THE USE OF OBJECTIVELY SCORABLE HOUSE-TREE-PERSON INDICATORS TO ESTABLISH CHILD ABUSE

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Conducted a study to determine whether the House-Tree-Person Test might be used as a means to identify physically abused children. Protocols of 32 abused children, 32 nonabused but disturbed children, and 45 apparently very well-adjusted children were examined for the presence of 15 objectively scorable items that emerged as good potential discriminators from a pilot study of 60 children. Results of several statistical analyses indicated (a) that items taken individually discriminate strongly between abused and well-adjusted children, but not between abused and nonabused but disturbed children; and (b) that items used collectively, specifically a 6-item test that comprised the 6 most discriminating individual items, discriminate reasonably well between abused children and both of the other two groups. Based on these results, this 6-item test is proposed for use by child care professionals in attempting to identify abused children.

In recent years, there has been growing concern among helping professionals about the number of children who have been abused physically by their biological or foster parents. The significant increase in research in this area is evidence of this heightened awareness and concern. Indeed, we now know a great deal about the characteristics of abusing parents (Blumberg, 1974; Spinetta & Rigler, 1972; Steele & Pollock, 1968), the social and situational factors that often contribute to abuse (Gelles, 1973; Gil, 1970; Steele & Pollock, 1968), and, to a lesser extent, the characteristics of abused children (Elmer & Gregg, 1967; Martin, Conway, & Kempe, 1974; Reidy, 1977).

Despite these advances, one vital area in which our knowledge has not increased appreciably is that of detection. Although the number of reported cases of child abuse has increased from year to year, experts agree that a tremendous amount of child abuse still goes undetected (Blumberg, 1974; Cohen & Sussman, 1975; Mitchell, 1975). This is so for a number of reasons. First, it is well known that children subject to such treatment typically do not report that they have been abused. Second, their parents, for obvious reasons, rarely reveal their involvement in abusive acts. Finally, other individuals in the community who may suspect that abuse has occurred, e.g., physicians and neighbors, frequently fail to report this. Typically, they are afraid of getting involved in others' family matters or are reluctant to make accusations about such serious matters without substantial evidence.

Despite these states of affairs, which greatly limit our ability to determine when a child is being subjected to serious mistreatment, at present we have developed little in the way of an assessment technology that would help us in this regard. Medical researchers have found numerous physical indicators of abuse (Caffey, 1974; Caruso, 1975; Eisenstein, Delta, & Clifford, 1965; Kempe, 1975). However, physical signs are not always present or observable and, even when observable, are open to multiple interpretations. Coupled with the fact that abusing parents often do not seek medical attention for their child after an attack, this suggests a need for other, nonphysical indicators of abuse.

Paulson and associates (Paulson, Afifi, Thomason, & Chaleff, 1974; Paulson, Schwemer, & Bendel, 1976) have made a start in this direction. They found that the MMPI could discriminate with reasonable probability between abusing and

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normal parents. Briefly, abusing parents were found in this research to be characterized by significantly higher scores on two of the standard scales (PD and MA) when compared to parents in the control group. These findings, while certainly of considerable value, have two important practical limitations. First, they cannot help us to determine which child in a family is the victim of abuse. Second, they obviously cannot be utilized in the many situations in which parents refuse or are not available for testing. It would be helpful, then, if we possessed some means of assessment that addressed these limitations.

This brings us to the purpose of the present research, which is to ascertain whether the House-Tree-Person (H-T-P) test may be used as a means to identify abused children. If it can be shown that certain objective indicators commonly investigated in the H-T-P protocols of Ss can discriminate between abused and nonabused children, these indicators then may serve as probabilistic cues in the establishment of child abuse.

A number of considerations initially suggested that the H-T-P might be a particularly valuable instrument for the detection of abuse. The first of these was the clinical observation by the first author of this research of several systematic differences in the H-T-P protocols of abused and nonabused children. The second set of considerations was based on a careful determination of what characteristics a good detection device for abuse ought to possess. Because the abused child is not likely to report openly his mistreatment, a disguised, unobtrusive measure seemed indicated. Because available evidence tells us that the abused child typically is young and unsophisticated, a test that made minimal intellectual demands seemed advisable. Finally, because the abused child may repress or suppress his or her abuse from consciousness, a test that did not rely on conscious report seemed indicated. The H-T-P test, particularly when it is utilized, not as a projective device, but in a fashion that simply establishes the empirical correlations between cues and a criterion, seemed particularly suitable from all of these standpoints.

**Method**

**Subjects**

One hundred and nine children between the ages of 5 and 12 served as Ss in this research. Each of these children was assigned to one of three experimental conditions. (1) The Abused-Clinical group consisted of 32 children in psychological treatment who were judged with a high degree of certitude by their therapists to have been abused physically. (2) The Nonabused-Clinical group consisted of 32 children in treatment who were judged with a high degree of certitude by their therapists not to have been physically abused. No child was included in this research when there was any reasonable doubt in the minds of the therapists as to their abused vs. nonabused status. (3) The Normal group consisted of 45 children from a local elementary school who were judged by their teachers to be exceptionally well adjusted and to be from homes where physical abuse seemed highly unlikely.

**Procedures**

Initially, with the permission of both school officials and parents, House-Tree-Person drawings were obtained from the Normal sample of 45 elementary school children. All drawings were identified only with a 5-digit code number, and a master sheet was compiled in which each code number was matched with corresponding demographic information for that particular child. This information included the child's age, sex, race, socioeconomic status, and experimental condition in this research.

Subsequent to obtaining these data, an E contacted numerous mental health center directors and briefly explained this study and its purposes. He then requested to see, under conditions that would guarantee the anonymity of each child, all H-T-P protocols that the director's clinic might have on file. For each director who consented to participate in this research, then, the following experimental
procedures were utilized. While still on the phone, the E instructed the clinic director to have selected from his or her files only those profiles for which the primary therapist could attest with certainty that the child in question was, or was not, physically abused. He further instructed the director to remove all identifying information from these protocols prior to their being seen by the researchers.

An E then visited each clinic accompanied by two trained H-T-P raters (graduate students in clinical or counseling psychology who had completed their psychodiagnostic courses and had been given further training in H-T-P scoring for this research). He took with him all of the Normal group protocols previously obtained. At the clinic, the E (but not the raters) sat down with a clinic representative, placed a 5-digit code number at the top of each protocol provided by the center, and recorded this number and the corresponding demographic information on the separate master list. The E then mixed a sample of the Normal group protocols with those obtained from the center.

Finally, this group of protocols, which contained drawings from children in all three experimental conditions, were given to the trained raters, who independently rated each of them for the presence or absence of 15 items. An item was considered present or absent only when both judges were in agreement. The 15 items employed were those that emerged as most discriminating from an earlier pilot study in which the H-T-P protocols of 20 Abused-Clinical Ss, 20 Nonabused-Clinical Ss, and 20 Normal Ss were examined for the presence or absence of 100 items (Blain, 1980).

**RESULTS**

Frequencies for each of the 15 experimental items were compared across groups using chi square tests. In addition, because it was not possible to compute a chi square score for several items due to low expected frequencies, one-way analyses of variance also were performed. The 15 items used, the actual frequencies with which they occurred across groups, and their respective chi square and $F$ values are presented in Table 1.

The results of both analyses indicated that 5 H-T-P items occurred significantly more often in the Abused-Clinical group than in the other two groups. These items, which achieved a level of significance of .05 or better, are: Item 2, smoke present from the chimney of the house; item 5, the absence of windows from the ground floor of the house; item 9, noticeable differences in the size of the legs or arms of the person; item 14, the absence of feet on the person; and item 15, disproportion in the size of the head of the person (specifically, the head is 25% or more of the total size of the figure). In addition to these 5 items, the results of the ANOVA indicated a sixth item, item 12 (the body of the person is comprised of geometric figures), occurred significantly more often in the Abused-Clinical group than in the other two groups. However, when pair-wise comparisons were performed (i.e., Abused vs. Nonabused-Clinical, Abused vs. Normal, and Nonabused-Clinical vs. Normal groups) for each of the 15 items using a chi square test, only 1 item (item 2) was presented significantly more often by the Abused-Clinical group than by the Nonabused-Clinical group. When the Abused-Clinical and Normal groups were compared in this regard, the Abused-Clinical group presented all 5 of the items designated above significantly more often than the Normal group. In fact, a level of significance of .01 or better, was achieved for 3 of the 5 items (cf. Table 2). This evidence indicates that discrimination, when these items are used individually, is better between Abused-Clinical and Normal Ss than it is between Abused and Nonabused-Clinical Ss.

Analysis of variance techniques have been found to be appropriate when using dichotomous variables if certain criteria have been met (Lunney, 1970). Specifically, (a) the proportion of responses in the smaller response category is equal to or greater than .2 and there are at least 20 degrees of freedom for error; and (b) the proportion of responses in the smaller response category is less than .2 and there are at least 40 degrees of freedom for error.
**TABLE 1**  
**DIFFERENCES IN FREQUENCY OF ITEMS THAT OCCUR ON H-T-P ACROSS GROUPS**

<table>
<thead>
<tr>
<th>Item</th>
<th>Frequency of occurrence</th>
<th>Abused-clinical</th>
<th>Nonabused-clinical</th>
<th>Normal</th>
<th>Chi square score</th>
<th>F score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Presence of person(s) (House)</td>
<td>8 (.25)</td>
<td>4 (.12)</td>
<td>0 (.00)</td>
<td>—</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>2. Smoke present from chimney (House)</td>
<td>16 (.50)</td>
<td>7 (.22)</td>
<td>10 (.22)</td>
<td>8.09**</td>
<td>4.40*</td>
<td></td>
</tr>
<tr>
<td>3. Door is above baseline with no steps leading to it (House)</td>
<td>5 (.16)</td>
<td>4 (.12)</td>
<td>3 (.07)</td>
<td>—</td>
<td>1.22</td>
<td></td>
</tr>
<tr>
<td>4. Presence of clouds (House)</td>
<td>2 (.06)</td>
<td>0 (.00)</td>
<td>8 (.18)</td>
<td>—</td>
<td>2.27</td>
<td></td>
</tr>
<tr>
<td>5. Absence of windows from ground floor (House)</td>
<td>20 (.63)</td>
<td>19 (.59)</td>
<td>9 (.20)</td>
<td>17.97***</td>
<td>10.57**</td>
<td></td>
</tr>
<tr>
<td>6. House is transparent (House)</td>
<td>1 (.03)</td>
<td>0 (.00)</td>
<td>0 (.00)</td>
<td>—</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>7. Ladder is leaning on trunk of tree (Tree)</td>
<td>0 (.00)</td>
<td>0 (.00)</td>
<td>0 (.00)</td>
<td>—</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>8. Tree has fruit on its branches (Tree)</td>
<td>5 (.16)</td>
<td>3 (.09)</td>
<td>5 (.11)</td>
<td>—</td>
<td>1.38</td>
<td></td>
</tr>
<tr>
<td>9. Size of limbs differ noticeably (Person)</td>
<td>11 (.34)</td>
<td>7 (.22)</td>
<td>4 (.09)</td>
<td>7.62*</td>
<td>4.10*</td>
<td></td>
</tr>
<tr>
<td>10. Eye is a circle with no pupil present (Person)</td>
<td>9 (.28)</td>
<td>8 (.25)</td>
<td>8 (.18)</td>
<td>1.24</td>
<td>.60</td>
<td></td>
</tr>
<tr>
<td>11. Paper is used as a base for person (Person)</td>
<td>4 (.12)</td>
<td>5 (.16)</td>
<td>10 (.22)</td>
<td>1.34</td>
<td>.63</td>
<td></td>
</tr>
<tr>
<td>12. Figure is comprised of geometric figures (Person)</td>
<td>7 (.22)</td>
<td>1 (.03)</td>
<td>1 (.02)</td>
<td>—</td>
<td>5.95**</td>
<td></td>
</tr>
<tr>
<td>13. Multiple persons drawn (Person)</td>
<td>4 (.12)</td>
<td>2 (.06)</td>
<td>3 (.07)</td>
<td>—</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>14. Absence of feet (Person)</td>
<td>17 (.53)</td>
<td>12 (.38)</td>
<td>4 (.09)</td>
<td>13.44**</td>
<td>10.83**</td>
<td></td>
</tr>
<tr>
<td>15. Head is over (3/4) the total size of figure (Person)</td>
<td>16 (.50)</td>
<td>12 (.38)</td>
<td>8 (.18)</td>
<td>9.19*</td>
<td>4.83**</td>
<td></td>
</tr>
</tbody>
</table>

* \(N = 32\).  
** \(N = 32\).  
*** \(N = 45\).  
**p < .05 level.  
***p < .01 level.  
****p < .001 level.

Based on the chi square and ANOVA results, a 6-item test was constructed to determine whether multiple items might enhance discrimination between the three experimental conditions and, in particular, the two clinical groups. The 6-item test comprised those items (2, 5, 9, 12, 14 and 15) shown above to occur significantly more often in the Abused-Clinical group. An ANOVA was conducted on the group totals for this 6-item test. When the three experimental groups were compared with respect to these total scores, an \(F\) value of 17.58 was obtained, which is significant at the .01 level for 2 and 100 degrees of freedom.

Once again pair-wise comparisons were performed, this time using Scheffé's test, to determine whether Abused-Clinical \(S\)s could be discriminated from each of the other two groups of \(S\)s. The mean score for the Abused-Clinical group on the 6-item test was 2.72; that for the Nonabused-Clinical group was 1.81, while
that for the Normal group was .80. Results of the Scheffe analysis indicated that the Abused-Clinical group’s mean score differed significantly from that of the other two groups ($F = 9.88, p < .01; F = 51.2, p < .001$) and that the other two groups differed significantly from each other in this respect ($F = 14.17, p < .001$). It appears, then, that higher scores on the 6-item test are associated with abuse, while lower scores are associated with good adjustment or with disturbance not accompanied by child abuse.

The distribution of total scores on the 6-item test, within each of the three groups, is given in Table 3. Consistent with the above findings, it indicates that high scores on the 6-item test tend to be associated with child abuse, while low scores tend to be associated with nonabuse and normalcy. As illustration of these trends, only 1 (3%) Abused-Clinical $S$ obtained a score of zero on the test, while 6 (19%) of the Nonabused-Clinical $S$s and 22 (44%) of the Normal $S$s had a score of zero on this test. Conversely, only 2 (4%) Normal $S$s scored 3 or higher on this test, while 11 (34%) Nonabused-Clinical $S$s and 21 (66%) Abused-Clinical $S$s had scores of 3 or more on the test.

### Table 3

<table>
<thead>
<tr>
<th>Group</th>
<th>Total score on 6-item test</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abused ($N = 32$)</td>
<td></td>
<td>.03</td>
<td>.22</td>
<td>.09</td>
<td>.38</td>
<td>.25</td>
<td>.03</td>
<td>.00</td>
</tr>
<tr>
<td>Nonabused ($N = 32$)</td>
<td></td>
<td>.19</td>
<td>.28</td>
<td>.19</td>
<td>.25</td>
<td>.06</td>
<td>.03</td>
<td>.00</td>
</tr>
<tr>
<td>Normal ($N = 45$)</td>
<td></td>
<td>.44</td>
<td>.36</td>
<td>.16</td>
<td>.04</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
</tbody>
</table>
DISCUSSION

The present study attempted to ascertain whether the House-Tree-Person test can be used as a means to identify physically abused children. The results of this research indicate (1) that items taken individually discriminate strongly between abused and normal children, but not between abused and nonabused but disturbed children; and (2) that items taken collectively, specifically the 6-item test, discriminate with reasonable probability between abused and nonabused but disturbed children.

Based on these results, the 6-item test appears to be the most practical tool for the identification of abused children that has emerged from this research. If our sample is representative, a score of 3 or more on this test (i.e., 3 or more of the 6 items present) suggests that it is almost twice as likely that the child who has achieved this score has been abused physically as that he or she is emotionally disturbed but not abused, and 18 times more likely than that he or she is well-adjusted. If we move our criterion to a score of 4 or more, it then becomes three times more likely that this child has been abused than that he or she is disturbed but not abused, and the probability that he or she is well-adjusted falls to around zero. Thus, the presence of high scores on the 6-item test provides substantial predictive value. The presence of low scores, i.e., of scores of 3 or less on the 6-item test, yields the following picture. For such scores, the probability that a child has been abused is only one-half the probability that he or she is disturbed but not abused, and only one-third the probability that this child is well-adjusted.

In conclusion, we believe that our research has introduced a set of cues that, taken collectively, may serve as probabilistic indicators of physical child abuse. We also believe that these findings should be the subject of further research, preferably on a very large population of Ss. Certainly, at this stage of the research, the child care professional who utilizes the 6-item test should regard his or her findings as tentative hypotheses, not as verified conclusions. We further suggest, to enhance predictive value, that this test be used in conjunction with other indicators of abuse, such as medical findings, social histories, and parental MMPI profiles (Paulson et al., 1974, 1976).

REFERENCES


Caruso, P. A. Pelvic inflammatory disease: Rare sequela of battered-child syndrome. New York State Journal of Medicine, 1975, 75, 2405-2406.


DIFFERENTIATING VIOLENT AND NONVIOLENT PRISON INMATES BY USE OF SELECTED MMPI SCALES

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Used multivariate procedures to determine whether prisoners who committed violent acts while in prison could be differentiated from those who did not. Ss were 141 adult male inmates in maximum security prisons. Multiple variable profile analysis that employed 22 MMPI scales and four demographic items significantly differentiated between violent and nonviolent inmates. Discriminant analysis that used all 26 variables yielded a significant root that accounted for 34.9% of the variance between violent and nonviolent inmates. The MMPI scales that contributed most to prediction of group membership were F, PA, PT, and Sc, all of which had discriminant load values above .40. Finally, a discriminant function prediction equation was derived to predict the criterion variable (violent or nonviolent behavior). Applying this equation without knowledge of the S’s actual group membership correctly classified 72.9% of the violent and 80.6% of the nonviolent inmates.

Highly publicized riots in American prisons and the difficulty in maintaining adequate surveillance under conditions of increasing overcrowdedness have made the identification of individuals likely to commit violence in prison a high administrative and social priority.

The ethical and methodological difficulties in predicting violent behavior have been examined by a number of investigators (e.g., Ennis & Litwack, 1974; Monahan, in press; Shah, 1978; Stone, 1975). Despite inherent difficulties in predicting violent acts by means of personality instruments, a number of investigators have attempted to relate scores on MMPI scales to aggression and antisocial behavior. Scales Pn and MA, associated with antisocial and impulsive behavior in general, commonly are elevated in prison populations, but seldom discriminate among groups of offenders (Dahlstrom, Welsh, & Dahlstrom, 1975; Gilberstadt & Duker, 1965; Gough, McKee, & Yandell, Note 1). Other scales that have been reported to be higher in violent individuals include scales Pa (Panton, 1959, 1962b;