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FINGERPAINTING AS A PSYCHODIAGNOSTIC TOOL
WITH MENTALLY RETARDED EMOTIONALLY
DISTURBED CHILDREN

A Thesis Submitted to the Graduate Division in Partial
Fulfillment of the Requirements for the
Degree of Master of Science

By

Beverly G. Knox

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Pittsburg, Kansas

March, 1961

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ABSTRACT

Fingerprinting indicates potential for consideration as a diagnostic tool in view of its particular plasticity and effectiveness with all ages, cultures and most handicaps. There is, however, confusion in the method of administration, the amount of structure to provide during the painting process, and the observational points significant in providing useful evaluative material. These various methods include: (1) An extensive systematized checklist for observation in a highly structured setting; (2) a more permissive atmosphere with suggested significant characteristics inherent in the fingerprinting task which should be clinically observed; and (3) a more recently developed objective ratings scale for the fingerprinting end product. There is no present indication, however, that such ratings scales used for scoring can also be used for diagnostic purposes, although it has been stated that variation in scoring will suggest a distinction between the psychotic and normal adult.

Studies regarding the use of fingerprinting as a psychodiagnostic tool have been mostly with adult, emotionally disturbed populations. It is difficult to determine a relationship of scoring values which would compose a profile significant in terms of behavioral adjustment. It became

obvious that there was a definite need for review and integration of literature in the field of fingerprinting as a psychodiagnostic tool for purposes of formulating an evaluative sheet and subsequent development of an objective method of scoring. The importance of such a method of measurement is directly related to the ability of allied clinical therapies, such as art therapy and occupational therapy, to report significant material in their diagnostic work.

In reviewing the available literature on fingerprinting, certain assumptions are present: (1) There are specific patterns which exist in the fingerprinting and product, (2) there are specific patterns which exist in the fingerprinting approach, and (3) these specific patterns may relate to such an extent as to be representative of an individual's particular behavioral adjustment. These assumptions for purposes of further research are integrated into a formal statement of theory by this writer. On the basis of this theory, an evaluation sheet and observation sheet is suggested for clinical study. Adaptive measures have been incorporated for the use of fingerprinting with children, necessitating the inclusion of material for the understanding of projective techniques with children and the various stages

of developmental growth in terms of artistic expression, motivation, and motor ability.

In addition to the review of literature, a pilot study for the administration of fingerpainting to a group of children at Parsons State Hospital and Training Center was completed. During the fourteen weeks this pilot study was in operation, observational points in regard to the approach and handling of the medium was recorded. Paintings collected during this period were viewed for basic patterns. This material was incorporated into a formal evaluation sheet for the fingerpainting end product and an observation sheet for use during the painting process. As a primary step in determining the discriminatory value of the evaluation sheet and the ability of other persons to understand the terms used, an inter-judge agreement study was completed.

Information from the inter-judge agreement study suggests that those persons trained in psychology and art therapy or occupational therapy can evaluate a fingerpainting according to the descriptions on the evaluation sheet with a significant degree of reliability.

Further research is essential on the evaluation and observation sheets presented by this writer before they are considered to be a fingerpainting test which can be utilized as an effective diagnostic tool.

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CHAPTER I

Introduction

Background of the problem

Painting has probably been an avenue of communication for centuries. Before the perfection of utensils and tools, man undoubtedly used his hands or fingers for direct manipulation of the media. However, fingerpainting as we know it first came to popular attention after 1931. In February of that year, Ruth Shaw "invented" its use in a school in Rome where she was working with children of various nationalities. She found fingerpainting most effective in overcoming language barriers, and continued to develop the technique, or "new experiment" as she called it.¹ The free and expressive quality of fingerpainting was particularly championed at that time, since educators were advocating the necessity of allowing the child to learn from his own experiences.

Particular advantages were seen in the medium by clinicians, and it was incorporated into therapy. Success was reported with stammerers, anxiety hysterics, pathologic personalities, obsessive compulsives, conversion hysterics,

¹Shaw, Ruth, Fingerpainting. Boston: Little Brown, 1934. p. 3.

schizophrenics, and depressives.² Mosse "advocated fingerpainting as a superior art medium and combined it with free association as an analytic technique."³ In therapy, fingerpainting was found to relieve tension and to elicit spontaneous fantasy indicating particular moods or conflicts of the patient.⁴

Lerner and Murphy in 1941 and Wolff in 1942 were the first to report the use of fingerpainting as a projective technique.⁵ However, the most systematized analysis of fingerpainting for diagnostic purposes has been done by Napoli.⁶ His writings are the most prominently used by any author discussing the fingerpainting technique. Criticisms of his analysis are lack of objectivity,⁷ and his own statement that it has not been adequately "subjected to the rigors of scientific method."⁸

²Fleming, Joan as cited in Bell, J.E. Projective Techniques, A Dynamic Approach to the Study of the Personality. New York: Longmans, Green, 1951. p. 400.

³Mosse, E. as cited in Bell, Op. Cit. p. 400. Mosse, E. Color Therapy. Occun. Ther. Rehabil., 1942, 21 (1), pp. 36-37.

⁴Fleming, J. as cited in Bell. Op. Cit. p. 400.

⁵Bell. Op. Cit. p. 400. ⁶Ibid. ⁷Idem. p. 404.

⁸Napoli in Anderson, H. and Anderson, Gladys. (Eds.) An Introduction to Projective Techniques and other Devices for Understanding the Dynamics of Human Behavior. New York: Prentice-Hall, 1951. p. 413.

Napoli investigated the interpretive aspects of fingerprinting,⁹ and felt that interpretation depends upon observations made by the administrator, physical behavior of the subject, and verbalization "resulting from the administrator's ability to stimulate."¹⁰

A variety of specific points are presented by Napoli¹¹ under the classifications of "observation" and "painting process" to indicate interpretative material which can be derived from the fingerprinting technique. He hypothesizes that observations of posture, manner of approach, parts of the hand used, paper coverage, and neatness are indicative of personality trends. For example, the self-conscious and dependent lean on the table; the embarrassed and timid shift from foot to foot, etc. The overprotected and timid use little paint in contrast to the anal character, the wasteful, and those with poor initiative and no self-reliance who use much paint. Repeated designs may indicate a disguise for guilt and lack of neatness may indicate guilt, insecurity, or resentment of authority.

⁹Napoli, P. Interpretative aspects of fingerprinting. J. Psychol., 1947, 23. pp. 93-132.

¹⁰Ibid. p. 94. ¹¹Idem throughout.

Napoli suggests further that the first placement of paint is indicative of personality tendencies, i.e. extreme side suggests the less developed personality, lacking a central or core force; off center suggests the highest development in "rhythm, repetition and points of interest"; and center suggests the timid or conversely egocentric personality. The use of the extreme sides in painting provides the first clue to the neurotic and psychotic personality. In actual painting the paranoid emphasizes vertical strokes; schizoids, horizontal; fearful and withdrawn, perimeters; and sensitive and intuitive emphasize the diagonals. The elated or paranoid work from the top of the page downward and the depressed work from the bottom of the page to the off-side or off-paper area.

During the painting process, Napoli emphasizes that color, motion, texture, symbolism and verbalization are descriptive of the individual. In the use or choice of color, blue is dominant male color denoting masculinity, aggressiveness, and wholesomeness. The over use of blue indicates brutality and vulgarity. The female using blue dominantly identifies herself as a female complement of the male, and is

described as the "clinging-vine type". Red is a female dominant color suggesting maternal, wholesome capacity. Dominant use of red by the male indicates overprotectiveness. Green is a male color suggesting intelligence, self-sufficiency, artistic, and strong-minded qualities. The female using green dominantly is creative, but leans towards masculine self-sufficiency. Yellow is a dominant female color indicating aesthetic female qualities, representing a good disposition, and acceptance of man. Excessive use over-emphasizes "sex-appeal", and is deceptive in nature. Male dominant use of yellow indicates high regard for womanhood; excessive use indicates failure in accepting his "maleness". The excessive use of black and brown may indicate negative feelings.

Napoli indicates motion may be suggestive as:

- a. Smearing -- the immature and insecure.
- b. Scrubbing -- unskilled, retarded, or disturbed.
- c. Scribbling -- the defiant, disappointed, or those lacking in ability.
- d. Pushing out -- the extrovert, or those wishing to rid themselves of responsibilities.
- e. Pulling in -- the introvert, underprivileged, selfish, or orally dependent.
- f. Patting -- the affectionate, responds to love.
- g. Slapping -- resentful.
- h. Scratching -- defiant, rejecting.
- i. Picking -- may be sublimation for masturbation.

Symbolism is described in three levels, the lowest shown in pictures of mud, mass, underwater scenes, fish, snakes, monsters, reptiles, etc. The next level is seen by "portrayals of landscapes, sky, water, sun, darkness, night, trees, plants, and then people and houses." The highest level is seen through activities of man and abstractions.

Validation for Napoli's interpretations was listed as a high frequency of agreement between observation and clinical diagnosis.¹² There was no mention, however, of the number of patients seen, or any other statistical confirmation. Such statistical confirmation was indicated to be forthcoming from research in progress, but this is unavailable at this time.

Later, Napoli indicates some refinement in method of observation. A check sheet is presented incorporating a "multitude" of indicative features which are checked on a rating scale method.¹³ This appears to be rather sterile, but does provide evidence of further investigation. Napoli also suggests that research indicates that the series of eight painting sessions he previously

¹² Ibid. pp. 93-132.

¹³ Napoli in Anderson & Anderson. Op. Cit. pp. 386-413.

stated as essential to any valuable interpretation of the patient's behavior may be cut to six or possibly four sessions. Napoli's work provides a stimulus for further refinement of the technique in areas of standardization and statistical validation.

A criticism of Napoli's procedure in administering the fingerprinting technique is directed towards the tight structure and "instruction" he provides for each subject. He elaborates in detail on technique of motion, tells the subject how much paint to use, what posture to assume, etc. Kadis suggests eliminating the demonstration of technique, telling the subject to paint what he wants to and to indicate when he is finished.¹⁴

Kadis presents characteristics inherent in the fingerprinting task which are important in the observation process:

1. Time elements: Initial reaction time; pauses during painting; total time.
2. Space utilization and location: Expansion; restriction; variation in space usage during a single painting.
3. Color: Choice and handling.
4. Shading: Texture; depth or tridimensional concept.

¹⁴ Kadis in Abt, L.E., & Bellak, L. (Eds.) Projective Psychology, Clinical Approaches to the Total Personality. New York: Alfred A. Knopf, 1950. p. 409.

5. Strokes: (Final products of motions on surface.) Direction; width; shape and continuity of strokes; texture of strokes; figure and ground strokes (hidden or bold).
6. Content: Representations in form; verbalization.
7. Movement and motion: Aggressive -- pulling, slapping, scratching, scrubbing, tearing, etc.; sensuous -- patting, smearing, wallowing; movement "away" or "towards" the subject.
8. Rhythm: Recurrent color, strokes, motions. (Suggestive of a "style" of life, or way of approaching a task.) ¹⁵

Kadis creates a more permissive atmosphere in his administration of the technique, and appears more clinically oriented in his observation of the subject than does Napoli.

Napoli suggests characteristic groups of syndromes for the schizophrenic and paranoid personalities, indicating that more investigation is needed to reveal characteristics of other psychotic classifications. The schizophrenic is noted by irrelevant verbalization in regard to paintings bearing two completely disconnected and incoherent strata or layers of representation. The relativeness of verbalization and content indicates ego development, and inversely the amount of composition and balance indicates the deterioration of the patient. The paranoid is noted by a central figure with protective or side figures. ¹⁶

¹⁵

Idem, p. 412.

¹⁶

Napoli as cited in Bell. Op. Cit. p. 404.

Lehmann and Risquez in 1953 published an article presenting "a method of evaluating fingerpaintings of psychotic persons ... which is applicable to any patient, allows for repetition and quantitative comparison with other paintings, and does not require observation of the patient during the painting process or interviewing him afterwards."¹⁷ Dorken in 1954 studied the reliability and validity of the serial testing aspect of finger-painting. He adapted Lehmann's evaluation method which includes "rating scales for the scoring categories of energy output, affective range, contact with reality, and clarity that are directly meaningful clinically."¹⁸ The range of the scale for each category extends from 0-12 (Dorken's adaptation) or 1-12 (Lehmann's original system) with an optimal score represented as 8. Definitions for the scoring categories as originally established by Lehmann and Risquez and adapted by Dorken are: Energy output--aggressiveness or restraint as determined by motion of the painting stroke, size of painting, and pressure applied. Affective range--spontaneous expression

¹⁷Lehmann, H., & Risquez, F. The use of fingerpaintings in the clinical evaluation of psychotic conditions: A quantitative and qualitative approach. J. ment. Sci., 1953, 99. p. 774.

¹⁸Dorken, H., Jr. The reliability and validity of spontaneous fingerpainting. J. proj. Tech., 1954, 18. pp. 169-182.

denoted by the use of reds and yellows; more controlled expression with the use of blues or greens; and states of inhibition, repression and regression with the use of black or brown.¹⁹ Reality contact--an individual's "relation to reality at the time he was painting.... measured by the degree of realism which the subject has achieved in his painting." Clarity--"... clearness of design, the neatness of execution, the distinctness of line and the separation of colours." Here are also considered the presence or absence of rhythm and co-ordination in the strokes and the degree of organization attempted and achieved."²⁰ Clarity indicates "control of behaviour, thinking, and emotional expression."²¹

Wolff has indicated three "clues" which may be important in the analysis of fingerpaintings. They are discussed as (1) paper coverage, (2) choice of colors, and (3) distribution of colors.²² He suggests that full paper coverage with the paint being used might mean expansiveness, "...while being limited to that part of the paper which is nearest to the child might indicate restricted movements which might have their origin in a certain lack of freedom or in cautiousness." The choice

¹⁹

²⁰ Ibid. p. 170. Lehmann, & Risquez. Op. Cit. pp. 765-767.

²¹

²¹ Ibid. p. 767.

²²

²² Wolff, W. Projective methods for personality analysis of expressive behavior in preschool children. Charact. & Pers., 1941-2, 10, pp. 317-18.

of bright colors suggest a readiness for liveliness and gaiety, as opposed to the choice of dark colors which "correspond more to sensations which a child may have during the night and while dreaming...it would seem that children who prefer dark colors are more dreamy and further removed from reality." In color distribution inferences are made

"...that children who use only one color are caught by only one stimulus at a time, not having the tendency freely to pass from one stimulus to another. This behavior suggests a certain degree of inhibition. Separating each color from the other indicates a sense of order and neatness. Children who cover one color with another do not show ability for separate or distinct assimilation of stimuli; they may be confused to a certain degree. These assumptions only apply to extreme cases." (p. 317-18.)²³

Statement of the problem

Napoli, Lehmann and Dorken based their studies on adult emotionally disturbed populations. Due to the influence of developmental levels in the painting productions of children, the applicability of such systems need to be investigated and adapted. Lehmann and Dorken have indicated that the fingerpainting end product relates directly to the personality structure of the individual, but have not suggested how such information can be used to ascertain problem areas of adjustment.

²³Ibid.

Kadis has indicated significant characteristics inherent in the fingerpainting task which are important in the observation process, but has offered no objective method for evaluating these characteristics. Wolff's work is considered to be exploratory in nature. Other investigations (Rosenzweig and Durbin,²⁴ and Blum and Dragositz²⁵) are equally as limited in their practical application to clinical situations.

There is a definite need for integration and formalization of the psychodiagnostic theories associated with these previous studies in fingerpainting. Also, a standardized scoring system for purposes of diagnosis and interpretation appears to be a necessity for future research.

The use of fingerpainting as an evaluative tool with children holds particular value. It contains the advantages of requiring minimal use of fine muscle coordination, relatively infrequent failures or rejections in the use of the technique, and is effective with all ages, cultures, and most handicaps. Fingerpainting may be used when verbal rapport cannot be established by

²⁴Rosenzweig, L. and Durbin, L. Fingerpainting as an investigative approach to therapeutic techniques. Occup. Ther. Rehabil., 1945, 24. pp. 1-12.

²⁵Blum, Lucille and Dragositz, Anna. Fingerpainting: The developmental aspects. Child Develop., 1947, 18. pp. 88-105.

other means. This is a "play in mud" activity which is socially sanctioned and permits aggressive impulses, satisfies destructive desires, and minimizes fear of self-exposure. Disadvantages connected with the use of such an evaluative tool are (1) time involved in administering the technique, (2) materials and space demanded for execution of the task, and (3) inadequate research on diagnostic implementations.

Purpose and importance of the study

The importance of a standardized evaluation sheet for fingerprinting is directly related to the productivity and worth of any future study in the field. Also, allied clinical areas such as art and occupational therapy are presently in need of more concrete tools for gaining meaningful material about patients. Goodrich has indicated the need for a method of objectively measuring the patient's responses to the projective media used in occupational therapy and has written on the status of research in occupational therapy.²⁶

The purpose of this study is to formulate an evaluation sheet based on reported findings in the literature which can be used in the diagnosis and interpretation of fingerprintings of mentally retarded emotionally disturbed

²⁶Goodrich, D.W. The present status of research in occupational therapy. Amer. J. occup. Ther., 1954, 8 (4). pp. 142-143 and 183.

children. The evaluation sheet presented by this writer proposes to recognize those aspects of a fingerpainting which are theorized to yield psychodiagnostic information about the subject. The areas of emphasis are shading, movement, spatial relationships, color and form.

The specific question investigated was: Will a diagnostic method based on shading, movement, spatial relationships, color and form prove to be unreliable in judges' agreement when applied to fingerpaintings of mentally retarded emotionally disturbed children?

It is the hope of the writer that such an evaluative tool will provide a basis and direction for further study in the field.

CHAPTER II

Projective Techniques as Applied to Children

General observations on projective techniques

Since we are considering fingerprinting as a projective tool, it is necessary to view the field of projective techniques to determine the problems and factors involved.

The theoretical foundations for projective techniques are many and varied, however, according to Bell, the accepted concepts of personality underlying experimentations and developments in the field are: (1) Personality is a dynamic process; (2) personality is of a structured nature; (3) behavior, considered functional in nature, reveals the personality structure of the individual "as well as the influence of the field in which the personality is operating",²⁷ and (4) personality is a depth phenomenon with unconscious phases related in an ordered fashion to surface manifestations.²⁸

Projective techniques have been used by the clinician "to gain insight into the individual personality."²⁹ Bell states this purpose to be an allied goal of the inventory-type personality tests, but the approach methods used in

²⁷Bell, Op. Cit. p. 7. ²⁸Ibid. ²⁹Idem. p. 4.

projective tests separate them from other personality tests.³⁰

Bell lists three common characteristics of projective techniques in terms of a method of approach: (1) presentation of a stimulus in a setting which allows for observation of the way in which the subject interprets and "orders" the test situation. Such interpretation and ordering of the situation provides reflection of the personality. Those situations which have "proved to be more indicative of the personality"³¹ are labeled as projective techniques. (2) Behavior sampling "in a structured event of sufficient brevity to be clinically practicable and of sufficient stimulation to call forth a wide range of individual responses."³² Those responses which show uniqueness or diversity of behavior are emphasized in interpretation. (3) Recorded behavior and the personality producing it are regarded as an "organized totality."³³ A single item cannot be considered as having a universal meaning until the "interrelatedness of various behavior items affecting the single item" is ruled out.³⁴

Bell discusses the difficulties in abstracting quantitative material from the responses to projective

³⁰Ibid. ³¹Idem. p. 5. ³²Ibid. ³³Ibid. ³⁴Idem. p. 6.

tests, which can be treated statistically for measurement of reliability and validity.

"Those who have developed projective techniques have not been timid about introducing subjective aspects into the scoring and interpretation. In many respects such qualitative measures have been the fore-runners of quantitative analyses. It is to this point, the qualitative in projective techniques, that the strongest criticism has been directed--but, that there is a qualitative element in scoring and interpretation is not usually the result of a preference for intuitive methods but of the complexity of the data to be dealt with, and hence of the difficulty in applying mathematical methods."
(p.5-6)³⁵

Abt points out the unwillingness of the "academic psychologist" to include projective techniques until they have been demonstrated to be valid and reliable "in the same way as the non-projective tests have demonstrated their value."³⁶ He further indicates that validity and reliability cannot be established on the projective methods in the same manner as other personality assessment tests because they developed from radically different climates of opinion. "The projective tests have made it quite clear that we must be prepared to abandon the spurious distinction between quantitative and qualitative data. Both sorts emerge

³⁵Ibid. ³⁶Abt. Op. Cit. p. 64.

in the study of personality and we must develop techniques of data treatment which permit us to handle both types."³⁷

Presently, validity of the projective techniques is considered pragmatically justified in terms of its usefulness in clinical situations.

"The clinical usefulness of any test is, to a clinician, adequate justification for its use. If it gives him new clues to a patient's preoccupations, anxieties, sources of strain, and methods of defense, he will and should use it. If he finds that for many patients it is a useful predictor of what he finds by longer and more time-consuming methods, and therefore, that it gives him a quick best guess as to the type of problem with which his patient is confronted, he obviously will and should use it. If with certain types of patients it adds data that help in the differential diagnosis that precedes plans for treatment, he will and should use it." (pp. 27-28)³⁸

Macfarlane and Tuddenham further indicate, however, that the clinician is concerned with scientific objective validation in order to discover research methods which will allow for organization and communication of the processes by which the "clinician synthesizes his material."³⁹ "If devices that disclose projective and

³⁷Ibid. p. 64.

³⁸Macfarlane and Tuddenham in Anderson & Anderson.
Op. Cit. pp. 27-28.

³⁹Ibid. p. 28.

expressive materials are to prove their scientific or diagnostic worth, they must rest upon a strong foundation of clinical perceptiveness, or productive theory, and of research upon basic psychological processes."⁴⁰

Relevant theories underlying art techniques

Within the broad field of projective techniques, this author gives special consideration to relevant theories underlying the development of art techniques. Drawing and painting, color, and art tests can be delineated as areas of importance in study and research. Bell's review shows that art work of children has been of interest to the psychologist since 1890.⁴¹ Recorded clinical materials show studies contributing to the background of art as a projective device to be of four types: "Art as paralleling chronological growth, art tests for intelligence and special abilities, cultural factors in art, and aesthetic judgments."⁴²

Goodenough and Harris have summarized relevant theories and research in the psychology of children's drawings from 1928 to 1949⁴³ and have indicated it is

⁴⁰Idem. p. 53. ⁴¹Bell. Op. Cit. p. 390.

⁴²Bell. Op. Cit. p. 388.

⁴³Goodenough, F. & Harris, D. Studies in the psychology of children's drawings: II 1928-1949. Psychol. Bull., 1950, 47. pp. 369-433.

presently accepted that the spontaneous behavior of children reveals their feelings and desires. A hypothesis drawn from this and related to children's drawings is that "such activity...expresses not only the needs and emotions dominant at the time, but also the more deep-seated and lasting characteristics known as 'personality'".⁴⁴ They observe further in the field of art a crucial need for "a series of objectively defined and reliably measurable categories which may be used for the testing of hypotheses and the determination of relationships...(in) such categories...(which) would enable the clinician to design experiments in such a manner that the validity of his claims could be more readily judged by others."⁴⁵

Schmidl-Wachner outlined a criteria for the analysis of children's drawings emphasizing the formal elements rather than literary or representation content. "...we think the formal elements in pictures are of a peculiar relationship to the ego, of so narcissistic a quality that they are much less changed by the selective force of the super-ego than the content, and thus more directly related to the character of the ego."⁴⁶

⁴⁴Ibid. p. 404-5. ⁴⁵Ibid. p. 418.

⁴⁶Schmidl-Wachner, T. Formal criteria for the analysis of children's drawings. Amer. J. Orthopsychiat., 1942, 12. pp. 95-104.

These elements of importance included (1) size of picture, (2) shape of format, (3) relationship of size of form elements to the whole page, (4) symmetry, balance, and rhythm of form distribution, (5) lines, spots, and color, and (6) motion elements.⁴⁷

Both Azima, Azima, and Wittkower⁴⁸ and Lewis⁴⁹ have pointed out the parallelism between art symbolism and dream images. Lewis lists several uses for the spontaneous art productions of mental patients, one being "...as an aid in diagnosis and therapy by revealing signs and symptoms of the illness, including the phenomena of regression, projection, fears of injury, dissociations of personality, expressions of desires, sadistic and masochistic tendencies, disturbed or perverted sexuality, forgotten instances, and the releasing causes of conflict."⁵⁰

The use of color and its psychological implications is an area of much interest, but with few established

⁴⁷Ibid. p. 96.

⁴⁸Azima, H., Azima, Fern, & Wittkower, E. Analytic Group Art Therapy. Int. J. group Psychother., 1957, 2 (3). p. 259.

⁴⁹Lewis, N. Expression of the emotions in graphic art of mental patients. State of Mind, A review of emotional and psychiatric problems of everyday practice, 1959, 3 (3).

⁵⁰Ibid.

results. Staples⁵¹ and Blum and Dragositz⁵² have considered the developmental aspects of color choices. Staples indicates color preference may be as early as three months, with choice between the ages of six and fifteen months being red, yellow, blue, and green respectively. "Red is best liked until school age, when it is replaced by blue."⁵³ Graves lists color preference of most people to be: Red, blue, violet, green, orange, and yellow in that order.⁵⁴ Alschuler and Hattwick in a study of two to five year old children report those emphasizing warm (red, orange, and yellow) colors show more affectionate and emotionally toned relationships with others. Those children emphasizing cool colors (blue and green) show more controlled and less sympathetic relationships. Consistent use of black was observed to be an indicator of emotional difficulty.⁵⁵

⁵¹Staples, Ruth in Merry, Frieda K. & Merry R. The First Two Decades of Life. New York: Harper & Brothers, 1950. p. 554.

⁵²Blum & Dragositz. Op. Cit. pp. 88-105.

⁵³Staples, Ruth in Merry & Merry. Op. Cit. p. 554.

⁵⁴Graves, M. The Art of Color and Design. (2nd ed.) New York: McGraw-Hill, 1951. p. 401.

⁵⁵Alschuler, Rose & Hattwick, La Berta. A Study of Painting and Personality of Young Children. Vol. 1. Chicago: U. Chicago Press, 1947. pp. 17-18. 37.

Schmidl-Waehner reports color choice of neurotic depressive children to be mixtures of colors and the use of black and blue. Also, "extreme tendencies to color-fear among psychotics" was observed.⁵⁶ Traube reported brown and violet as indicators of depression in children.⁵⁷

Lowenfeld has written on the developmental aspects of color, pointing out the dangers of interpretation without relating the color usage to its environment or context.⁵⁸ "Although much has been written on the emotional meaning and significance of color, color relationship will always be a highly subjective means of expression."⁵⁹ Developmental use of color is charted according to age levels by Lowenfeld:

Age

- "2-4 No conscious use. To distinguish between scribblings.
- 4-7 Emotional use according to appeal. No relationship to reality.
- 7-9 Definite relationship between color and object. Through repetition: Color, schema.
- 9-11 Removal from objective stage of color. Subjective color experiences with emotionally significant objects.

⁵⁶Schmidl-Waehner. Op. Cit. p. 96.

⁵⁷Traube in Lehmann. Op. Cit. p. 766.

⁵⁸Lowenfeld, V. Creative and Mental Growth. (3rd ed.) New York: Macmillan, 1957. p. 416.

⁵⁹Idem. p. 505.

- 11-13 Changes of color in nature (visually minded). Emotional reaction to color (nonvisually minded).
- 13-17 Visual type: Appearance of color in nature. Color reflections. Changing qualities of color environment, with regard to distance and mood. Analytic attitude. Impressionistic. Nonvisual type: Expressive, subjective meaning of color...Color changes with regard to emotional significance. Psychological meaning of color." (p. 505)⁶⁰

Art tests have been utilized by the clinician both for determining intellectual development and for gaining clues to personality. Such tests indicate there are factors in graphic and expressive materials which yield recognizable elements for clinical use.

The following are examples of these clinical art tests: The Easel Age Scale, developed by Beatrice Lantz in 1955,⁶¹ is a new test which is reviewed as "A valuable new tool for understanding young children...paintings produced by kindergarten and primary grade children in the course of their ordinary classroom activity can be scored in such a way as to yield reliable and valid measures of the children's mental maturity."⁶²

⁶⁰Ibid.

⁶¹Buros, O. (Ed.) The Fifth Mental Measurements Yearbook. Highland Park, N.J.: Gryphon Press, 1959. p. 464.

⁶²Stewart, Naomi in Buros. Op. Cit. p. 464.

The House-Tree-Person test, developed by Buck in 1948⁶³ is a freehand drawing technique used for projective purposes. Harriman describes this as the most thorough of its kind but in need of empirical research.⁶⁴

Other related projective techniques are: Expressive movement, with most development credited to Wolff in 1942;⁶⁵ Visual Motor Gestalt Test, developed by Lauretta Bender in 1938;⁶⁶ Draw-A-Person Test, developed by Karen Machover in 1949;⁶⁷ completing pictures, i.e. Horn-Mellersberg Test, developed by Mellersberg in 1945-49;⁶⁸ and the Mosaic Test developed by Lowenfeld in 1929.⁶⁹

Special problems of projective techniques with children

Empirical success and usefulness of projective techniques provides an invaluable tool in personality diagnosis and

⁶³Buck, J. N. The H-T-P Technique, a qualitative and quantitative scoring manual. J. Clin. Psychol. Monograph Supplement. 1948, No. 5.

⁶⁴Harriman in Buros. Op. Cit. p. 238.

⁶⁵Wolff, Op. Cit. pp. 309-330.

⁶⁶Bender, Lauretta. A Visual Motor Gestalt Test and its Clinical Use. Research Monogr., The Amer. Orthopsychiat. Ass. 1938, No. 3.

⁶⁷Machover, Karen. Personality Projection in the Drawing of the Human Figure. Springfield, Ill.: Charles C. Thomas, 1949. p. 35.

⁶⁸Buros, O. (Ed.) The Fourth Mental Measurements Yearbook. Highland Park, N. J.: Gryphon Press, 1953. p. 181.

⁶⁹Lowenfeld, Margaret. The Lowenfeld Mosaic Test. London: Newman Neame. 1954.

in gaining clues to adjustment patterns. The structure of the personality evolves through the influence of "physiological, psychological, and physical-social-cultural"⁷⁰ factors. Such structure is a continuing process during the life of the individual.⁷¹ The understanding of materials reflecting an individual's method of handling situations requires a thorough knowledge of developmental processes and motivation. Such factors present special problems in the universal application of projective techniques, and the importance of such knowledge becomes intensified when interpretation is applied to child behavior. A recorded response may indicate unique behavior in an adult, but may not have the same significance when recorded for a child.

Research indicates maturational periods when a child is capable of certain formulations and observations. Coordinate and physiological factors interplay with the child's sensory responses.

"...visual motor patterns arise from motor behavior that is modified by the characteristics of the visual field. This motor behavior is organized about the primitive enclosed loop with directional tendencies (usually dextrad and horizontal at first) and perseverative

⁷⁰ Bell. Op. Cit. p. 7.

⁷¹ Ibid.

behavior. There is a constant inter-play or integration between the motor and sensory features which can never be separated, though either one may advance more rapidly than the other in the maturation process and appear for a time to dominate any given stage in the evolution of the gestalt."
(p. 61)⁷²

In a study of visual motor maturation in children, Lauretta Bender indicates scribbling as a motor activity for the 2.6 to 4.0 year old child and a rapid differentiation of form occurring from ages 4.0 to 7.0.⁷³ Taylor, in a discussion of the perceptual and motor abilities of the cerebral defective child states, "some children, especially handicapped ones, may perceive and understand differences in directions before they are technically equipped to show these in their finished products."⁷⁴

In Bender's report on the "standardization of the gestalt function in a performance test for children"⁷⁵ she refers to Gesell's work on the drawing ability of small children: "...a child of 9 months to 1 year can scribble imitatively; ...a child of 2 years can imitate

⁷²Bender, Lauretta. Child Psychiatric Techniques. Springfield, Ill.: Charles C. Thomas, 1952. p. 61.

⁷³Idem. pp. 59-60.

⁷⁴Taylor, Edith. Psychological Appraisal of Children with Cerebral Defects. Cambridge, Mass.: Harvard, 1959. p. 330.

⁷⁵Bender. Op. Cit. p. 70.

a vertical stroke; ...at 3 years a child can also draw a recognizable figure of a man.*⁷⁶ Lowenfeld has summarized the child's growth and development with reference to experiences of shape and space. Briefly mentioned here, characteristics in free drawings for specific ages are: The 2 to 4 year old produces scribbling ranging from no motor control to circular with variation of control. The 4 to 7 year old discovers a relationship between his drawing and the thing represented with a constant change of symbols indicated in the human figure ranging from head-feet to body-extremities-features. The 7 to 9 year old demonstrates a definite form concept for man and environment with definite order in space. The 9 to 11 year old shows a tendency towards realistic lines with overlapping in space. The 11 to 13 year old indicates joints and body actions in the human figure with diminishing sizes of distant objects in space. The 13 to 17 year old expresses himself in a more individualistic manner depending upon preference for realism or emotionalism. Attention is given to perspective, three-dimensional qualities, and value relationships. Emphasis on realistic appearance of the human figure or inward expression and interpretation of the human figure is according to preference in approach.⁷⁷

⁷⁶Idem. p. 71.

⁷⁷Lowenfeld. Op. Cit. pp. 505-507.

The question of motivation as a second problem to consider in the application of projective techniques to children is a complex one also containing maturational elements and factors relating to distractability. Diagnostically, the presence of attention defects is a symptom of potential learning difficulties in children with certain types of brain injury.⁷⁸

Merry and Merry have stated that it is only after the second month that a baby exhibits "attention" and he progressively lengthens the time he can concentrate on something as he grows older.⁷⁹ Although there is individual fluctuation and variation depending upon the task and situation, Alstyne's study on the play behavior of pre-school children supports the fact that there is a steady increase of attention duration as the child grows older.⁸⁰

Age	Mean duration in seconds
2	6.9
3	8.9
4	11.4
5	12.6

The span of attention or the ability to concentrate on more than one thing also increases with age, however, such ability is highly influenced by the type of activity

⁷⁸Taylor. Op. Cit. p. 22.

⁷⁹Merry & Merry. Op. Cit. p. 279.

⁸⁰Idem. p. 280.

provided and the child's motivation towards the task. Fulllest attention is gained through selection of materials which are within the individual's capabilities and interest.⁸¹ Murphy recognizes this problem in discussing the Rorschach, "The child is not asked to react to a single card, but to a series of ten cards. This involves a continuous effort. It is emotionally difficult for the young child to keep his uninterrupted attention on a series of ten cards at one sitting."⁸²

The term motivation is derived from the word motive and is defined as "The nonstimulus variables controlling behavior; the general name for the fact that an organism's acts are partly determined in direction and strength by its own nature (or enduring structure) and/or internal state."⁸³ Goals which prompt action for the satisfaction of inner needs vary from children to adults in terms of immediacy. Stagner describes motivated behavior as showing "the characteristics of persistence, variability, and emotional accompaniment."⁸⁴ He indicates the infant's

⁸¹Ibid.

⁸²Murphy, Lois. Methods for the study of Personality in Young Children. Vol. 1. New York: Basic Books, 1956. p. 155.

⁸³English, H.B. & English, Ava C. A Comprehensive Dictionary of Psychological and Psychoanalytical Terms. New York: Longmans Green, 1958. p. 330.

⁸⁴Stagner, R. Psychology of Personality. New York: McGraw-Hill, 1948. p. 271.

motivation to be associated with physiological conditions or tissue needs.⁸⁵ "Infantile personalities are characterized by the inability to inhibit the satisfaction or the avoidance of future pain. Mature personalities are capable of balancing the various drives and the related satisfactions, and of making a long-range choice."⁸⁶

Merry and Merry discuss the variability of individual responses to motivating factors and the importance of considering the way the individual adjusts to individual values, group pressures, as well as biological and social drives.⁸⁷ Murphy points out that for the best results in a test situation, the examiner should be a person with whom the child is familiar⁸⁸ and that the child should be at ease in a play setting.⁸⁹

In considering projective techniques as applied to children the problems previously mentioned have created enough concern to provide stimulus for clinicians to introduce materials with regard to children's responses to the Rorschach⁹⁰ and tests specifically designed for children such as the CAT ("a direct descendant of the

⁸⁵Ibid. ⁸⁶Idem. p. 267.

⁸⁷Merry & Merry. Op. Cit. p. 300.

⁸⁸Murphy. Op. Cit. p. 158. ⁸⁹Idem. p. 160.

⁹⁰Ames, Louise, Learned, Janet, Metraux, Ruth, & Walker, R. Child Rorschach Responses, Developmental Trends from Two to Ten Years. New York: Paul B. Hoeber, 1952.

TAT").⁹¹ Watson comments on the applicability of the Rorschach to children, and indicates that adequate norms have recently been established for satisfactory use of the test with children and "the Rorschach yields meaningful material for children even as young as two-and-one-half years of age."⁹² Shortcomings are evident in the adaptability of these techniques to the brain injured child, however, as discussed in Taylor:

"In our experience, most of the more common projective techniques failed to prove satisfactory with children with cerebral defects. Even where their use is technically possible, the results are often misleading and ambiguous because of the perceptual distortions that may prevail. The Rorschach method often can furnish meager findings only, which can be found with other non-projective methods as well. Interpretation of picture material as used in the TAT or CAT has similar defects. In this regard, further study is needed to learn more about this group of children. It would seem important, among other things, to determine whether and how children with perceptual distortions can identify with symbolized representations of people or interpret actions and events represented in pictures."
(pp. 32-33)⁹³

⁹¹Bellak, L. The Thematic Apperception Test and The Children's Apperception Test in Clinical Use. New York: Grune & Stratton, 1954. p. 149.

⁹²Watson, R. Psychology of the Child. New York: John Wiley & Sons, 1959. p. 57.

⁹³Taylor. Op. Cit. pp. 32-33.

CHAPTER III

Treatment of the Problem

Setting and general milieu of Parsons State Hospital and Training Center

Difficulties encountered by the use of projective techniques with children are of particular concern to those involved with diagnosis and treatment at Parsons State Hospital and Training Center (PSH&TC), a state supported institution. More specific clinical instruments are needed in the Art Center of the Occupational Therapy Department. In this area, where creative art media are available for treatment and diagnostic purposes, the problem of fingerpainting as a projective tool was studied and evaluated.

The Kansas legislature in 1953 designated "Parsons State Training School" to care for emotionally disturbed mentally retarded children between ages six to twenty-one years. In 1956, the institution was redesignated as "Parsons State Hospital and Training Center", the change in terminology becoming effective July 1, 1957, indicated more correctly the "multi-discipline approach utilized by the hospital's psychiatric team in attaining the goal of a dynamic program of ultimate rehabilitation" for its

patients.⁹⁴ The multi-disciplinary program at Parsons includes psychiatry, neurology, nursing service, psychiatric chaplain, medical care, psychology, dietary services and the adjunctive therapies which include departments of vocational training, special education, recreation therapy, psychiatric occupational therapy, psychiatric music therapy, speech therapy, and library facilities with a biblio-therapy service.

The in-patient population at PSH&TC is 675 mildly to profoundly retarded, emotionally disturbed, brain damaged boys and girls. "Patients placed in the hospital's care are institutionalized for very specific reasons: psychological, social, medical, or combinations of these."⁹⁵ The staff of 396 is psychiatrically oriented in their application of treatment, training and rehabilitation services. Sixty-five per cent or 261 of the staff is "assigned to clinical duties.

By category they are Superintendent, psychiatric physician; Clinical Director, pediatric physician; two psychiatric physicians, (these positions are available); two

⁹⁴Parsons State Hospital and Training Center, origins and development of the present philosophy. Unpublished manuscript, Parsons State Hospital and Training Center Library, 1960. p. 2.

⁹⁵Idem. p. 5.

psychiatric residents in the Menninger five year residence program; twenty-one psychiatric nurses; six licensed practical nurses; 176 trained psychiatric aides; one dentist; one dental assistant; one medical technician; one laboratory assistant; one medical records librarian; one X-ray and E.E.G. technician; two medical externs, five clinical psychologists; five psychiatric social workers; one psychiatric chaplain; one coordinator of adjunctive therapies; three registered occupational therapists; one vocational coordinator; thirteen teachers of exceptional children; one special education director; three music therapists; six recreation therapists; four speech therapists; nine adjunctive therapy aides; and three registered dietitians. With the above staff, a patient-therapist ratio of sixteen to one is maintained." (p. 5)⁹⁶

Patients coming into the hospital are seen by thirteen disciplines for evaluation. The psychiatrists prescribe a specific program for each child from the composite of observations and test materials provided by the participant departments. Each child's program is determined according to his needs with the rehabilitation goal being return to "home or community as a contributing member of society."⁹⁷ This is not possible with all patients, "but the principle of the philosophy is represented in that each individual is

⁹⁶Ibid. ⁹⁷Idem. pp. 3-4.

given an opportunity to progress to the limit of his abilities or assets."⁹⁸ The term mentally retarded is considered to be a descriptive concept with regard to the individual's present intellectual functioning and adaptive behavior. The current AAMD definition is: "Mental retardation refers to sub-average general intellectual functioning which originates during the developmental period and is associated with impairment in adaptive behavior."⁹⁹

Descriptive levels are given as:

Not retarded	0	85-115 (measured IQ)
Borderline	I	(negative levels) 70-84
Mild	II	55-69
Moderate	III	40-54
Severe	IV	25-39
Profound	V	untestable -24 (p. 59) ¹⁰⁰

Setting of the evaluation area

The Occupational Therapy Department functions as a clinical service, providing specific treatment for those emotionally disturbed mentally retarded patients prescribed into the area by the psychiatrists. The department incorporates two major areas, the Arts Center and the Crafts Center, providing structured "climates" for treatment through therapists' attitudes and media offered.

⁹⁸Ibid. p. 4.

⁹⁹Heber, R. A Manual on Terminology and Classification in Mental Retardation. Amer. J. ment. Defic., 1959, 64 (2) p. 3.

¹⁰⁰Idem. p. 59.

Activities and atmosphere in the Crafts Center provides structure with constructive, aggressive, and compulsive type media. Patients prescribed into this center indicate needs dynamically related to aggressive drives. Therapists' attitudes are generally matter-of-fact, tolerant, actively friendly, becoming firm, directive or strict if necessary. "Media available within the center for patient or therapist use includes: Carving, clay casting, clay mixing, clay wedging, destructive tasks, engraving, leathercraft, menial tasks, metal craft, metal enameling, metal jewelry, mosaic tile, plastercraft, refinishing, woodcraft."¹⁰¹

Activities and atmosphere in the Arts Center provides opportunity for free projective expression, in a permissive, non-threatening environment with support, warmth, and active friendliness given by the therapist. Depending upon the patient's needs, structure is provided for specific aggressive and phantasy expression. Patients prescribed into this area indicate needs dynamically related to erotic drives. "Media available within the center for patient or therapist use includes: Block printing, clay mixing, clay modeling, clay sculpting, collage construction, copper

¹⁰¹Fairman, C. W. An Introduction to Occupational Therapy within the Parsons State Hospital and Training Center. Unpublished manuscript, Parsons State Hospital and Training Center Library, 1960. pp. 1-2.

tooling, corsage making, creative mosaics, creative stitchery, jewelry, menial tasks, metal craft, painting-drawing, plaster, shell decoration, silk screening, textile decoration, tie dye.¹⁰² Most concern in activities is given to painting, drawing, and clay work. In project completion, emphasis is centered on patient involvement, suitability of the medium used for patient expression, and the structure of the medium as it is related to patient need. The end product is of importance only to the degree that it is necessary for the health of the patient, and skill techniques are secondarily taught as they become essential for further self-expression by the patient.

All new patients are seen for four consecutive sessions of forty-five minutes each day in the Art Center as the initial phase of their occupational therapy evaluation. They work with painting, drawing, coloring, pencil, pen, and occasionally plasticene, in order to provide projective material yielding clues to underlying personality dynamics and adjustment patterns. Anecdotal notes are recorded by the therapist on each patient with regard to group, staff relationships, general appearance, behavior, response to and method of handling the activity.

¹⁰²Ibid.

These notes, together with pictures produced, are added to similar evaluative notes recorded in the Craft Center on the patient's response to clay and small constructive craft work. A summary report is given by one of the occupational therapy staff at the evaluation conference. Assignment of a patient to occupational therapy depends upon his needs as determined by the staff and upon his response to the media available. If occupational therapy is recommended as an appropriate avenue of treatment, the patient is assigned to the "climate" area and peer group which is felt by the psychiatrist and occupational therapy staff to be most conducive to treatment goals.

Therapy patients in the Art Center are seen in forty-five minute sessions on a Monday-Wednesday-Friday; Tuesday-Thursday schedule. Daily sessions are possible in specific cases. The types of patient problems generally dealt with in "art therapy" are: Need for aggressive expression; need for acceptance; need for self-expression; need for narcissistic gratification; need for elevation of self-esteem; need to have phantasy directed into a reality oriented context; and need to have avenues of sublimation provided for expression of sexual conflicts. It is not uncommon for patients to be suggested for assignment to the Art Center for further evaluation with projective media.

Daily anecdotal notes on observed behavior are recorded and six months progress notes written on each therapy patient as routine procedure in all areas of occupational therapy. Special problems and current status of a patient are discussed in a weekly session with the psychiatrists, and immediate daily communication on patient behavior is reported in morning staff meetings at which representatives of the hospital treatment-training areas are present.

"The role of the occupational therapy department has been defined as: A clinical service for the psychiatric treatment of those children in emotional difficulty, within the hospital population, who can benefit from the therapeutic milieu available in an atmosphere of prescribed, healthy, interpersonal relationships in conjunction with creative-constructive activity experiences...(also) physical disability as a concomitant symptom of the "retarded" is not uncommon, and treatment periods are provided in occupational therapy for those with moderate physical disability." (p. 1.)¹⁰³

As a participant member of the intradepartmental occupational therapy evaluation team, the art therapist is aware of the increasing need for more specific methods of utilizing projective art media in a diagnostic sense.

¹⁰³idem. p. 1.

It is found on occasions that the "free" art productions of patients may provide more material than the accepted standard psychological personality tests. Limitations are imposed on interpretation of these art productions however by the lack of research and isolation of significant elements.

The structure of the art center program provides an area adaptable to research in the use of projective art media, and various approaches to the use of fingerpainting in published writings suggested a medium valuable for use with emotionally disturbed mentally retarded children.

Methods used in developing the fingerpainting test

A pilot study was instigated in the Art Center in October, 1959 for the purpose of recording and observing relevant points in the fingerpainting task. The study population of thirty-six patients was selected from the Art Center's regularly assigned fifty therapy patients on the basis of previous inexperience to fingerpainting in that area and no other scheduled psychotherapy. The study population was retained in the program for four months without exception and participated in fingerpainting once a week. Fingerpainting was also administered once to each new admission patient seen for evaluation during the four months study period. The patients were

seen in groups of three to six for forty-five minutes each session. The groups were composed of ten boys and twenty-six girls. For the purposes of this study, sex was not considered to be a relevant variable. Age range of the groups was eight to nineteen years with I.Q. range and M.A. range as shown in the following table (see Table I).

A standard method of presentation was followed for each group with the same staff member attending each group. The method of presentation of the fingerprinting task is included below:

(A) Set up

- (1) Supplies (arranged on adjoining work space).
 - (a) Fingerprint paper (18" x 22").
 - (b) Narrow, long pan for wetting paper.
 - (c) Paper towels.
 - (d) Aprons.
- (2) Table
 - (a) No chairs.
 - (b) Dry alpha color paint in salt shakers: red, blue, brown, black, yellow, green.
 - (c) Fingerprint clear mix.
 - (d) Spoons for dipping mix if desired.
 - (e) Two plastic bowls, two sponges, water.

(B) Procedure

- (1) Demonstration (on prepared fingerprint paper).
 - (a) "Use spoon or hand; take enough mix to cover page".
 - (b) "Add the color or colors you like" (group chooses color for demonstration).
 - (c) "Make a painting using fingers, arm, one or both hands." (The mixture is spread in a circular, horizontal, vertical manner over entire page.)
 - (d) "You can draw a picture or make a design."
 - (e) Page is destroyed so group can use table.

TABLE I

COMPARATIVE AGE, INTELLIGENCE QUOTIENTS,
MENTAL AGE, AND LENGTH OF INSTITUTIONALIZATION
IN THE EXPERIMENTAL SAMPLE

N	C.A.	I.Q.	M.A.	Length of institu- tionalization
1	8-3	47	4-3	0-2
2	8-8	54	5-0	0-1
3	10-2	46	7-3	0-8
4	11-6	58	6-6	2-9
5	11-6	51	6-0	2-10
6	12-7	46	5-0	2-9
7	12-9	58	6-6	1-2
8	12-9	41	6-0	1-1
9	12-11	46	5-0	4-4
10	13-0	53	5-9	4-9
11	13-3	47	7-0	0-11
12	13-7	46	6-9	4-11
13	13-11	57	6-3	3-11
14	14-0	29	4-9	0-11
15	14-4	46	6-3	4-1
16	14-8	46	6-0	6-2
17	14-11	58	5-6	4-6
18	15-1	59	8-6	5-4
19	15-3	45	6-3	2-3
20	15-8	35	6-0	5-9
21	16-1	75	9-0	0-1
22	16-2	49	5-0	4-6
23	16-2	45	7-0	2-9
24	16-4	46	8-0	6-5
25	16-7	69	9-3	0-9
26	17-0	45	5-9	5-11
27	17-1	57	7-6	2-9
28	17-4	47	6-9	4-6
29	17-9	65	9-0	0-6
30	17-11	56	5-9	0-2
31	17-11	48	6-3	2-0
32	18-3	26	4-9	0-11
33	18-7	50	6-6	7-6
34	18-9	45	6-0	4-10
35	19-10	56	12-3	4-10
36	19-10	43	5-6	3-8
TOTAL				
36	14-754	49-722	6-534	3-095

- (2) Names written on back of page by staff.
 - (3) Paper provided pre-wet in horizontal position with name at bottom backside righthand corner.
 - (4) Instructed to put completed painting on floor when finished and another sheet is provided.
 - (5) Requested to title each picture if possible.
- (C) Miscellaneous
- (1) No specific number of paintings is requested.
 - (2) Aprons are provided at all times.
 - (3) Subsequent sessions are the same procedure with the exception of the demonstration which is eliminated.
 - (4) Staff remains as passive as possible during the painting task.
 - (5) Group is informed that therapist's recording during the painting process is done because the staff wants to learn more about how children finger-paint.

Two printed sheets provided a standard method of observing and checking pertinent points about the fingerpainting task: (1) An evaluation sheet covering those aspects apparent in the fingerpainting end product¹⁰⁴ and (2) an observation sheet, developed from trial and error recording of the fingerpainting task during the study, providing a supplement to the information gained from the fingerpainting end product.¹⁰⁵

¹⁰⁴See appendix No. III.

¹⁰⁵See appendix No. I.

Clinical observation of a patient's approach to handling the painting task can provide diagnostic material much the same as that in the "testing the limits" phase of the Rorschach or the interview technique used by psychiatrists. The observation sheet suggests an advantage of ultimate correlation of behavior traits to the items isolated for recording. Such correlation would provide a meaningful structure for various therapists to use in gaining important clues to the dynamics of behavior. A patient's approach to the fingerpainting task is to be observed in five areas: Clock time; placement of mix; color choice; strokes; and movement. A sixth area, communication, is included to provide recording of the patient's labeling of form representation and verbal content associated with the painting.

The observation and the evaluation sheets were compiled from information gained in the pilot study and published writings about fingerpainting and are suggested by this author as a fingerpainting test. A standard method of presentation is recommended, as well as four forty-five minute sessions with groups not to exceed six in number. The size of the group, however, is optional depending upon the patient's ability to concentrate and the therapist's preference.

CHAPTER IV

Present Study

Theory of fingerprinting as a projective technique

In developing the fingerprinting test, the writer recognizes it to be a tool which may provide an avenue for more specific research. In order that such research may be oriented to a common goal, the evaluation sheet¹⁰⁶ has been based on a theory of fingerprinting as a projective technique which is outlined in this chapter as part of the organization of the present study.

It is an accepted assumption by the author that fingerprinting is a projective technique. The basic principles underlying the use of fingerprinting as a projective tool refer to the fundamental theory of projection.

"Projection, as originally defined by Freud, is a defense mechanism. ...Projection in the Freudian sense, therefore, represents a misperception or a false perception...still in the person's unconscious; it is not in the person or object on whom the projection is made. (p. 3.)¹⁰⁷ ...Projective tests are, in fact, not strictly tests of projection, but tests of mental mechanisms or of personality dynamics including projection. (p. 3-4.)¹⁰⁸ ...Nowadays in

¹⁰⁶See appendix, No. III

¹⁰⁷Anderson. Op. Cit. p. 3. ¹⁰⁸Idem. pp. 3-4.

America, projection is used to include all kinds of utterances and expressions of the subject as far as these are personal and not decided by the rules of his society. (p. 149)¹⁰⁹ ...Thus, we find in someone's projection responses on a projection test, for instance, the way in which he has determined that he sees himself with regard to himself expressed implicitly or explicitly." (p. 154)¹¹⁰

A further aspect of projection has been expressed by Azima, et. al.: "By projection is meant putting a fantasy distance between ego and need. This definition, which implies that what is inside and unacceptable has to be gotten rid of (externalized), is essentially that of Freud's, who traced back the early projective mechanisms to that of spitting out."¹¹¹

From these definitions of the basic principles of projection, an additional step was taken in the present study to specify more clearly the theory underlying fingerprinting as a projective technique. A formal statement of theory has been drafted by the author from published writings about clinical observations with the use of fingerprinting. It is felt that such a step is necessary in structuring research and study in the field. The theory sets forth those formal aspects of a painting

¹⁰⁹Idem. p. 149. ¹¹⁰Idem. p. 154.

¹¹¹Azima, H., & Azima, Fern. Projective group therapy. Int. J. group Psychother., 1959, 9 (2). p. 177.

which are hypothesized to yield projective material relating to adaptive behavior. The formal elements are: Shading, spatial relationships, color, form, and movement. Definitions of terms used in drafting the theory are itemized for the reader:

- (1) Psychodiagnostic tool: A device for study which allows for responses by the individual to be the "way in which he has determined that he sees himself with regard to himself expressed implicitly or explicitly."¹¹²
- (2) Fingerprinting: "A process with which communication can be established on either a verbal or non-verbal level."¹¹³
- (3) Affect: "The dynamic or essential quality of an emotion; the energy of an emotion. A class name for feeling, emotion, mood, temperament."¹¹⁴
"...the ability to relate to others."¹¹⁵
- (4) Design: A purposeful arrangement of line, form and/or color to produce a coordinated result.
- (5) Tactile: "Pertaining to the sense of touch."¹¹⁶
- (6) Texture: "The quality of a surface, such as rough, smooth, mat, or dull, glossy, etc."¹¹⁷
- (7) Intensity: "The quantitative aspect of sensation (or attribute of sensation), or the how much of a particular sense quality..."¹¹⁸

¹¹²Anderson. Op. Cit. p. 154.

¹¹³Napoli, P. Fingerprinting and personality diagnosis. Genet. Psychol. Monogr., 1946, 34, p. 134.

¹¹⁴English & English, Op. Cit. p. 15.

¹¹⁵Department of Psychological Services. Glossary of the Most Common Terms Used in the Psychology of Mental Retardation. Unpublished Manuscript, Parsons State Hospital and Training Center Library. 1960. p. 1.

¹¹⁶Idem. p. 5. ¹¹⁷Graves. Op. Cit. p. 430.

¹¹⁸Drever, J. A Dictionary of Psychology. Baltimore, Md.: Penguin Books, 1956. p. 139.

- (8) Symbolization: "A character, mark, abbreviation, or letter indicating something..."¹¹⁹ Use of lines, strokes, and/or form to represent something.
- (9) Lines: "A continuous, unbroken mark made by a ... drawing instrument. Also a series of separated points or other units that lead the eye along a path."¹²⁰
- (10) Strokes: Graphic record of "a movement, as of the hand, arm, or some instrument, by which something is made or done...one of a series of recurring movements."¹²¹
- (11) Color shade: "A series of colors of any fixed hue and saturation which vary only in brilliance."¹²²
- (12) Value: "Degree of luminosity or brightness of a color or of a neutral gray."¹²³
- (13) Movement: Motor action. Investment and energy expended in the production of a painting as determined by lines and strokes.
- (14) Form: Shape and structure in the graphic content arrangement of a painting. Organization and control of thought processes and emotional responses as seen in the clearness of design and design symbolization.
- (15) Spatial relationships: Quantitative association of medium and/or graphic content to page area. Freedom of interaction with the medium indicates a "pattern of relationship with the environment"¹²⁴ as determined by use of page, use of painted area and emphasis area.
- (16) Shading: Variations in the value and texture of a color. Visual and tactile handling of the medium

¹¹⁹Funk & Wagnalls. The College Standard Dictionary. New York: Author, 1946. pp. 1138-1139.

¹²⁰Graves. Op. Cit. p. 426.

¹²¹Funk & Wagnalls. Op. Cit. pp. 1115-6.

¹²²Warren, H. C. (Ed.) Dictionary of Psychology. New York: Houghton Mifflin, 1934. p. 50.

¹²³Graves. Op. Cit. p. 430.

¹²⁴Bender, Lauretta. Op. Cit. p. 16.

indicating the nature and degree of response to affective needs¹²⁵ as determined by surface texture and intensity of shading.

- (17) Color: "A quality of visible phenomena, distinct from form...and shade."¹²⁶ Visual response to the medium indicating "nature and degree of intensity of the emotional life"¹²⁷ as determined by use of unmixed or mixed colors.

In the clinical use of fingerprinting as a projective technique, certain assumptions have been accepted. These assumptions are listed by this author as postulates which are basic principles to the theory of fingerprinting as a psychodiagnostic tool:

- (1) There are specific observable elements in the fingerprinting end product which can be objectively categorized.¹²⁸
- (2) There are specific observable elements in the fingerprinting end product which indicate movement.¹²⁹
- (3) Movement as observed in lines and strokes relates to energy expended and investment given in the painting process.¹³⁰
- (4) There are specific observable elements in the fingerprinting end product which indicate form.¹³¹
- (5) Form as observed in clearness of design and design symbolization indicates control of thought processes and emotional responses.¹³²

¹²⁵Merriam-Webster, A. Webster's New Collegiate Dictionary. Springfield, Mass.: G. & C. Merriam Co. 1956. p. 162.

¹²⁶Merriam-Webster. Op. Cit. p. 162.

¹²⁷Bender. Op. Cit. p. 16.

¹²⁸Lehmann. Op. Cit. p. 7. Napoli. Op. Cit. pp. 93-132. Kadis in Abt & Bellak. (Eds.) p. 412.

¹²⁹Lehmann. Op. Cit. p. 765. ¹³⁰Bender. Op. Cit. p. 16.

¹³¹Lehmann. Op. Cit. p. 766.

¹³²Idem. p. 767. Bender. Op. Cit. p. 16.

- (6) There are specific observable elements in the fingerprinting end product which indicate spatial relationships.¹³³
- (7) Spatial relationships as observed in use of page, use of painted space and emphasis area, indicates social interaction behavior pattern.¹³⁴
- (8) There are specific observable elements in the fingerprinting end product which indicate shading.¹³⁵
- (9) Shading as observed in surface texture and intensity of shading indicates the nature and degree of response to affective needs.¹³⁶
- (10) There are specific observable elements in the fingerprinting end product which indicate color.¹³⁷
- (11) Color as observed in unmixed or mixed usage indicates the "nature and degree of intensity of the emotional life"¹³⁸ as influenced by the social environmental stimuli.¹³⁹

In order to test the theory of fingerprinting as a psychodiagnostic tool, deductions are drawn from the above listed postulates. The deductions are listed as research items and are numbered according to the postulate they refer to:

- (1) The fingerprinting end product can be objectively described in terms of those items relating to shading, movement, spatial relationships, color, and form.

¹³³Wolff. Op. Cit. p. 317. Schmidl-Wachner. Op. Cit. p. 97.

¹³⁴Lehmann. Op. Cit. p. 766. Bender. Op. Cit. p. 16.

¹³⁵Lehmann. Op. Cit. p. 764.

¹³⁶Klopfer, B., Ainsworth, Mary, Klopfer, W., & Holt, R. Developments in the Rorschach Technique. Vol. I. New York: World Book Co., 1954. p. 344. Rapaport, D. Diagnostic Psychological Testing. Vol. II. Chicago: The Year Book Pub. Co., 1946. pp. 240. 279-287.

¹³⁷Lehmann. Op. Cit. p. 764. ¹³⁸Bender. Op. Cit. p. 16.

¹³⁹Wolff. Op. Cit. p. 317. Schmidl-Wachner. Op. Cit. p. 95. Klopfer. Op. Cit. pp. 327-338. Rapaport. Op. Cit. pp. 238-240.

- (2) Movement in the fingerpainting end product can be evaluated according to type of lines and strokes used.
- (3a) Movement as observed in types of lines can be related to energy expended on a scale ranging from absence to excess.
- (3b) Movement as observed in types of lines can be related to personal investment on a scale ranging from absence to excess.
- (3c) Movement as observed in types of strokes can be related to energy expended on a scale ranging from absence to excess.
- (3d) Movement as observed in types of strokes can be related to personal investment on a scale ranging from absence to excess.
- (4) Form in the fingerpainting end product can be evaluated according to clarity of design and design symbolization.
- (5a) Clearness of design can be related to control of thought processes on a scale ranging from minimum to maximum.
- (5b) Clearness of design can be related to control of emotional responses on a scale ranging from minimum to maximum.
- (5c) Design symbolization can be related to organization of thought processes on a scale ranging from minimum to maximum.
- (5d) Design symbolization can be related to organization of emotional responses on a scale ranging from minimum to maximum.
- (6) Spatial relationships can be evaluated in the fingerpainting end product according to those elements relating to use of page, use of painted space and emphasis area.
- (7a) Spatial relationships as observed in use of page can be related to the exhibited degree of interaction and relationship ability with the social environment on a scale ranging from limited to expansive.
- (7b) Use of painted space can be related to the exhibited degree of relationship ability with the social environment on a scale ranging from limited to expansive.
- (7c) Emphasis area can be related to the perception of the self in relationship to the environment on a scale ranging from limited to expansive.
- (8) Shading in the fingerpainting end product can be evaluated according to those elements related to surface texture and degree of shading.
- (9a) Shading as observed in surface texture can be related to nature of response to affectional needs on a scale ranging from sterile to rich.

- (9b) Shading as observed in degree of shading can be related to nature and intensity of response to affectional needs on a scale ranging from sterile to rich.
- (10) Color in the fingerprinting end product can be evaluated according to those elements classified as unmixed or mixed.
- (11) Color as observed in the use of mixed or unmixed can be related to the nature and degree of internal response to the perceived social environment on a scale ranging from weak to intense.

The theory, as stated previously, is so designed that the postulates and deductions relate directly to an evaluation sheet prepared by the author. The first deduction listed has been the basis of a study, to be described in this chapter, for testing the reliability of a method of evaluating the fingerprinting end product.

Method of handling the problem

As a beginning step in structuring a fingerprinting test based on the theory presented in this chapter, a four month pilot study¹⁴⁰ with institutionalized mentally retarded emotionally disturbed children was completed for purposes of formalizing an evaluation sheet.¹⁴¹ This evaluation sheet includes five categories, shading, spatial relationships, color, movement and form. The categories are further sub-divided into emphasis areas, e.g. shading

¹⁴⁰See Chapter III, pp. 40-45.

¹⁴¹See Appendix, No. III.

includes surface texture and degree of shading; spatial relationships includes use of page, use of painted space, and emphasis area; color includes unmixed, and mixed; movement includes lines and strokes; and form includes clarity of design and design symbolization. Each emphasis area under a major category contains descriptive items for use in evaluating a fingerpainting.

In order to determine the discriminatory usefulness of this evaluation sheet, a selected sample of thirty-six fingerpaintings was chosen from the total 576 fingerpaintings produced by the patients assigned to the Art Center of Occupational Therapy. The paintings were arbitrarily chosen as the first produced in the month of November. Four judges were selected to evaluate the paintings from the staff of the psychology department and the occupational therapy department, on the basis of previous inexperience to the evaluation system being used and on the basis of professional background. Two judges had been employed by the hospital two years, one as a registered occupational therapist and the other as an adjunctive therapy aide. The third judge had been employed by the hospital one year and had completed a masters in psychology. The fourth judge had been employed two months and was participating in the psychology training program for master's students.

Conditions set for the study included identical typewritten instructions to the judges, definition of terms, score sheets to be used in recording answers, and the evaluation sheet to be tested.¹⁴² Scoring by each judge was done independently without access to discussion or previous knowledge about the patients or the evaluation sheet being used. Each judge scored the same paintings and was given one week to complete the task. Materials were checked out and turned in to the secretary in the psychology department. The paintings were numbered on the back with a corresponding number provided on the score sheet.

In order to analyze the results of the judges' evaluations of the paintings, each possible choice in the descriptive items on the evaluation sheet was given a number. The number recorded for each column under the five major categories was listed for observation. The observed percentage of agreement between the four judges, as compared to the expected percentage of agreement between the four judges indicates the discriminatory usefulness of the evaluation sheet (Table II).

Procedures and Techniques

Data from the inter-judge agreement study was recorded to ascertain the reliability of the descriptive

¹⁴²See Appendix Nos. II, III, IV.

items on the proposed evaluation sheet. Those recordings showing that two (50%), three (75%), or four (100%) judges agreed were added for each column and divided by the total possible number of agreements ($144 = 36 \text{ paintings} \times 4 \text{ judges}$) to indicate the observed percentage of agreement. The expected proportions of agreement were calculated according to a null basis, i.e., the proportion of chance combinations resulting in two or more identities among the four judges was determined for each number of possible judgements (two to eight) by simple application of the laws of probability.¹⁴³

Calculations for the percentage of agreement and significance between the four judges who scored the thirty-six paintings using the prepared evaluation sheet are listed in Tables II and III. Expected probability is compared to observed probability according to two, three, four, five, six, seven, and eight choice items (Table II). From these figures, it is noted that there is a fairly good percentage of agreement between the four judges in their choice selection from the items offered on the evaluation sheet. The exception to a percentage of

¹⁴³Senders, Virginia. Measurement and Statistics. New York: Oxford U. Press, 1958. Chapters 6 & 10.

agreement adequately higher than that expected appears in item number four under degree of shading which is a two choice grouping. This item may prove unnecessary to the overall projective value of the test.

A z score was obtained from the comparison of the empirical probability with the theoretical probability on each of the items in the five major categories to determine the significance of the percentage of agreement. The hypothesis for the significance tests was that the samples were drawn from a population with a known expected proportion of agreement having an NP or NQ greater than five.¹⁴⁴ The formula used was:

$$z = \frac{p - P}{\sqrt{\frac{P \times Q}{N}}}$$

Where p = Observed proportion of agreements

(100% = 4 agreements
75% = 3 agreements
50% = 2 agreements)

P = Expected proportion of agreements

Q = 1 - P

N = Total possible agreements (144 in all cases,
4 judges x 36 paintings)

The z score was translated in the normal curve table for the levels of significance (see Table III).¹⁴⁵

¹⁴⁴Senders, Op. Cit. pp. 396-398.

¹⁴⁵Edwards, A. Statistical Methods for the Behavioral Sciences. New York: Rinehart & Co., 1958. pp. 490-499.

TABLE II

OBSERVED AND EXPECTED PROBABILITY OF AGREEMENT
ON THE EVALUATION ITEMS

Item name	Item No.*	No. of choices in each item	Observed % of agreement	Expected % of agreement
SHADING				
Surface texture	(1)	4	59	51
	(2)	3	76	59
Degree of shading	(3)	3	76	59
SPATIAL RELATIONSHIPS				
Use of page	(5)	4	74	51
Use of painted space	(6)	5	68	44
Emphasis area	(7)	5	88	44
COLOR**	(8)	7	93	34
	(9)	8	92	30
MOVEMENT				
Lines	(10)	4	67	51
	(11)	5	70	44
	(12)	7	67	34
Strokes used	(13)	6	56	39
	(14)	3	78	59
FORM				
Clarity of design	(15)	4	73	51
Design symbolization	(16)	7	60	34

* Note: For Item No. description see Appendix No. III.

** Color is calculated as a seven and eight choice item due to an added choice of selection of the appropriate column designed into the category. See Appendix No. III.

TABLE III

LEVELS OF SIGNIFICANCE FOR THE OBSERVED AND
EXPECTED PROBABILITY OF AGREEMENT ON THE EVALUATION
ITEMS

Item No.	Observed	Expected	z	p (sig. level)
(1)	59	51	1.97	.05
(2)	76	59	4.17	.001
(3)	76	59	4.00	.001
(4)	70	69	.34	.734 not sig.
(5)	74	51	5.37	.001
(6)	68	44	4.88	.001
(7)	88	44	10.78	.001
(8)	93	34	15.25	.001
(9)	92	30	17.22	.001
(10)	67	51	3.98	.001
(11)	70	44	6.37	.001
(12)	67	34	8.25	.001
(13)	56	39	4.12	.001
(14)	78	59	4.69	.001
(15)	73	51	5.30	.001
(16)	60	34	6.50	.001

The objective discriminatory value of the finger-painting evaluation sheet appears to be reliable. Such a system for classification of various formal elements in a painting is presented as a usable tool in future research to determine the relationship of behavioral patterns to patterns as recorded on the evaluation sheet.

In considering scope and limitations of the present study, the sample of thirty-six fingerpaintings is recognized to be only selectively representative of the present in-patient population at PSH&TC. The four judges, two occupational therapy volunteers and two psychology staff volunteers, is considered representative of the type of personnel most likely to use such an evaluation system. The reader should be aware that the study is limited, and the discriminatory significance of the items on the test may prove to be different with another type population and with another selection of fingerpaintings. Also, there appear to be some descriptive elements on the protocol sheet which may need revision.

The evaluation sheet has been prepared to cover those elements expected to appear in a fingerpainting done by children. The full value of the test is yet unknown. It does provide useful material for more productive study in isolating those elements which may be considered in clinical

interpretation. Methods of handling the items on the evaluation sheet in a profile form is yet to be determined, and each item on the sheet should be subjected to analysis for clinical significance.

The next step in preparing the fingerpainting projective test should be directed towards the interpretation and meaning of the items on the test as they are combined to create a total profile from the five major categories, supplemented by inferences gained through use of the observation sheet.

CHAPTER V

Results and Conclusions

Theoretical implications of the study

Interest in the use of fingerpainting as a diagnostic projective technique has resulted from the increasing awareness of the close association between art media and psychological tools in clinical work. However, because of the difficulties involved in formulating any objective descriptive tool, many professional individuals spend their efforts in criticism of the vague and ill-defined concepts present in personality tests, and tend to disregard the still prevalent need for more instruments providing insight in the area of personality. Whether or not the instrument suggested fills this need depends upon the combined interest and constructive efforts of both the academic psychological researcher and the theoretical clinician. To isolate in self-imposed righteousness a "proper" approach to test development, only provides ineffectual shortcomings in the scientific understanding of behavior.

The writer is acutely aware of the need for careful objective research and constructive analysis on the

material presented in this work. The items on this test are not suggested as final, but rather a beginning categorization which may prove to be a foothold in developing associations between the motor activity and selective approach used in fingerprinting, and the personality makeup of the individual doing the task. Theoretically the classifications of the descriptive items on the test relate to energy expended; personal investment; control and organization of thought processes and emotional responses; interaction and ability to relate with the social environment; perception of self in relation to the environment; nature and intensity of response to individual affectional needs; and nature and degree of response to the perceived social environment.

Each description in the items on the test should have a related clinical inference to justify their inclusion; and further, should be considered in their worth, only as they contribute to the total effect of the other chosen descriptions in the compiling of a profile. For example, the use of short, vertical, straight lines have little meaning in terms of energy expended unless accompanied by a description of heavy, unrelated interrupted marks. We then might suspect the individual to be restricting the presence of forceful energy at a fairly high level, if other parts of the profile indicate distinct abstract

design. Whether or not the confined energy is causing social problems, might be picked up in the degree of expansiveness observed in spatial relationships and his sensitiveness to and ability to meet his own needs through the subtle use of shading and color.

Descriptions included in the categories were selected to further define and isolate the particular individual characteristics which might be operating within the painter as he interacts with the medium. In the category of shading, the consistency of paint usage, quantity used, intensity, and dimensional effect may be suggestive of the richness of affect. Therefore, although item one (1) and item four (4)¹⁴⁶ were less significant statistically in the present study, careful consideration would need to be given the content of those items before they were discarded.

In spatial relationships, the quantitative use of the page may give clues to the degree of expansiveness with which the individual meets his environment; the manner in which he uses the painted space may indicate how well he uses his social expansiveness, and emphasis area may point out how he sees himself in relationship to the interactions of others. Color is an interestingly subjective means of

¹⁴⁶See Table III. p. 59.

expression. The way it is handled, separately or mixed, may suggest the manner of handling inner responses to social pressures. The tint of color may be further development of the degree of internal reaction environmental pressures cause.

Length, direction, shape of lines, and type of strokes used in the movement category relate in a manner to indicate the amount of motor and personal investment the individual is overtly projecting as well as suggesting the presence of energy which is internalized.

The category of form is a more intellectual one, giving clues to the organizational capabilities of the painter by the production and clearness of design symbolization. Also, it would appear that the degree of controlled effectiveness with which the individual utilizes his abilities may be indicated.

The accuracy and specificity of such interpretations can come about only through the continued study and analysis of various approaches to the fingerpainting task, and through an effort to gain verification by psychiatric, psychological, and neurological confirmation.

Value of the test and indications for future research

The test contains the possibility of being used with the weighting of some of the descriptive elements to determine approximate developmental levels in children. It has the advantage of small group administration, and can be utilized by either clinical diagnosticians or allied therapies in their evaluation programs. A particularly important area for the consideration of this test would seem to be the emotionally disturbed young child (6-14 years) who is threatened in a test situation, or with those who have speech difficulties.

Further use of the test should be within a research structure where a single aspect is to be studied. Development of scales to allow for testing the deductions listed in Chapter IV¹⁴⁷ should be initiated with attention given to measurement devices and methods of recording behavior. Such research more specifically should include:

1. Item analysis on the observation and evaluation sheets.
2. Refinement of the observation and evaluation sheets.
3. Development of scales to test the behavioral correlations to the items on the test.
4. Development of a manual for clinical interpretation of the items on the test.
5. Studies to determine the reliability and validity of the test.

¹⁴⁷ See Chapter IV, p. 46.

Summary

The present study has provided information sufficient to accept the postulate that there are specific observable elements in the fingerpainting and product which can be objectively categorized and, the deduction or hypothesis that those items can be described in terms relating to shading, spatial relationships, color, movement, and form with reliability as shown by the agreement of judges. As the material used in this study is still in a stage of research, its full applicability to various populations and types of individuals has not yet been tested, and it should only be used at the present time as a research instrument. Further, it is suggested that since this material contains qualities of a projective technique, only those individuals trained in psychology, art therapy, or psychiatric occupational therapy should attempt its use as a psychodiagnostic tool.

An extensive appendix section is included with photographs and accompanying descriptions of fingerpaintings in order that the reader may more adequately integrate the discussed evaluation sheet categorizing the formal elements of fingerpaintings. Such examples may assist to stimulate further constructive thinking in the area of fingerpainting as a psychodiagnostic technique.

APPENDIX

APPENDIX I

Observation Sheet

(To be used during the fingerpainting task)

CLOCK TIME: _____ (seconds) to begin painting from time
offered mix
(minutes) for completion of each painting

PLACEMENT OF MIX: (circle items)

- a. spoon b. hand (manner in which mix is applied to paper)
- a. center b. edge (position of mix when applied to paper)
- a. add water (at any time during the painting process)

COLOR: (Indicate 1st, 2nd, 3rd choice for each painting)

- a. red blue black brown yellow green mud (painting #1)
- b. red blue black brown yellow green mud (painting #2)
- c. red blue black brown yellow green mud (painting #3)

STROKES: (circle one or more)

- a. Dominant hand
 - 1. right
 - 2. left
 - 3. both
- b. Use of hand in painting task
 - 1. palm
 - 2. finger tips
 - 3. side
 - 4. fist
 - 5. heel
 - 6. other
- c. Use of medium in painting task
 - 1. smear-scrub
 - 2. scribble
 - 3. finger draw
 - 4. pat, rub, press
 - 5. flip, scratch, slap
 - 6. other

MOVEMENT: (circle most appropriate)

- a. Dominant movement to spread paint
 - 1. 2
 - 2. 9
 - 3. 2 9
 - 4. 9 2
 - 5. top to bottom
 - 6. bottom to top
 - 7. to side and around edge
 - 8. horizontal
 - 9. varied and/or other
- b. Dominant movement pattern during painting process
 - 1. repetitions (rigid perseveration in use of hand and approach to medium).
 - 2. flexible (even and varied use of hand and approach to medium).
 - 3. discordant (isolated, jerky, haphazard use of hand and approach to medium).

COMMUNICATION: (Verbal association and form representation)

APPENDIX II

Instruction sheet for use of the fingerprinting evaluation sheet

The fingerprinting evaluation sheet is divided into five major categories: SHADING, SPATIAL RELATIONSHIPS, COLOR, MOVEMENT, and FORM. These major categories are further subdivided into specific areas from which the rater will make a single selection of the item most nearly descriptive of the fingerprinting.

The subdivisions serve to outline more clearly the emphasis areas in a major category. For example SHADING includes surface texture and degree of shading; SPATIAL RELATIONSHIPS includes use of page, use of painted space, and emphasis area; COLOR includes unmixed, and mixed; MOVEMENT includes lines and strokes used; and FORM includes clarity of design and design symbolization.

In those categories which include two and three descriptive columns under the sub-division, a single choice is to be made from each of the columns. An exception to this rule may occur in the COLOR category where a single descriptive item from one of the two columns will suffice.

The fingerprinting is to be observed in terms of its initial impression on the viewer. Evaluation is to be made with regard to predominant effect and use of the paint.

When evaluating the drawing the examiner should determine the primary involvement, i.e., background effect from spreading the paint on the paper, or foreground effect from utilization of lines and strokes to create a design. Fingerdrawing of scenes, people, objects, lettering, etc. may be superimposed over a definite linear background effect. When the background effect appears prominent, it should be scored in the MOVEMENT category in preference to the design which will be covered in the category FORM. When the linear design drawing (foreground) is the most prominent it should be scored according to primary impact on the viewer as to length, direction, and shape in the category MOVEMENT.

Each item selected should be numbered and written onto the provided score sheet. An example is listed below:

Evaluation sheet	(Judges choice)	Score sheet
SHADING		SHADING
<u>Surface texture</u>		<u>Surface texture</u>
1. smooth 1. thick	(1. smooth)	
2. rough 2. thin	(2. thin)	1 - 2
3. lumpy 3. medium		
4. varied		
<u>Intensity of shading</u>		<u>Intensity of Shading</u>
1. faint 1. flat	(1. flat)	
2. dark 2. depth	(2. dark)	2 - 1
3. intermediate		

Definition of terms used on evaluation sheet

- (1) Movement: Lines and strokes indicating motor action of the painter.
- (2) Form: Shape and structure in the graphic content arrangement of a painting as seen in design and design symbolization.
- (3) Spatial relationships: Quantitative association of medium and/or graphic content to page area. Freedom of interaction with the medium as determined by use of page, use of painted area and emphasis areas.
- (4) Shading: Variations in the value and texture of a color. Visual and tactile handling of the medium as determined by surface texture and intensity of shading.
- (5) Color: Solid and combinations of colors indicating visual response to the medium as determined in mixed and/or unmixed.
- (6) Smooth: An even and well spread paint surface.
- (7) Rough: A coarse and uneven appearance or actual texture to the paint (including roughness which is visually created), but with adequate handling of the paint.
- (8) Lumpy: A surface with lumps of paint, denoting minimum attempt to spread the paint, or inadequate handling of the paint.
- (9) Varied: That surface which does not meet specifications of smooth, rough, or lumpy.
- (10) Thick: Excess quantity of paint, and/or pigment applied to the paper.
- (11) Thin: Minimum quantity of paint, pigment, and/or excess use of water.
- (12) Medium: Adequate quantity of paint, pigment, and water.
- (13) Faint: Minimum use of pigment, creating weak color appearance. (Excessive use of water may also weaken the color appearance.)
- (14) Dark: Excessive use of pigment, creating strong color appearance.
- (15) Intermediate: Average use of pigment, creating adequate color.
- (16) Flat: No effect of a dimensional quality created by use of form, shade or movement.
- (17) Depth: An effect of a dimensional quality created by use of form, shading, or movement.
- (18) Line: An unbroken mark, or a series of separated points that carry the eye along a path suggesting length, direction, and shape.

- (19) **Strokes:** The manner in which lines, marks, and form were created. A graphic record of the movement of the hand, arm, fingers, etc.
- (20) **Light:** Slight pressure applied to the painted surface creating an indefinite mark as determined by the white paper showing through.
- (21) **Heavy:** Forceful pressure applied to the painted surface creating a definite mark as determined by the clearness of the white paper showing through.
- (22) **Scratched-torn paper:** Excessive pressure from rubbing or use of fingernails to damage the paper.
- (23) **Design:** A purposeful arrangement of line, form and/or color to produce a coordinated result.

APPENDIX III

Fingerprinting evaluation sheet (select the most appropriate description in each column)

SHADING

A. Surface texture

(Item 1)	(Item 2)
1. smooth	1. thick
2. rough	2. thin
3. lumpy	3. medium
4. varied	

B. Degree of shading

(Item 3)	(Item 4)
1. faint	1. flat
2. dark	2. depth
3. intermediate	

SPATIAL RELATIONSHIPS

A. Use of page

(Item 5)
1. perimeter or center ($\frac{1}{2}$ & less)
2. edges bare ($\frac{3}{4}$ space used)
3. partial whole ($\frac{3}{4}$ / not whole)
4. whole (all space used)

B. Use of painted space

(Item 6)
1. no design attempted
2. isolated design in $\frac{1}{4}$ area
3. design in $\frac{1}{2}$ painted area
4. design covers $\frac{3}{4}$ area
5. design covers all painted area

C. Emphasis area

(Item 7)
1. bottom (lower $\frac{1}{2}$ page)
2. top (upper $\frac{1}{2}$ page)
3. edge-perimeter-side
4. center
5. all over ($\frac{3}{4}$ /)

COLOR

A. Unmixed	B. Mixed
(Item 8)	(Item 9)
1. black	1. blue-green
2. brown	2. orange
3. blue	3. grayed-red-green
4. green	4. yellow-green
5. red	5. purple
6. yellow	6. mud (colors mixed and indefinable)
	7. unmixed (all or several colors used separately)

MOVEMENT

A. Lines		
length	direction	shape
(Item 10)	(Item 11)	(Item 12)
1. none	1. circular	1. wavy
2. short	2. horizontal	2. angular
3. long	3. vertical	3. spiral
4. medium	4. diagonal	4. straight
	5. indefinable	5. rounded
		6. indefinable
		7. mixed

B. Strokes used

(Item 13)	(Item 14)
1. no definite marks	1. light
2. disconnected marks (daub, dotting, pressing)	2. heavy
3. unrelated interrupted marks	3. scratched-torn paper
4. continuous related marks	
5. disconnected marks with isolated integrated form	
6. related interrupted marks (integrated form)	

FORM

A. Clarity of design

(Item 15)
1. smearing, scrubbing, no definite marks
2. scribbling, indefinable
3. fairly distinct, distinct
4. accurate, meticulous

B. Design symbolization

(item 16)

1. disordered: bizarre, meaningless repetition
2. controlled: purposive repetition
3. symbolization unrelated: geometric, circular object - people...no order in space or relationship to each other
4. landscape-buildings-people (simple)-lettering
5. abstract design (integrated and planned use of space)
6. detailed representation or drawing-overlapping of objects...writing may be included
7. 3-dimensional: diminishing sizes of distant objects, light and shadow effect

APPENDIX IV

SCORE SHEET

SHADING		SPATIAL RELATIONSHIPS			COLOR		MOVEMENT		FORM	
A	B	A	B	C	A	E	A	B	A	B
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										
11.										
12.										
13.										
14.										
15.										
16.										
17.										
18.										
19.										
20.										

[illegible]

APPENDIX V

Selected examples of fingerpaintings

The following photographs are examples selected by the writer from over 600 paintings to show the various descriptions included on the fingerpainting evaluation sheet (see Appendix No. III). The category of color is omitted in these scorings. Repetitious scoring elements are not listed; thus each photograph is only partially scored. The descriptive examples of scoring listed at the end of this appendix provide the reader with a convenient reference for understanding the evaluation sheet.

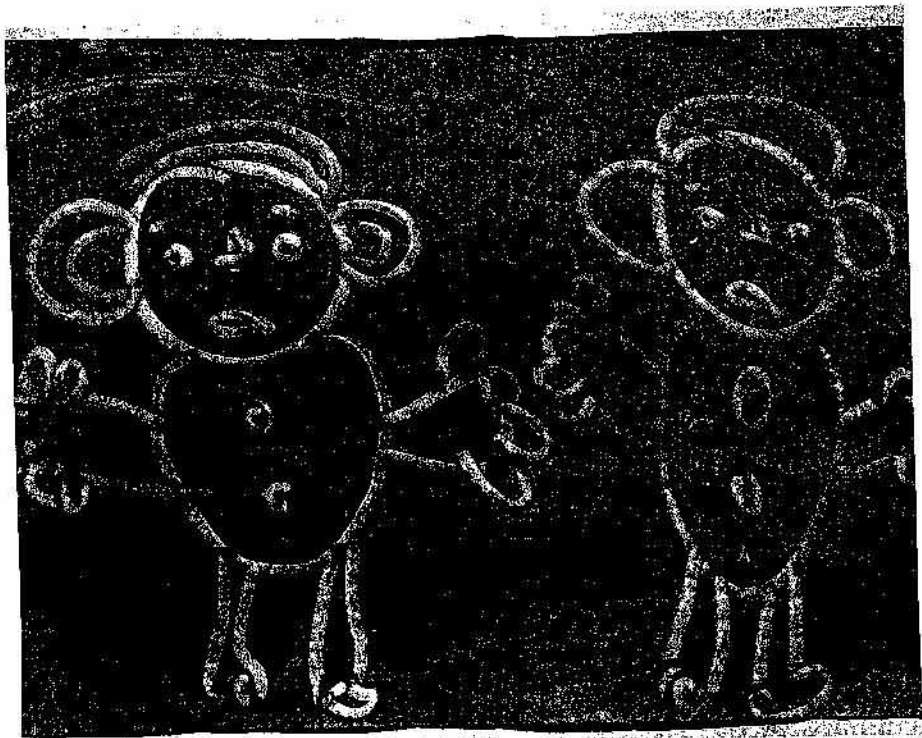


Figure 1

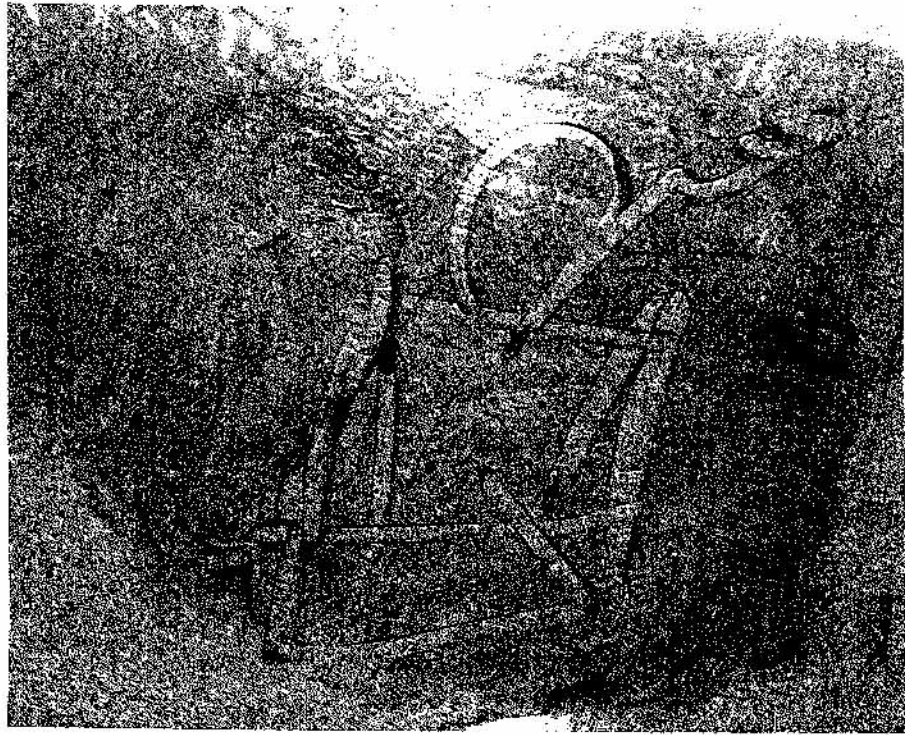


Figure 2

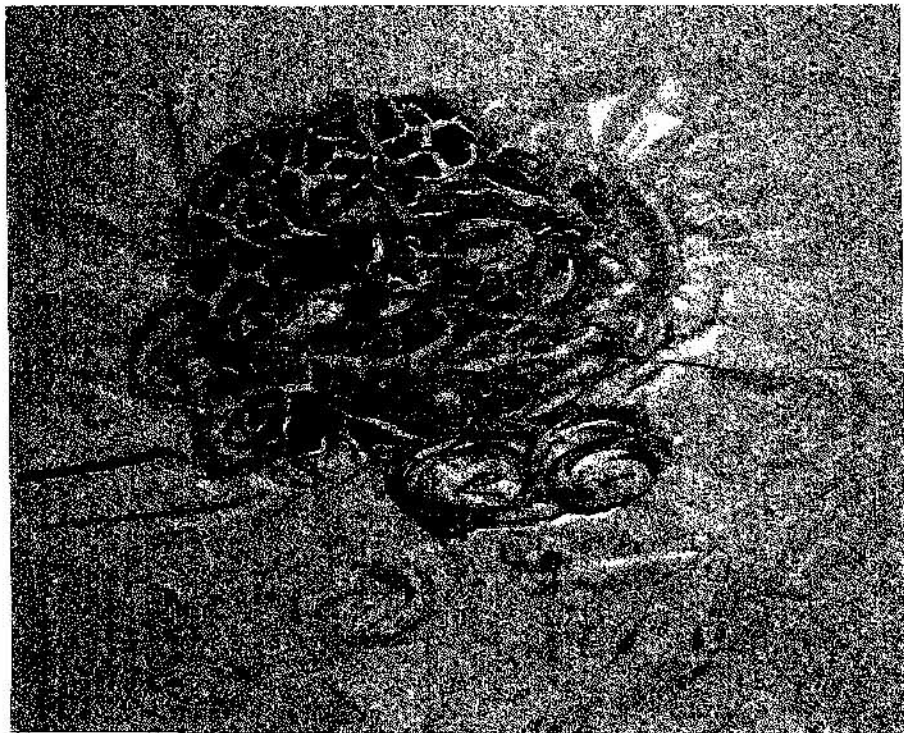


Figure 3



Figure 4

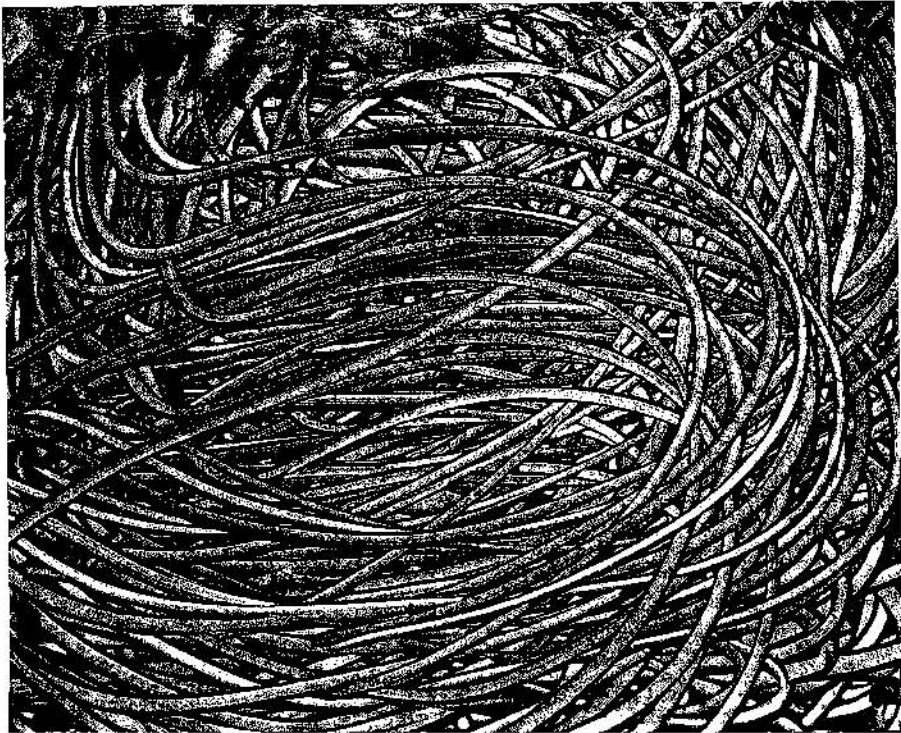


Figure 5

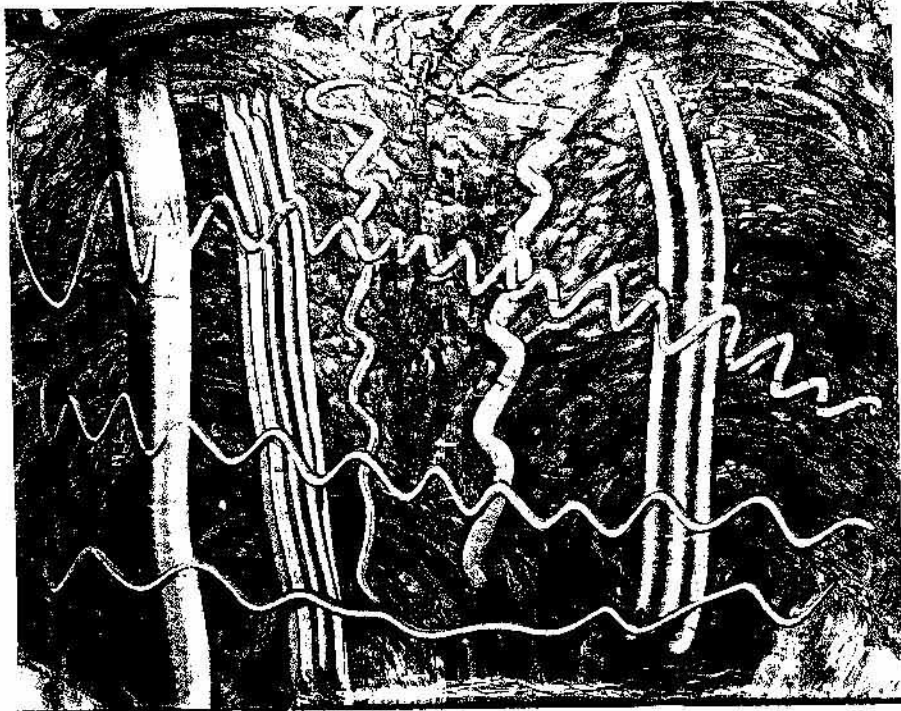


Figure 6

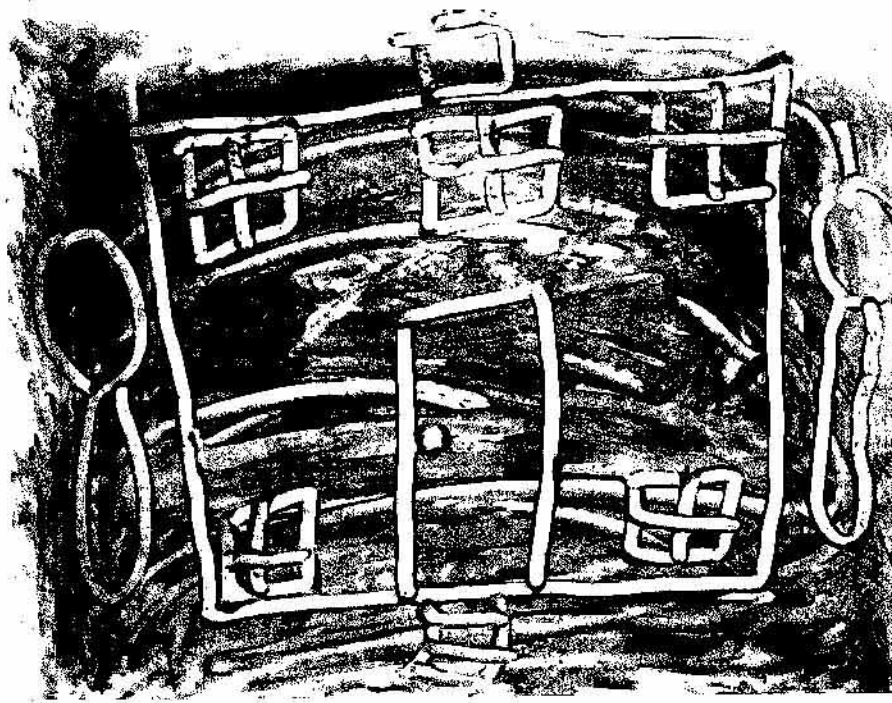


Figure 7

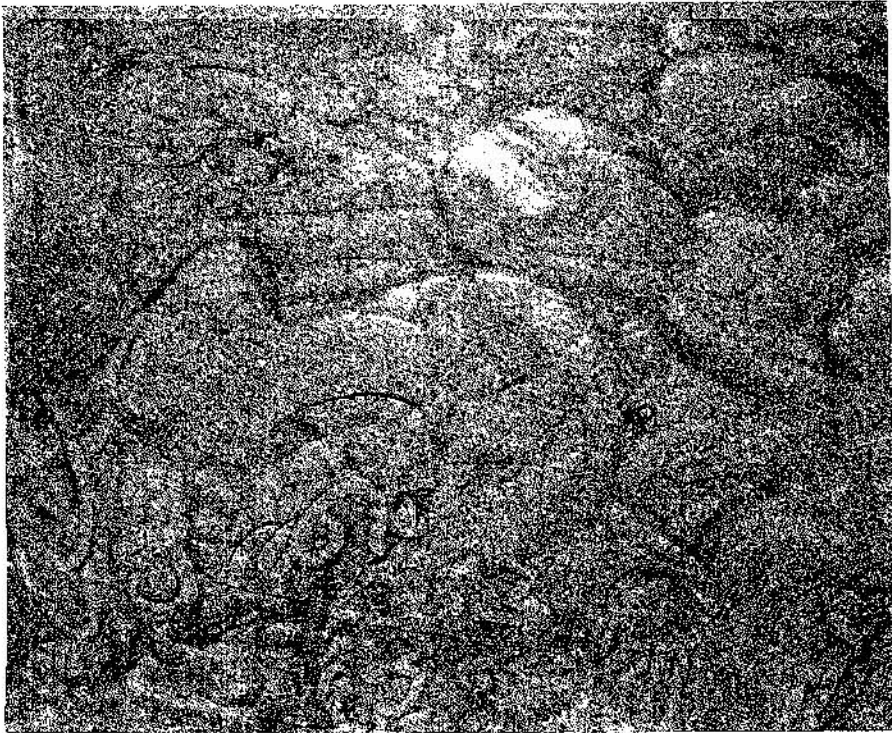


Figure 8



Figure 9

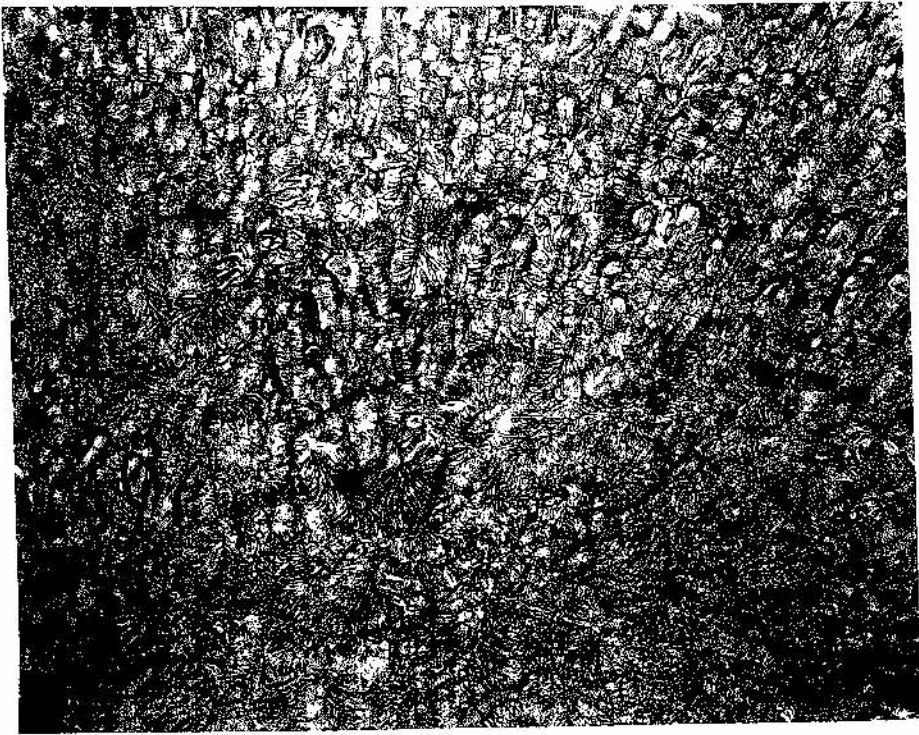


Figure 10

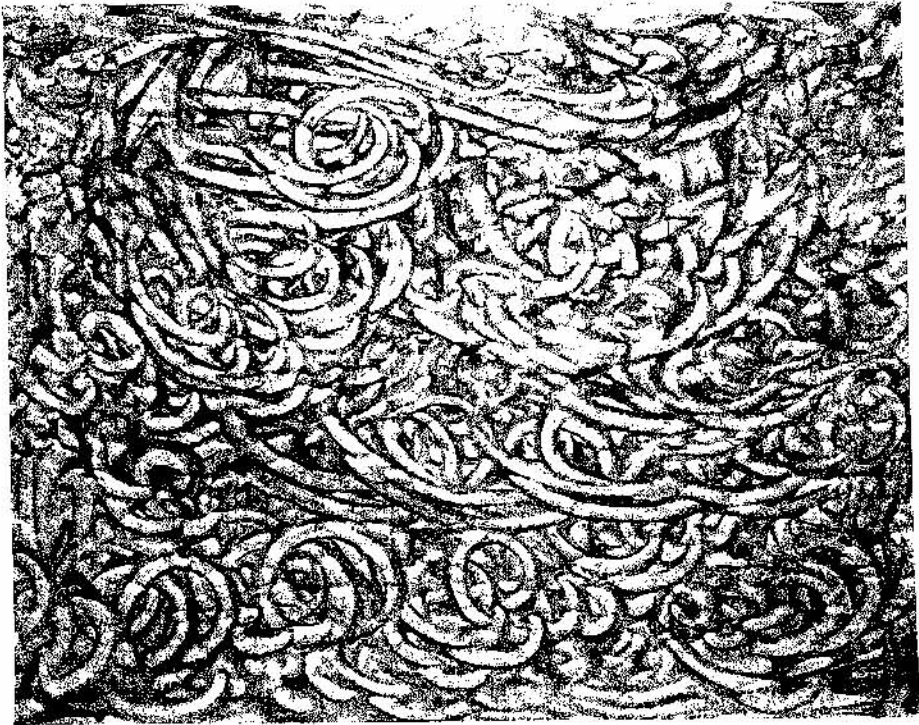


Figure 11

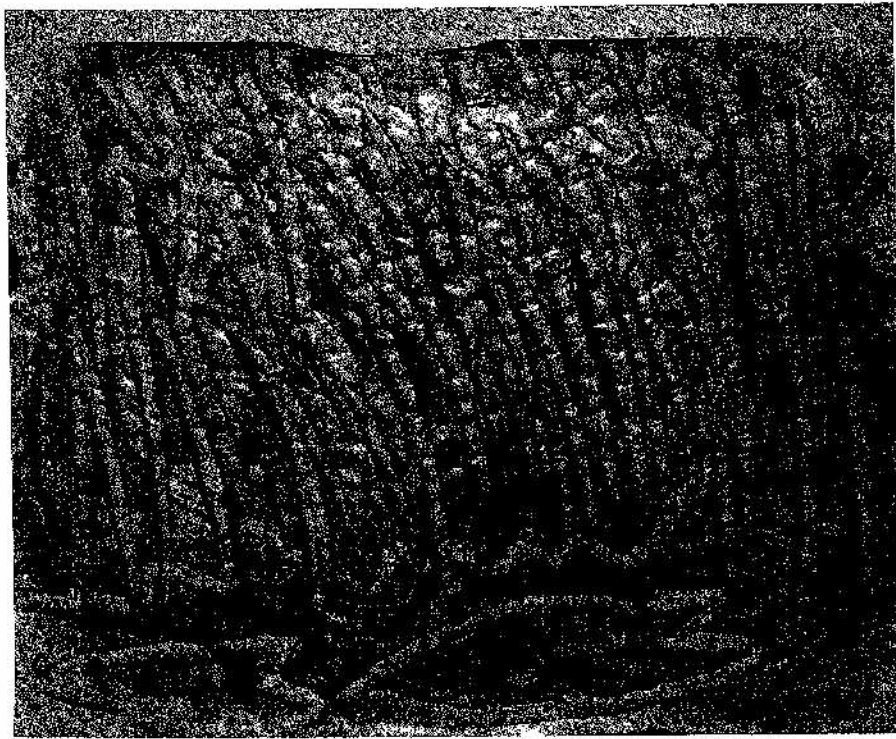


Figure 12

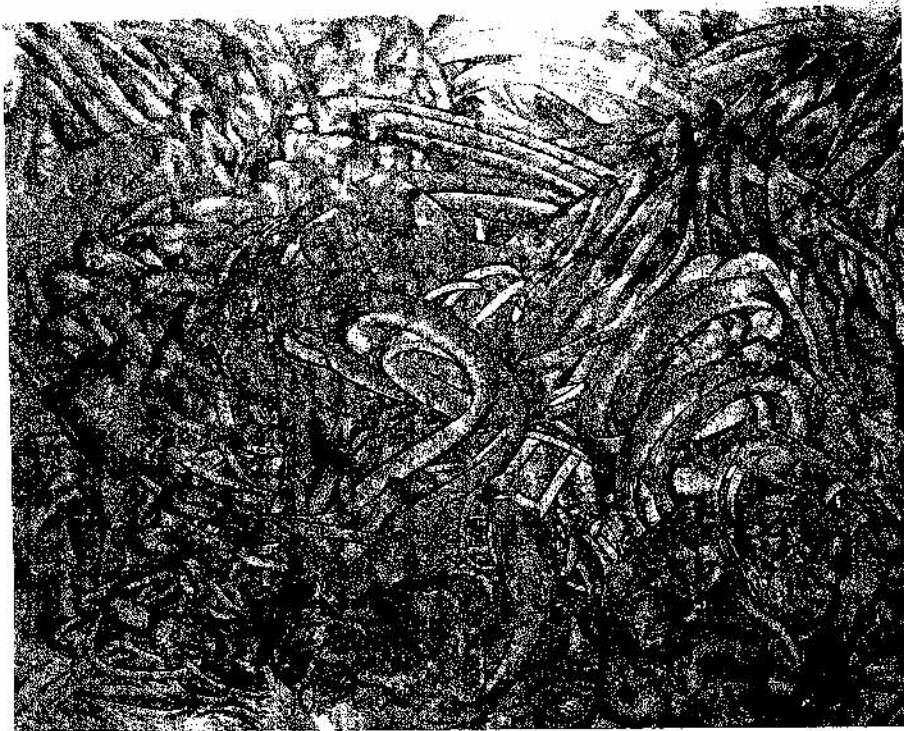


Figure 13

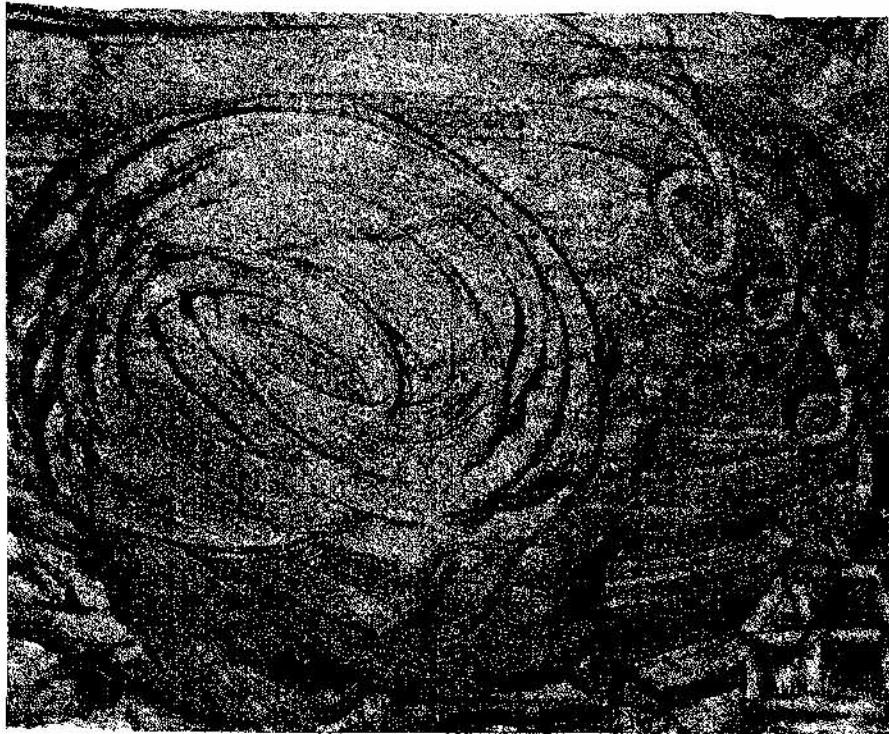


Figure 11.

- Fig. 1: SHADING (Item 1) Smooth surface texture;
(Item 4) Flat degree of shading.
- Fig. 2: SHADING (Item 1) Rough; (Item 2) Thin surface texture; (Item 3) Faint degree of shading.
SPATIAL RELATIONSHIPS (Item 6) Isolated design in $\frac{1}{4}$ painted area; (Item 7) Center emphasis area.
MOVEMENT (Item 10) Medium; (Item 11) Diagonal; (Item 12) Angular lines; (Item 13) Disconnected marks with isolated integrated form; (Item 14) Heavy strokes.
FORM (Item 15) Fairly distinct, distinct clarity of design; (Item 16) Symbolization unrelated: Geometric, circular object - people...no order in space or relationship to each other.
- Fig. 3: SHADING (Item 1) Lumpy; (Item 2) Thick surface texture; (Item 4) Depth in degree of shading.
SPATIAL RELATIONSHIPS (Item 5) Edges bare ($\frac{3}{4}$ space used); (Item 6) Design in $\frac{1}{2}$ painted area; (Item 7) Top (upper $\frac{1}{2}$ page) emphasis area.
MOVEMENT (Item 10) Short; (Item 11) Circular; (Item 12) Rounded lines; (Item 13) Unrelated interrupted marks as strokes used.
FORM (Item 15) Scribbling, indefinable clarity of design; (Item 16) Disordered, bizarre, meaningless repetition in design symbolization.
- Fig. 4: SHADING (Item 1) Varied surface texture.
SPATIAL RELATIONSHIPS (Item 5) Perimeter or center ($\frac{1}{2}$ & less) use of page; (Item 6) No design attempted in use of painted space.
MOVEMENT (Item 10) None, in type lines used; (Item 13) No definite marks as strokes used.
FORM (Item 15) Smearing, scrubbing, no definite marks in clarity of design.
- Fig. 5: SHADING (Item 2) Medium surface texture.
SPATIAL RELATIONSHIPS (Item 5) Whole (all space used) in use of page; (Item 6) Design covers all painted area; (Item 7) All over ($\frac{3}{4}$ $\frac{1}{4}$) in emphasis area.
MOVEMENT (Item 10) Long lines; (Item 13) Continuous related marks as strokes used.
FORM (Item 16) Controlled: Purposive repetition in design symbolization.

- Fig. 6: SHADING (Item 3) Dark
SPATIAL RELATIONSHIPS (Item 6) Design covers
3/4 area in use of painted space.
MOVEMENT (Item 11) Vertical lines; (Item 12)
Wavy lines.
FORM (Item 16) Abstract design (integrated and
planned use of space).
- Fig. 7: SPATIAL RELATIONSHIPS (Item 5) Partial whole
3/4 \neq not whole) use of page.
- Fig. 8: SPATIAL RELATIONSHIPS (Item 7) Bottom (lower
1/2 page) as emphasis area.
MOVEMENT (Item 14) Light strokes used.
- Fig. 9: SHADING (Item 3) Intermediate
SPATIAL RELATIONSHIPS (Item 7) Edge-perimeter-
side as emphasis area.
MOVEMENT (Item 11) Horizontal lines; (Item 13)
Related interrupted marks (integrated form).
FORM (Item 15) Accurate, meticulous clarity of
design; (Item 16) Detailed representation
or drawing-overlapping of objects...writing
may be included, in design symbolization.
- Fig. 10: MOVEMENT (Item 11) Indefinable; (Item 12)
Indefinable lines; (Item 13) Disconnected marks
(daub, dotting, pressing) as strokes used.
- Fig. 11: MOVEMENT (Item 12) Spiral lines.
- Fig. 12: MOVEMENT (Item 12) Straight lines.
- Fig. 13: MOVEMENT (Item 12) Mixed lines; (Item 14)
Scratched-torn paper in strokes used.
- Fig. 14: FORM (Item 16) 3-dimensional: Diminishing sizes
of distant objects, light and shadow effect in
design symbolization.

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