theory. When the STAI S-anxiety test was being developed the most valid 20 items with test-retest stability were picked to test for state anxiety (Spielberger, 1985). The validity of the T-anxiety test is shown through the high correlations of the TMAS and ASQ anxiety test (Speilberger, 1985). Since the STAI was first published, it has been popular in both clinical and experimental settings (Reschly, 1998). In this study the alpha level for the state anxiety was .92, for the trait anxiety alpha level was .93.

Exploratory Question. Self-reported short answer question were used to get insight into the drawings provided. The question was: “If you were trying to create a drawing to convey that you were an anxious person what features would your put in that drawing.” The content analysis derived from answers to this question may shed light on future work with the DAP technique and its utility with assessing certain personality features.

Procedure

Each student signed an informed consent that was later kept separately from the rest of the experimental material. Each participant received a paper-clipped packet with a demographics questionnaire, DAP instructions, two blank 8½”x11” pieces of paper, the STAI and lastly the exploratory question. All of the participant’s packets were in the same order because we did not want the STAI to skew the drawings. In addition, a pencil was provided if a participant did not have one to complete the packet. The instructions were to unclip the packet, complete the demographics, draw a person on the first blank sheet of paper, and to draw the opposite sex of the first drawing on the second sheet of paper. After completing the drawing, the participants
finished the STAI and the last page had one question asking, “If you were trying to create a drawing to convey that you were an anxious person what features would you put in that drawing.” The last page of the packet was an educational piece that the participant took with them to understand what the project was about and how the participant contributed to the study.

Data Scoring

The Draw a Person Technique. The figures collected from the participants were quantified on three bases- missing body parts, stick figure, and location of figure. For missing body parts we identified what parts were missing (if any). Also, we identified if there was only a head or only a head and shoulders present in the figure. In determining if a figure was a stick figure, it was considered a stick figure if only the basic lines of a stick figure were present. Any additional clothes or the presence of hands and feet were considered not stick figures. A template was used to help determine the location of the figure. The figure was scored upper left when it was completely in the upper left quadrant where only the hands or feet may extend over the vertical or horizontal axes.

Exploratory Question. The answers were looked at using a content analysis approach to find similarities suggested by participants.

Results

Results of this study do not support upper-left hand placement as an indicator of either state or trait anxiety (see Table 1 below). On a 2-tailed independent samples t-test indicate the state \( t(146) = -0.401, p = .689 \) and trait \( t(146) = -1.78, p = .077 \) anxiety’s means are not significantly different than those who drew in the upper-left hand quadrant compared to those who did not. Additionally, using the basic significance test, as described by Miner (1983) where if \( \beta \) is more than 2 times the standard error it is significant. Using regression analysis tests it was found the higher the state (Std. Error=.003, \( \beta= -.033 \)) or trait (Std. Error=.003, \( \beta= -.146 \)) anxiety the less likely the participant was to draw in the upper-left hand quadrant. Higher state (Std. Error=.004, \( \beta= .144 \)) and trait (Std. Error=.004, \( \beta= .123 \)) anxiety participants were more likely to draw in the center of the page.
An open-ended question was asked to all of the participants regarding what features they would draw to try to convey anxiety. There was a wide range of responses. Common responses included 16 participants (10%) who stated they would either draw faster, make the figure smaller, or they would draw a frown for the mouth. 46 participants (30%) reported they would draw the figure messy or sloppy. However in the question an example was given as “messy” which may have skewed how many participants actually may have thought of that on their own.

Discussion

The Draw a Person Technique, although having questionable reliability and validity, still remains popular among clinicians in practice today (Reschly, 1998). Supporters state that, when used with counseling, the DAP can open a passage for dialogue and allows a person to express him/herself in a nonverbal and nontaxing way (Waehler, 1997). Also, the projective technique enables underlying personality traits to come through unconsciously and manifest themselves in the figure drawn by the client (Handler, Campbell, & Martin, 2004).

The current study’s results do not support the contention that upper-left hand placement is an indicator for high anxiety on the DAP technique. State and trait anxiety had a significant positive correlation, as one increases the other should too. In addition, it was found that participants with higher anxiety were less likely to draw in the upper-left hand quadrant and they were more likely to draw in the center of the paper. Although, some researchers have brought up that the overall picture, not just a single sign indicator, may be more important in determining the drawer’s motives than specific individual characteristics (Waehner, 1946).

The open ended question we asked regarding what they would draw to come across as being anxious lead to some interesting answers. Many participants stated they would draw faster, smaller or they would draw a frown for the mouth. Even more participants suggested they would draw messy or sloppy, but these answers could have been skewed by the fact that “messy” was given as an example for the question. The answers gathered from this study can facilitate further research from a different perspective.

Further research should gain a more diverse population while looking at right or left handedness and promoting more communication between the participants and researcher. The content analysis should be taken into account and should be looked at more closely to see if there
may be any variables that deserve further examination. At the same time, some researchers have brought up that the overall picture may be more important in determining the drawer’s motives than specific individual characteristics (Waehner, 1964), and this appears true based on the focus of the current study.

Another research opportunity would be to take a closer look at Karen Machover’s views on placement. Machover (1949) theorized that the left side is more self-oriented, where the right side is environmentally orientated. Up high up on the page is related to optimism and lower on the page is related to depression. She also mentioned that being high on the page gives the impression of being floating on the paper the subject may have a lack of secured footing, or unjustified optimism. All of these variables are worthy of attention, but having valid methods by which to assess these personality characteristics remains elusive.

One major inconsistency between the participants is their artistic ability. In this study 24 participants drew simple stick figures. This is one variable that gets criticism for the DAP but it is almost impossible to control for. The participants in this study received extra credit for their participation which questions their investment in the study and the quality of their participation. Lastly, this study failed to inquire the participant’s handedness; this could have implications on where the figure was drawn and needs to be assessed in future studies.

There is still so much research that needs to be done with the DAP technique and all other projective techniques too. However, this does not stop clinicians from using the DAP to open a pathway for communication in assessment or therapy. There are many ways to implement the DAP and other projective drawings into therapy sessions. As the field of psychology grows so does our knowledge about the people who surround us and the instruments we use.
References


**Table 1**

Comparing the means

<table>
<thead>
<tr>
<th></th>
<th>Upper-Left Quadrant (n= 20)</th>
<th>All Other Placement (n= 128)</th>
<th>2 -Tailed Independent Samples T-Test*</th>
<th>Independent Sample Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>State Anxiety</strong></td>
<td>M= 38.1 (SD= 13.0)</td>
<td>M=39.2 (SD= 11.1)</td>
<td><em>t</em> = -.401</td>
<td><em>p</em> = .689</td>
</tr>
<tr>
<td><strong>Trait Anxiety</strong></td>
<td>M=36.1 (SD= 11.8)</td>
<td>M=40.7 (SD= 10.6)</td>
<td><em>t</em> = -1.781</td>
<td><em>p</em> = .077</td>
</tr>
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*Equal variances assumed.*