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AN INVESTIGATION OF THE TREE-TRAUMA HYPOTHESIS

A Thesis

by

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AN INVESTIGATION OF THE TREE-TRAUMA HYPOTHESIS

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by

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ABSTRACT

AN INVESTIGATION OF THE TREE-TRAUMA

HYPOTHESIS (JANUARY 1982)

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A study was designed to evaluate the Tree-Trauma hypothesis by comparing a "trauma" ( $n = 16$ ) versus non-"trauma" ( $n = 16$ ) group of college students. The "trauma" group consisted of subjects who evidenced the presence of a single knothole on their Tree drawing. The non-"trauma" or control group drew neither knot-holes nor any other pathological indicator. The subjects in both groups were administered a descriptive questionnaire, an abbreviated Post-Drawing-Interrogation form, and the Group Form Minnesota Multiphasic Personality Inventory. The results supported the hypothesis of the groups not being significantly different on the personality measure and the PDI form. Mild support for the Tree-Trauma hypothesis was found on several of the descriptive questionnaire items. It

was recommended that the Tree-Trauma hypothesis be utilized with caution in the evaluation of subjects who evidence a single knothole on their Tree drawing.

## ACKNOWLEDGEMENTS

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the assistance and support of the

Thesis Committee Members:

Dr. Richard L. Levin

Dr. Susan F. Moss

Dr. George R. Wesley

## DEDICATION

This thesis is dedicated to my family,  
and to all those who have helped  
turn my goals into realities.

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## AN INVESTIGATION OF THE TREE-TRAUMA HYPOTHESIS

Projective testing can be defined as the act of deducing from rather ambiguous stimuli a variety of psychological and/or behavioral attributes that are generally not readily available without indepth and time-consuming investigation. Anastasi (1976) stated, "It is a fundamental assumption of all projective techniques that the individual's responses to the ambiguous stimuli presented to him reflect significant and relatively enduring personality attributes" (p. 584). The process of formalizing both the projective test procedures and test data into normative and standardized research has been a guiding baseline for experimentation since the early 1900's. The application of experimental methodologies to projective tests dealing with drawing tasks has proven to have been a much needed approach to validating the multitude of projective hypotheses that have arisen from clinical experience. Many of the works of John Buck (1948, 1966) and Emanuel Hammer (1953, 1954, 1958), in validating and expanding many aspects of the House-Tree-Person drawing test, have been foremost in

providing experimental evidence for the substantiation of projective assumption.

The prognostic capabilities of the House-Tree-Person technique (H-T-P) developed by Buck (1948) depend upon the test's ability to serve "as a canvas upon which the subject etches aspects of his inner world, his personality strengths and weaknesses including the degree to which he can mobilize his inner resources to handle psychodynamic conflict" (Hammer, 1953, p. 371). Suinn and Oskamp (1969) stated that drawing tests have proven useful in differentiating maladjusted subjects from adjusted ones. They further suggested that drawing tests have shown a limited usefulness in individual prediction and that their "validity is highly tenuous" (p. 129). This assertion was based upon a review of the various tenets of drawing tests and the resulting confusing array of conclusions. Hammer (1955) aptly states that H-T-P analysis "still remains more the intuitive tool of the artisan than the controlled instrument of the scientist" (p. 7). The consensus of H-T-P reviews appeared to be with the relative lack of validation studies (Anderson & Anderson, 1951; Hammer, 1955; Suinn & Oskamp, 1969). The purpose of this thesis was to study a particularly observable and testable aspect of the H-T-P technique; namely, that of particular "defects" in a subject's Tree drawing that

have been hypothesized as relating to subjectively-felt traumatic experiences within the life of the individual. The Tree-Trauma hypothesis was stated by Buck (1948) in his original monograph as follows:

It has been found, for example, that scars on the Tree's trunk, broken or dead branches, almost invariably represent 'felt scars' left by psychic traumata in the subject's past, and the time of occurrence of the traumatic episode or episodes may be gauged roughly at times by assuming the trunk's base (that portion of the trunk nearest the ground) represents infancy; the top of the tree, the subject's present life age; and the space in between, the intervening years. To illustrate: if the subject was actually thirty years of age and there was a scar on the trunk approximately one-third of the distance from the base of the trunk to the Tree's top, a traumatic episode might be presumed to have occurred in the life age nine to eleven area. The examiner might ask, 'What very unusual thing happened to you when you were about ten?' It is postulated that only those events the subject himself regards as 'scarring' will be symbolized, not necessarily events that to the objective observer might seem likely to leave permanent scars (p. 340).

The importance of Buck's hypothesis is evident, if supported, in terms of uncovering material which may be useful in a therapeutic situation as well as in explicating personality dynamics.

Before the specifically related studies can be discussed, several clinical and experimental assumptions regarding Tree drawings need presentation.

Hammer (1953, p. 371) stated that the Tree "appears to tap basic, more enduring and deeper intrapsychic

feelings and self-attitudes" than the House or Person drawings. Person drawings were commonly assumed to assess interpersonal feelings and attitudes, whereas the House drawing was more characteristic of familial relations in general. Fukada (1969) reported that intelligence or increasing mental age affects Tree drawings only up to the age of seven; whereas, Person drawings are affected up to the age of approximately fifteen (Goodenough, 1926; Harris, 1963). It was generally thought that the "neutrality" of the Tree and the apparent lack of major biasing factors related to its drawing promoted a free expression or projection of unconscious and conscious feelings as compared to the House and Person drawings. In a similar line of thought, Hammer (1953) stated that "as a rule only deep psychoanalytic therapy, or highly significant alterations in the life situation will produce any but minor changes in the Tree" (p. 372). Bolander (1977) had observed clinically that therapy, of a fruitful nature, would gradually alter the position of scars on Trees in the manner of resolution. It was because of its presumed ability to more accurately portray the feelings, attitudes, and radical improvements within the "real" self that the Tree drawing was considered a better prognostic indicator of major changes within the self than the House or Person drawings (Buck, 1948; Hammer,

1953; Jolles, 1971). It was because of its more significant position in the H-T-P technique that Hammer (1953) has reported that an unhealthy tree, one that contains deteriorative and unusual signs such as scars and broken branches, was indicative of "conveying an impression of deep psychopathology" (p. 372).

## REVIEW OF THE RELATED LITERATURE

The first published empirical study of the "Tree and Trauma" hypothesis was by Levine and Galanter (1953). They had two basic assumptions: 1) Buck's (1948) concept of tree-trauma was derived from "post hoc" interviews that included the suggestion of the hypothesized trauma age to the subject after which the individual responded. Levine and Galanter asserted that this procedure constituted a bias in method; 2) No criteria for a "trauma" had been specified by Buck above the implications derived from his hypothesis.

Levine and Galanter selected 27 hospitalized paraplegics as subjects on the assumption that the severity of the "traumatic" occurrence, the circumstances particular to their injuries, and the resulting re-orientation to life would effectively constitute a "traumatic episode." All the traumatic indicators specified by Buck (1948) were objectively scored for each of the obtained Tree drawings. Only seven of the 27 drawings contained unequivocal traumatic indicators. None of these seven cases obtained age scores on their drawings of damaged trees that were within the two year range suggested by Buck when they were compared to the

actual age of the traumatic incident. Levine and Galanter computed a rank-order correlation between the derived and actual trauma-age scores in order to test for any significant relationship. They obtained an  $r$  of .73 between the estimated age-score and the actual age of trauma occurrence ( $p < .05$ ). Levine and Galanter interpreted this correlation as partial confirmation of the hypothesis on a broader time scale than that specified by Buck.

Lyons (1955) attempted to further study the Tree-Trauma hypothesis by conducting a rather ingenious multifaceted experiment. Lyons reported that since the number of traumatic indicators drawn by subjects was usually few, it would be interesting to persuade subjects to draw a scar on their Tree drawings. His own clinical experience had found the spontaneous incidence of drawn scars as approximately 5% in adults and 10% in children.

His first experiment consisted of having subjects place an "X" on their drawn trees where lightning would have struck in the past. Lyons' subjects were literally the last 50 persons with whom he had professional relations at the time of the study. They varied according to age, sex, and clinical diagnosis (normal to psychotic). After drawing their trees, the subjects were further tested and interviewed for an approximate

hour interval. Lyons completed his experiment with a 20 item questionnaire which contained the following question--"What is the worst single thing that ever happened to you in your life? When did it happen?". It was Lyons' purpose to separate the effects of placing a scar on the Tree from responding about a possibly traumatic incident. Lyons further allowed for the subjective interpretation of the trauma. He obtained a correlation of .54 (significant at the .01 confidence level) for the comparison between the estimated and actual age/trauma score. Lyons also asked the last 21 of his subjects to answer the question--"What is the best single thing that ever happened to you in your whole life? When did it happen?". No significant relationship was obtained between this best-time age score, the score derived from the position of the induced scar, or the actual traumatic incident age.

Two further experiments were devised by Lyons to further substantiate the effect on non-chance operations. In the first of these experiments, Lyons had 50 co-workers draw a horizontal line across a blank paper which had a mimeographed seven-inch vertical line. Comparisons with the scar height/age ratio obtained in the prior experiment showed no significant relationship. The second experiment consisted of 50 different co-workers who were given a sheet of paper on



which a seven-inch tree had been mimeographed. They were asked to "Please draw an 'X' on this Tree". Corresponding scar height ratios were computed and compared with those obtained in the original experiment. There were no significant relations from this comparison. The results of the last two experiments prompted Lyons to report that the placing of induced scars in the original experiment was "not simply the result of the random factors presumable operative in a neutral task but is the product as well of the individual significance assigned to the Tree and lightning symbol by each subject" (Lyons, 1955, p. 270).

Bolin, Schneps, and Thorne (1956) attempted to replicate Lyons' experiment with essentially the same admixture of normal and abnormal groups. They reported that "No significant correlation was found between the relative height of the 'lightning scar' on the Tree and the relative age of the 'worst event'. These two groups 'scar' placement was not significantly different from 39 psychotic subjects' random placement of X-marks on prepared (duplicated) Tree drawings" (Bowlin et al., 1956, p. 397).

Bolander (1977) stated that Bolin's et al., (1956) conclusion cannot be accepted as a direct rebuttal of Lyons' work (1955) because the replicated procedures differed in one major aspect. Lyons required an

approximate one hour break between the "scar" drawing and the questioning concerning the trauma. The reason for this delay was to allow for "a natural and fundamental effect on the unconscious processes of the testees, permitting dissociation of the request to induce a lightning scar from the latter question about conscious recall of the 'worst event'" (Bolander, 1977, p. 327). Lyons further had the pertinent question included into a questionnaire to subtly hide its purpose.

The most comprehensive critique of trauma marks and time determination has been done by Bolander (1977). Besides her own work, Bolander has reviewed the previously reported researchers as well as the relatively unknown work of Koch (1957) and a Hungarian named Father Abel. The major difference between the various researchers has been in the computational formulas for the determination of the time of the trauma as measured by the height of the traumatic indicator in relation to the Tree. (Appendices A and B contain the computational formulas used by the reported researchers as well as a graphic display of their usage.) Bolander has asserted that only Lyons, Koch, a group of Dutch researchers, and her own scoring system provide the correct age determination. The non-inclusion of the root system in the scoring formula render Buck's (1948) and Levine and Galanter's (1953) formulas useless in predictive

ability. It was interesting to note that Bolander provides no experimental or published information about her own "trauma mark" research besides that derived from clinical experience.

There appeared to be much conflicting evidence related to the proportion of spontaneously drawn scars from the various subject populations. Levine and Galanter (1953) found that only one-fourth of their paraplegic subjects spontaneously drew scars on their Trees. They were then led to hypothesize that "either the hypothesis has dubious validity, or that other unknown personality factors contribute to the appearance or nonappearance of such indicators on Tree drawings" (p. 74). Lyons (1955) found that only two out of the 50 subjects in his original tree-scar experiment spontaneously drew scars. Bolin et al., (1956) reported that very few of their subjects spontaneously drew scars. Bolander (1977) stated that the reported incidences of scars were surprisingly low in comparison to her own sample, but she neglected to include the percentages. Marzolf and Kirchner (1970) reported in their normative study of H-T-P characteristics in college students that approximately 35 percent of their sample of 850 subjects drew spontaneous scars or knots (81% interrater agreement). It would appear that if the incidence of spontaneous scars or defects is

relatively low in the general population, then Hammer's implications concerning "psychopathology" and trauma marks would be reasonably warranted on the basis of the marks being an identifying trademark. This would be especially so if a pathological personality structure could be shown to exist specifically for these trademark drawing individuals.

## STATEMENT OF THE PROBLEM

The majority of the pertinent research has dealt with the hypothesis of the projection of body space onto the Tree drawing rather than with demographic, personality, or extraneous factors in the drawings. Much of this orientation was due to the early time frame of the studies and the difficulty in defining a "trauma." Levine and Galanter (1953) neglected to follow Buck's (1948) statement that "only those events the subject himself regards as 'scarring' will be symbolized" (p. 340), and subsequently defined a trauma in terms of objective paralytic injury. Lyons (1955) and Bolin et al., (1956) had subjects draw scarring marks on Tree drawings due to the assumed lack of spontaneously drawn defects. It was felt by this researcher that this constituted a corruption of the process of projection and in essence separated the "act" of drawing from the "process" of drawing. It would appear that the process of drawing a spontaneous scarring mark is different from that of inducing a defect in the Tree drawing.

Factors related to the drawing of trauma marks were not especially delineated by any of the major

researchers involved in the stated studies. Bolander (1977) did state various hypotheses derived from her clinical work that related to variations in drawn defects that imply different etiologies, manifestations, etc., but it must be noted that her work appeared to be clinically, rather than experimentally, derived. It was the purpose of this investigation to add normative information, descriptive data, and further explore the validity of the Tree-Trauma hypothesis. The present study was designed to investigate the personality characteristics of those individuals who drew trauma indicators on their Tree drawings. This study did obtain subjects from an undergraduate college population due to their accessibility. The time determination formula developed by Bolander (1977) was used for the determination of the "traumatic age," with a + or - one year allowance as specified by Buck (1948). The experiment relied upon the subject's ability to define what was or was not "traumatic" in his/her life, i.e., what would be socially admissible for the subject in view of the data collection scheme.

### Variables

Two sets of variables were defined in this study. The Tree drawing was defined as the independent variable in this experiment. More specifically, this denoted the inclusion or non-inclusion of a trauma

indicator on the Tree drawing. There were four traumatic indicators used in this study: scars, knotholes, broken branches, and broken trunks. These were assessed by use of the data supplied by Buck (1948) and Bolander (1977). The dependent variables consisted of the following: 1) results of the descriptive questionnaire and Post-Drawing-Interrogation questionnaire (adapted from Buck, 1948); 2) scores on the Minnesota Multiphasic Personality Inventory (Hathaway and McKinley, 1943).

#### Hypotheses

- A. Those subjects who drew trauma indicators on their Tree drawings would not significantly differ from subjects who evidenced no trauma indicators on the basis of scores obtained from the assessed Minnesota Multiphasic Personality Inventory scores.
- B. There would be no significant differences between the experimental and control groups on rating the "traumatic" experience for its effect on their current life.
- C. There would be no significant differences between the experimental and control groups on rating the "traumatic" experience as sudden or gradual in onset.

- D. There would be no significant differences between the experimental and control groups on rating the drawn Tree as alive, dead, or part-dead.

### Method

Subjects. Participants in this experiment were obtained from undergraduate level psychology classes during the 1981 Spring semester at Appalachian State University. Out of an initial pool of 79 subjects tested, (31 males, 48 females), 16 subjects (8 males, 8 females) comprised the Trauma group on the basis of having drawn one of the assessed trauma indicators: scar, knothole, broken branch, broken trunk. Sixteen subjects (6 males, 10 females) comprised the Control group, i.e., those subjects who drew none of the prior mentioned "trauma" indicators. The mean age for the Trauma group was 21.2 ( $SD = 8.0$ ). The mean age for the Control group was 21.6 ( $SD = 5.8$ ). All subjects who comprised either of the two groups were required to sign an informed consent form (see Appendix E).

Measures. All subjects from the initial pool completed the Tree Drawing test and the abbreviated Post-Drawing-Interrogation form. Those subjects who served in either of the two groups were required to fill out the Minnesota Multiphasic Personality Inventory, a descriptive questionnaire, and an informed consent form.



Tree Drawing Test. The Tree Drawing test was used as the screening device for the determination of the Trauma and Control groups. The test required that the subject draw the "tree of your own choice". Subjects were furnished with a clean white sheet of paper (8-1/2 by 11 inches) and a #2 lead pencil.

Post-Drawing-Interrogation Form (PDI). An abbreviated form of Buck's (1966) 60 item PDI was used to more accurately and descriptively classify the Tree drawings (see Appendix C).

Minnesota Multiphasic Personality Inventory (MMPI). All the experimental and control subjects were required to fill out the Group Form of the MMPI (Hathaway and McKinley, 1943).

Questionnaire. The following information was obtained by the use of a descriptive questionnaire: age, sex, description or categorization of traumatic event, severity of the trauma at the present, and type of onset (see Appendix D).

Informed Consent Form. All experimental and control subjects were required to sign an informed consent form before participation in the experiment per se (see Appendix E).

Procedure. All subjects were initially tested with the Tree Drawing test and the abbreviated PDI in their regular classrooms. Each subject was presented

with a clean sheet of white paper (8-1/2 by 11 inches) and a #2 lead pencil. The subjects were told the following: "You have been given a piece of paper and a pencil. Please place your social security number or other identifying mark on one side of the paper. Now, on the other side, please draw the tree of your own choice." No time limit was imposed, but subjects were urged to complete their drawings if not finished after a five minute interval. After the drawings had been completed, the subjects were instructed to fill out the abbreviated PDI form. The subjects were lastly told that a random selection of them would be chosen for further testing and that class credit would be given for future participation by them.

The Tree drawings were observed and rated independently by the researcher and an associate for the presence of one or more trauma indicators. Buck's (1948) and Bolander's (1977) texts were used by the raters to more carefully note the presence or absence of the aforementioned trauma indicators. The plan of the experiment was for the raters to remove all discrepant drawings from the study. A 100% inter-rater agreement was achieved by the raters. Further analysis indicated that several subjects had mentioned the drawing of broken limbs ( $\underline{n} = 2$  females) in their PDI questionnaire. These subjects were not noted in the initial

rating, but were subsequently dropped from participation in the study. The Control group consisted of subjects who had not drawn any of the assessed trauma indicators. An equivalent sex ratio between the Trauma and Control groups was maintained for the initial notification of the subjects' eligibility for further testing. The subjects were naive about their particular groupings in the experiment and were allowed to choose from one of five testing sessions.

The participants in each testing session were furnished with #2 lead pencils and then given the Group Form of the MMPI. Derived "trauma" age-scores had been obtained from the Tree drawings prior to the testing sessions for each of the Trauma group subjects by using Bolander's (1977) time-determination formula (see Appendix A). This score was placed on the descriptive questionnaires in the manner specified by Buck (1948), i.e., + or - one year. Control subjects were given derived age-scores from same-sex Trauma group subjects. After completing the MMPI, the subjects were asked to fill out the descriptive questionnaire. There was no time limit on any portion of this testing regime.

The MMPIs were hand-scored and assessed for validity by the researcher using the general criteria set forth by Graham (1977, pp. 17-32) and Duckworth (1979, pp. 5-50). Invalid protocols were to be removed from

the study. Scoring procedures indicated that all the protocols were valid as assessed by the researcher.

Design and Statistical Procedures. The overall discrimination of the Trauma group ( $n = 16$ ) and Control group ( $n = 16$ ) was made using a between-groups analysis of variance with the MMPI data. Various other discriminative and descriptive procedures were used to compare the two groups' performances on the descriptive questionnaire and the PDI form.

There were instances in which some descriptive information could not be totally utilized for the groups due to various deficits in the subjects' responding, e.g., vagueness, refusal to reply, etc. In such cases, the appropriate number of subjects and other identifying information is included with the statistical or descriptive statement.

### Results

Sixteen subjects (8 males, 8 females) participated in this experimental study as the Trauma group. Table 1 contains the listings of the experimental and control groups according to sex, type of trauma indicator, and number of trauma indicators. It can be additionally noted that 34% of the initial pool of 79 subjects evidenced the presence of at least one trauma indicator on their tree drawing (22 subjects who drew knotholes,

TABLE I  
 DISTRIBUTION OF GROUPS ACCORDING TO SEX,  
 TYPE OF TRAUMA INDICATOR, AND  
 NUMBER OF TRAUMA INDICATORS

Group	<u>n</u>	Number of Traumatic Indicators*			
		KH	S	BB	BT
Experimental males	8	8	0	0	0
Experimental females	8	8	0	0	0
Experimental total	16	16	0	0	0
Control males	6	-	-	-	-
Control females	10	-	-	-	-
Control total	16	-	-	-	-

\*Key: KH - knothole, S - scar, BB - broken branch,  
 BT - broken trunk

4 who drew scars, 1 who drew broken branches, and none who drew a broken trunk).

Table 2 contains the numbers and percentages of experimental and control groups subjects who responded to how the "traumatic" event they listed on the questionnaire was currently affecting their life (item #6, see Appendix D). Chi square analysis was significant with  $\chi^2 = 4.63$  ( $df = 1$ ,  $p < .05$ ), indicating that the experimental group described their earlier traumas as more greatly affecting their lives than did the control group.

Table 3 contains the numbers and percentages of experimental and control groups subjects who responded to item #7 on the descriptive questionnaire, i.e., rating the perceived onset of the "traumatic" event as sudden or gradual. Chi square analysis was not significant with  $\chi^2 = 2.42$  ( $df = 1$ ,  $p < .05$ ).

Table 4 contains the percentages and categorizations of the "traumatic" event for the experimental and control groups according to the subjects' typical specifications on item #5 of the descriptive questionnaire. Analysis of the subjects' ability to respond or not respond to having had a "trauma" yielded a significant difference between the experimental and control males with a  $z$  of 2.15 ( $p < .05$ ). This result indicated that the experimental males were more prone to admit and/or

TABLE II  
 QUANTITATIVE RATING OF "TRAUMATIC" EVENT  
 AS CURRENTLY EFFECTING ONE'S LIFE

Group	Rating*							
	1		2		3		4	
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
Experimental males	2	50	1	17	2	33	-	0
Experimental females	-	0	1	17	4	66	1	17
Experimental total	3	25	2	17	6	50	1	8
Control males	-	0	-	0	1	100	-	0
Control females	4	40	5	50	-	0	1	10
Control total	4	36	5	45	1	10	1	10

\*Key: 1 - not at all  
 2 - minimally  
 3 - moderately  
 4 - severely

TABLE III  
 PERCEIVED ONSET OF THE "TRAUMATIC" EVENT

Group	Onset			
	Sudden		Gradual	
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
Experimental subjects	7	64	4	36
Control subjects	3	30	7	60



TABLE IV  
 "TRAUMATIC" EVENT AS TYPIFIED FROM  
 SUBJECTS' RESPONSES\*

Experimental Males	
(n = 8)	
Event	<u>n</u>
Sickness in family	1
Physical illness/self	1
Situational disturbance	2
Accident/family member	1
Parent goes to war/Vietnam	1
No response	2
Experimental Females	
(n = 8)	
Event	<u>n</u>
Situational disturbance	1
Sexual experience	1
Parents' divorce	1
Stealing/guilt	1
Attaining adolescence	1
No response	3

\*Some subjects responded with two responses

TABLE IV (Cont.)

Control Males	
( <u>n</u> = 6)	
Event	<u>n</u>
Operation/self	1
No response	5
Control Females	
( <u>n</u> = 10)	
Event	<u>n</u>
Death of family member	3
Death of animal	1
Parents' divorce	1
Situational disturbance	2
Loss of self-esteem	2
Operation/self	1
Parent goes to war/Vietnam	1
Alcoholism/family	1
No response	1

\*Some subjects responded with two responses

recall a significant "traumatic" experience in their past than the control males.

Table 5 contains the numbers and percentages of experimental and control subjects who rated and described their Tree drawings as alive, dead, or part-dead on item #s 2, 3, and 4 of the PDI form. No significant differences existed between the experimental and control groups with almost all subjects rating the Tree drawings as alive.

Table 6 contains the means and standard deviations for the experimental and control groups on the assessed MMPI scales. No significant differences were noted from the results of the between-groups analysis of variance data which indicated that trauma marks, specifically knotholes, are not directly related to psychopathology as measurable by group differences on the MMPI.

### Discussion

It was the purpose of this study to examine the validity of the Tree-Trauma hypothesis by comparing a "trauma" versus non-"trauma" group on a variety of measures. The study's results related to only those subjects who evidenced a single knothole on their Tree drawing.

The results of this study gave definite questionability to the Tree-Trauma hypothesis and its related

TABLE V  
 SUBJECTS' RATING OF TREE DRAWING AS  
 ALIVE, DEAD, OR PART-DEAD

Group	Category					
	Alive		Dead		Part-Dead	
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
Experimental males	8	100	0	0	0	0
Experimental females	7	87	1	13	0	0
Experimental total	15	93	1	7	0	0
Control males	3	100	0	0	0	0
Control females	4	100	0	0	0	0
Control total	7	100	0	0	0	0

TABLE VI  
 MEANS AND STANDARD DEVIATIONS: MMPI SCORES

Group	Scales												
	L	F	K	1	2	3	4	5	6	7	8	9	0
Experimental Males ( $\bar{n} = 8$ )	$\bar{M}$ : 45	53	54	29	51	51	44	60	56	26	25	59	50
	$\bar{SD}$ : 6.1	8.6	12.2	5.1	6.1	10.4	6.2	8.6	11.6	13.6	10.8	11	12.8
Experimental Females ( $\bar{n} = 8$ )	$\bar{M}$ : 46	53	52	33	54	56	48	44	58	40	37	57	51
	$\bar{SD}$ : 4.7	9.7	6.8	5.3	13.4	7.8	14.4	6.1	12.5	22	18.6	12.6	9.5
Control Males ( $\bar{n} = 6$ )	$\bar{M}$ : 45	57	49	36	49	54	41	58	48	34	35	63	45
	$\bar{SD}$ : 5	7.3	8.6	9.8	11.7	8.7	5	9.7	9.2	17.4	21.7	13	3.4
Control Females ( $\bar{n} = 10$ )	$\bar{M}$ : 45	54	52	37	49	56	48	49	57	35	40	57	50
	$\bar{SD}$ : 10	6.8	11	12	10.4	12.7	9.4	7	7.7	13	15	11	7

TABLE VI (Cont.)

		Scales						
		A	R	Dy	Do	Cn	Es	
Experimental Males ( $\underline{n} = 8$ )	<u>M:</u>	48	47	50	61	54	57	
	<u>SD:</u>	7.7	10.8	8	10.4	6.2	8.6	
Experimental Females ( $\underline{n} = 8$ )	<u>M:</u>	51	43	51	61	57	54	
	<u>SD:</u>	11	6.9	9.7	8.1	9.5	9.1	
Control Males ( $\underline{n} = 6$ )	<u>M:</u>	49	40	48	57	51	51	
	<u>SD:</u>	9	10.3	8.6	11.8	7	5.2	
Control Females ( $\underline{n} = 10$ )	<u>M:</u>	50	46	47	58	52	54	
	<u>SD:</u>	12	12	9	7	13	10	

negative implications for trauma-mark drawers, specifically those who drew knotholes. The non-significant differences found on the MMPI analyses and the noticeable percentage of subjects who drew knotholes (28 percent of the original sample) would indicate that knotholes are not as deteriorative a sign or obscure a finding as originally assumed by most earlier researchers. The results indicated that a psychopathological process is not generally attributable to an individual on the basis of a single knothole on a Tree drawing. Trauma, as indicated by group differences on the personality measure, was not evident for the experimental group as would have been expected from Hammer's (1953) implications.

The results of this study did not suggest that trauma does not exist for the experimental subjects or that trauma cannot take the projected form of a knothole or other "deteriorative" mark. In fact, some mild support was given to the Tree-Trauma hypothesis in the findings that the experimental subjects rated their "traumas" as more greatly affecting their current lives than the controls and also that the experimental males were more prone to admit and/or recall a past traumatic event than the control males. It can also be noted that the very low numbers of subjects drawing scars, broken branches, or broken trunks may indicate that

these trauma indicators are more representative of the Tree-Trauma hypothesis per se than knotholes due to their noted infrequency in this study and the reported literature.

The results of this study supported the proposed "normality" of the knothole-drawing subjects as regards their viewing of themselves and their Tree drawings as essentially healthy and "alive" on the majority of this study's measures. It was recommended that the use of the Tree-Trauma hypothesis and its negative implications be utilized with caution in any type of general-interpretational or single-sign usage, especially with individuals who drew single knotholes.

As was evidenced by the work of other researchers, it was difficult to accurately classify the "trauma and projective" phenomenon in any type of general scheme. Much of the difficulty dealt with the quantifying of variables that by definition lack precise, quick, or knowable qualifications. In this regard, it is recommended that future research place increasing concern on the development of techniques that would allow better comparison between hypothesis and reality. Improvements in this study would include the use of larger sample groups and the research of inter-relating factors such as multiple trauma marks, the value of size and shape differences in marks, etc. Improvements in



this regard would be extensive, but necessary if the clinician is to scientifically validate and improve the art of interpretation. It appeared at the present that Hammer's (1955) comparison of the clinician to the "artisan" is still applicable with regards to the Tree-Trauma phenomenon. Hopefully, time will improve the art into a creative science.

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## REFERENCES

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APPENDIX A

Time Determination Formulas

TIME DETERMINATION FORMULAS\*

Buck (1948):  $\frac{S'h}{T'h} = \frac{Ea}{Pa}$

Levine & Galanter (1953):  $\frac{S'h}{T'h} = Ea$

Lyons (1956):  $\frac{Sh}{Th} = q$  and  $\frac{Ea}{Pa} = q$ , then  $Pa \times q = Ea$

Koch (1957):  $\frac{Th}{Pa} = i$ , then  $\frac{Sh}{i} = Ea$

Dutch workers:  $\frac{Th}{Pa} = \frac{A}{Ea}$  (reported by Bolander, 1977)

Bolander (1977):  $Ea = \frac{Sh \times Pa}{Th}$

Key:

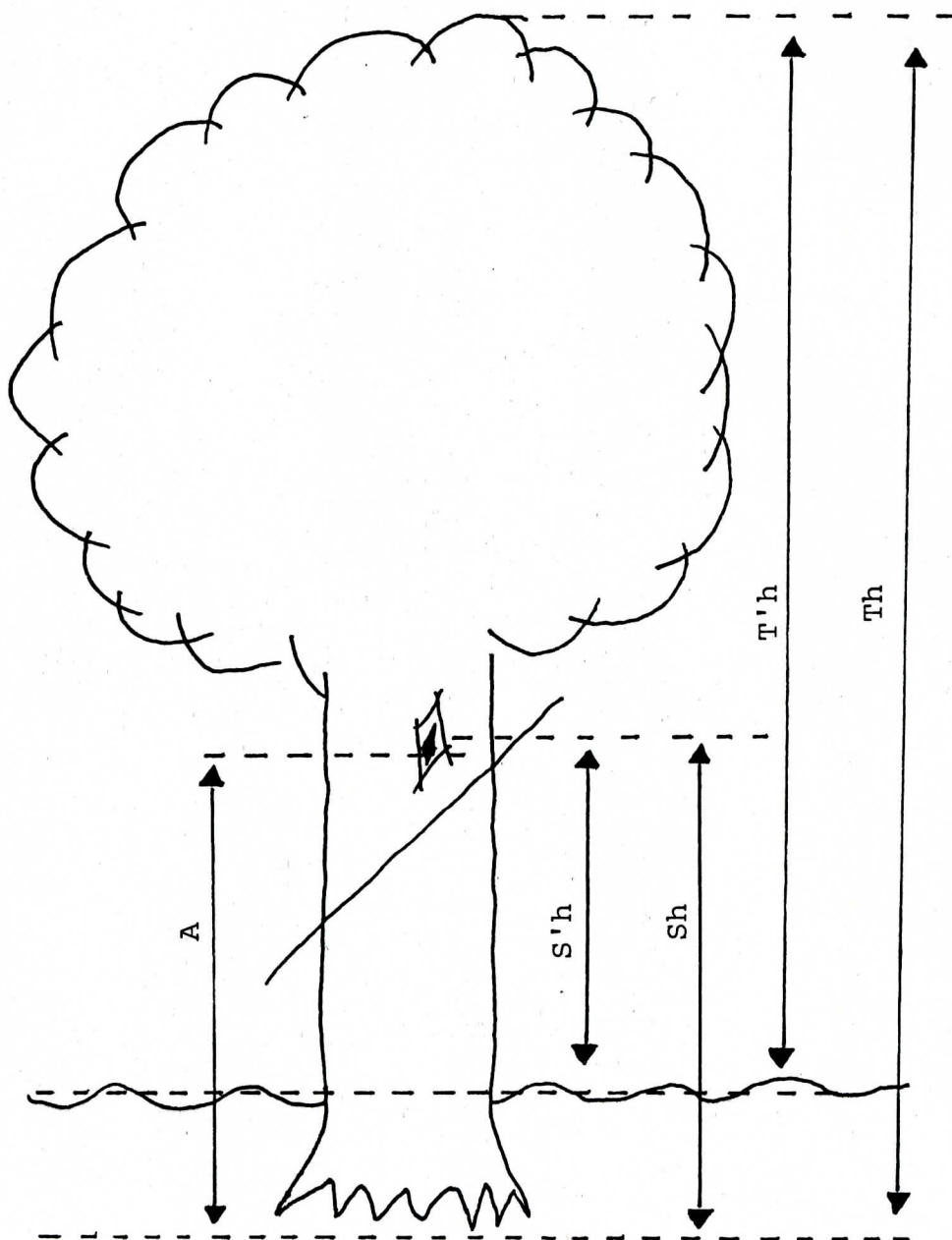
- A - is distance between lowest point on tree and induced cutting line
- i - is Wittgenstein Index
- Ea - is age of subject at time of traumatic experience
- Pa - is present age of subject
- q - is quotient of Lyons
- Sh - is scar height measured from lowest point on tree
- S'h - is scar height measured from trunk base
- Th - is tree height measured between lowest and highest point on tree
- T'h - is tree height measured from trunk base

Measurement of age in years and fractional months; of distance, in millimeters.

\*Source: Bolander, 1977, p. 330.

APPENDIX B  
Graphic Display  
of  
Time Determination Formulas

## GRAPHIC DISPLAY OF TIME DETERMINATION FORMULAS



Measurements in millimeters.



APPENDIX C

Post-Drawing-Interrogation Questionnaire

(Abbreviated)

## POST-DRAWING-INTERROGATION QUESTIONNAIRE

Social Security Number: \_ \_ \_ - \_ \_ - \_ \_ \_ \_ \_

Sex: \_\_\_\_\_

Please answer each question as it relates to your drawing:

Tree

T1. About how old is that tree?

T2. Is that tree alive?

T3. (If you said that the tree is alive)

(a). What is there about the tree that gives you the impression that it's alive?

(b). Is any part of the tree dead?  
Which part?

(c). What do you think caused it to die?

(d). How long has it been dead?

T4. (If you said that the tree is dead)

(a). What do you think caused it to die?

(b). How long has it been dead?

APPENDIX D

Descriptive Questionnaire

## DESCRIPTIVE QUESTIONNAIRE

1. Social Security Number: \_ \_ \_ - \_ \_ - \_ \_ \_ \_ \_
2. Sex: \_\_\_\_\_
3. Present Age: \_\_\_\_\_ (years) \_\_\_\_\_ (months)
4. Birth Order: (please circle)
  - A. Only child
  - B. First born
  - C. Second born
  - D. Third born
  - E. Fourth born or more
5. Please take a moment to think about the following:  
Did any painful or very important event happen to you between the ages of \_\_\_\_\_ to \_\_\_\_\_. If so, please just state a category of event that best describes your experience.
6. How do you now perceive this "experience" as currently effecting your life?
 

1	2	3	4
NOT AT ALL	MINIMALLY	MODERATELY	SEVERELY
7. When the event occurred, was it?
  - (a) Sudden, or
  - (b) Gradual

APPENDIX E

Consent Form

## CONSENT FORM

The signing of this form hereby gives the researcher full permission to use all test data obtained from the subject in a confidential manner. The experiment will be conducted according to the conduct of ethical research standards set forth by the American Psychological Association. A notice indicating a brief summary of the research will be posted in your respective classroom at a later date.

Researcher: Kenneth Howard Yearick

Supervisor: Dr. Richard Levin

\_\_\_\_\_  
Subject

\_\_\_\_\_  
Date

## VITA

Kenneth Howard Yearick was born in Arlington, Virginia on May 6, 1957. He attended elementary school in West Jefferson, North Carolina and was graduated from Beaver Creek High School in June, 1975. He received his Bachelor of Arts degree in Psychology from Wake Forest University in May, 1979. In August, 1979 he entered Appalachian State University and began work on a Master's degree in Clinical Psychology. This degree was awarded in May, 1982.

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