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THE EFFECT OF PSYCHOTHERAPY ON THE SCHIZOPHRENIC'S HUMAN PERCEPT: A STUDY OF OBJECT REPRESENTATIONS IN SCHIZO - PHRENIA

presented by

DAVID LEE GREEN

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Psychology

Major professor

Date 1/5/84

THE EFFECT OF PSYCHOTHERAPY ON THE SCHIZOPHRENIC'S HUMAN PERCEPT: A STUDY OF OBJECT REPRESENTATIONS IN SCHIZOPHRENIA

By

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A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Psychology

1984

ABSTRACT

THE EFFECT OF PSYCHOTHERAPY ON THE SCHIZOPHRENIC'S HUMAN PERCEPT: A STUDY OF OBJECT REPRESENTATIONS IN SCHIZOPHRENIA

By

David Lee Green

Thirty three schizophrenic patients randomly assigned to three treatments, psychotherapy only, psychotherapy plus medication, and medication only, were assessed before treatment, at six months, at 12 months, and at 20 months as part of the Michigan State Psychotherapy Project. Research data were scored for level of object representation on the Krohn and Blatt scales. The Krohn and Blatt object representation scales were so highly correlated ($r = .90$) that it was concluded that they measure the same construct. It was hypothesized that the level of object representation should improve with psychotherapy. Of the three groups, only the group receiving both psychotherapy and medication showed an improvement in the articulation and organization of realistic object representations. Both this group and the medication-only group showed a decrease in the articulation and organization of unrealistic object representations. The differences between the three groups, however, fell short of statistical significance. Patients of experienced therapists showed more organization and articulation of

realistic object representation than patients of inexperienced therapists. However, the object representation scales did not correlate with clinical status interview ratings of emotional health. Unlike a previous study, paranoid schizophrenics were not found to differ from non-paranoid schizophrenics in either level or change in object representation.

ACKNOWLEDGMENTS

In memory of my father, Eugene Green (1919-1983), I would like to thank two people whose support and criticism made this work possible, my Chairperson, Dr. Bertram Karon, and my wife, Dr. Carolyn Manson. Dr. Karon's clinical and research work has long been an inspiration to me. His sensitivity to the life of graduate students is no less remarkable.

I would also like to thank my Ph. D. Committee. All three members, Drs. John Hurley, Norman Ables, and Bertram Stoffelmayr, were supportive and helpful throughout the writing of this work. More importantly, all three of these psychologists are excellent psychotherapy researchers, as I strive to become.

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued) Page

TABLE OF CONTENTS (Continued) Page

LIST OF TABLES

INTRODUCTION

Research in the psychotherapy of schizophrenia is shrouded in pessimism. In a review of the literature, Hollon and Beck (1978) concluded that drugs alone are the most effective method of treating schizophrenics. Smith, Glass and Miller (1980), reviewing the same literature, concluded that drugs plus psychotherapy provided a more effective treatment than either psychotherapy only or drugs only. With a few exceptions (Karon and VandenBos, 1980), other authors reviewing the same literature concur in the view that psychotherapy adds only negligibly to the treatment of schizophrenia (Klein, Gittleman, Quitkin, & Rifkin, 1980; May, 1975).

Recently, Gunderson and Gomes-Schwartz (1980) have looked at exploratory psychotherapy with schizophrenics from a more optimistic angle. These authors suggest that change occurring due to exploratory psychotherapy is seldom measured properly. The best way to measure change from exploratory psychotherapy, they suggest, is to evaluate improvement from the patient's vantage point. Gunderson and Gomes-Schwartz (1980) argue in favor of the patient's perspective based on a preliminary study of exploratory

psychotherapy with schizophrenics. They argue that outcome studies relying on traditional measures of improvement, i.e., discharge and recidivism rates, fail to document significant areas of change. Since these traditional measurements are taken from the perspective of third parties, they usually bear on sign and symptom change, and not on changes in the patient's experiences of self and interpersonal relationships. Moreover, they argue that the enhancement of life via increased self-understanding is the goal of exploratory psychotherapy: fulfillment of this goal needs to be measured more accurately with instruments that reflect the patient's perspective.

The present study, using data from the Michigan State Psychotherapy Project (Karon and VandenBos, 1980) (one of the few studies reporting positive findings for the effect of psychotherapy on schizophrenics), extended Gunderson and Gomes-Schwartz' (1980) search for more appropriate outcome assessment in exploratory psychotherapy with schizophrenics, and encompassed also a more widespread concern: the concern for greater "specificity." Regarding "specificity," Hans Strupp (1978)[1] and other notable psychotherapy (Kiesler, 1967) researchers (Kiesler, 1967; APA Commission on Psychotherapy, 1982) have long called for a change in the focus of inquiry away from the global question, "Does psychotherapy work?" and towards more exacting questions such as, "Does this specific form of psychotherapy help this defined class of patients, under

these circumscribed conditions, and most significantly, for these specified problems?" In psychotherapy studies of schizophrenia (Hollon and Beck, 1978), these questions regarding "specificity" have rarely been addressed. The present study used the suggestion of Strupp (1978) and of Gunderson and Gomes-Schwartz (1980), and addressed some of these questions as it assessed the effect of an exploratory type of treatment on the schizophrenic's experience of self and of others. In accord with Strupp, the specified form of treatment, a modified form of psychoanalytic therapy (Karon and VandenBos, 1981), which aimed at, among other things, helping schizophrenics differentiate their experience of self and others, was assessed in terms of a specific and appropriate outcome, the level of differentiation of self and others the patient shows on Rorschach object representation measures.

The patient's object relations, and changes occurring in them, were assessed in this study through looking at the human percept on the Rorschach, before and after treatment. Evaluating the human percept is one way to look at changes in object representations on the Rorschach. According to theorists, the human percept reflects the patient's internal models or concepts of other people and self, and changes in the human percepts reflect changes in such models and concepts (Blatt and Lerner, 1983; Blatt, Wild, & Ritzler, 1976a; Lerner, 1983; Mayman, 1967; Urist, 1973).

These changes in the human percepts were assessed both qualitatively and quantitatively. The Krohn scale, a qualitative measure, was used to assess the level of development of affective themes in the patient's perceptions of humans (Krohn and Mayman, 1974). The Blatt scale, a more quantitative measure, was used to assess the level of cognitive maturity in the patient's "concept of the object" (Blatt et al., 1976a; Blatt, Brenneis, Schimek, and Glick, 1976b). The Krohn and Blatt scales were chosen to be used here from among a variety of recently developed Rorschach scales designed to assess the patient's developmental level of object relations (Blatt and Lerner, 1983; Kwarer, Lerner, Lerner, and Sugarman, 1980). In line with recent trends in psychoanalytic theory (Kernberg, 1975; Kernberg, 1976; Masterson, 1976; Meissner, 1981), many of these scales were designed to understand primitive and, especially, borderline personalities, their defenses, and their object representations. Paralleling developing trends in psychoanalytic writing (Schafer, 1968; Schafer, 1976), these scales attempt to capture on a more experiential level the patient's perception of self and of others. Along with other object representation scales (Kwarer et al., 1980), the Blatt and the Krohn measures have been applied to diagnostic, developmental, and psychotherapy outcome studies. Positive findings from these sources amply support the construct validity of "object representations."

The Krohn and the Blatt scales were used by Schwager and Spear (1981) to clarify some of the changes that exploratory psychotherapy can accomplish with schizophrenics. Using the test-retest records of 10 consecutively admitted schizophrenics treated intensively with psychoanalytically oriented therapy, they examined changes in object representations as well as changes in other ego functions. Their discussion of the contrast between changes they found on object representations and changes they found in less specific Rorschach measures of ego functioning sheds interesting light on how useful object representations can be. To assess general ego functioning, they used Schafer's (1955) Rorschach indices of impulse and affect modulation and also his measure of thought organization. Interestingly, these more traditional measures of ego functioning did not show evidence of patient change.[2] According to these indices, the patients had not improved. When they examined the Blatt and Krohn scale measures, however, on similar intra- and inter-group comparisons, they did find evidence of patient change. Furthermore, their findings were consistent with the expectations of most object relations theories of change.

The comparisons were between two diagnostically distinct groups of schizophrenics: paranoid versus non-paranoid or undifferentiated schizophrenics. The patients were tested within one month after admission and

then again at discharge, 12 to 18 months after admission. At retest, on the Blatt measure, the paranoid patients showed significantly less object differentiation, but the non-paranoids showed greater differentiation than they showed earlier on the first testing. If one takes an object relations oriented viewpoint, one assumes that paranoid patients, on a defensive level, have overly-defined boundaries between themselves and others (Meissner, 1978; Searles, 1962). One also assumes that effective treatment should, at least temporarily, loosen up these boundaries to allow dissociated feelings to be integrated (Spear and Hymowitz, 1981). Using these assumptions, the results of this testing may reflect a desirable therapeutic effect. The results from the non-paranoid schizophrenics in this study appear to reflect similarly desirable therapeutic change from the object relations viewpoint. These patients can be thought of as having severe problems in blurring and merging their experience of the boundaries between themselves and others (Searles, 1959). Diminished blurring of boundaries resulting from psychotherapy would seem to be reflected in these authors' report of increased differentiation on the Blatt scale after treatment. The changes found on the Krohn measure were also consonant with this interpretation of opposite yet desirable change for these two groups of schizophrenics.

Data from the Michigan State Psychotherapy Project (Karon and VandenBos, 1970, 1972, 1981) was used in the present study to extend the findings of Schwager and Spear (1981). The present study investigated several interrelated hypotheses about what changes schizophrenics show in their Rorschach object representations after psychotherapy. Among many methodological weaknesses, Schwager and Spear's study had a very small sample, lacked comparative treatments, and was limited to analysis of outcome at two points in time (admission and discharge). The Michigan State Psychotherapy Project, a comparative treatment study of schizophrenia, provides more informative data because the methodology used in the study avoids many of the methodological problems in the Schwager and Spear study. The Michigan State study, for example, used repeated measures (four points in time), had comparative treatment groups, had a follow-up, had a larger total sample N (33), and assessed outcome on many more criteria.

Just before closing this introduction, it is interesting to note that a previous outcome study used the Michigan State Project's Rorschach data to assess a very different constellation of ego functions. This study reported changes in ego functioning as would be predicted from the psychoanalytic theory of regression in treatment (Glatt, 1971). Although Glatt examined changes in impulse control and reality testing, he did not examine changes in object relations, which are often considered as

measures of ego functioning (Lerner and Blatt, 1983; Kernberg, 1975, 1976; Jacobson, 1964). This is true even though object relations theory informed the treatment in the Michigan State study (Karon and VandenBos, 1981).

In closing, the present study assessed change in the schizophrenic's Rorschach human percept as one facet of his object representations and related the findings to a theory of change consonant with object relations oriented theory. In addition, this study attempted to validate object relations theory of change by examining changes in object representations in treatment subgroups of schizophrenics: psychotherapy only (PO) versus medication only (MO) versus medication plus psychotherapy (MP), and paranoid versus non-paranoid patients.

REVIEW OF THE LITERATURE

Object Representations and the Rorschach

Rapaport, Gill and Schafer (1945, 1946) began using the Rorschach to systematically evaluate changes in ego functioning resulting from psychoanalytically oriented treatment. The term "ego functioning" refers to the quality of formal thought patterns, the organization of the defenses, and the ability to modulate affects and impulses (Schafer, 1955), and also to other adaptive and regressive features of the ego as dictated by psychoanalytic ego psychology (Hartmann, 1939). Recently, researchers within the psychoanalytic tradition of Rorschach interpretation (Blatt and Lerner, 1983; Lerner, 1983; Mayman, 1967) have argued that traditional ego measures on the Rorschach contribute little to understanding the patient's subjective experience of his interpersonal world. Moreover, the traditional ego-function approach ignores the contributions made by the object relations oriented theorists, such as Fairbairn (1952), Guntrip (1969), Jacobson (1964), Klein (1952), and Winnicott (1958), towards a better understanding of severe psychopathology.

Lerner (1983) criticized traditional Rorschach ego assessment for being unsuitable to evaluate and enhance understanding of the patient's experience of self and others. He has called attention to how remote ego-assessment language is from the experience level of the patient. He remarked that traditional ego-assessment language "is couched in a mechanistic, natural science framework of impersonal structures, forces, and energies . . ." (p. 314). His comments are in agreement with the opinions of many critics of psychoanalytic metapsychology, but most notably with those of Schafer (1977), who has forcefully argued that psychoanalysis needs to develop a theory and a language for human actions to replace its archaic metapsychology. In this light, it is relevant that a spate of recent studies have related Rorschach object representations to important aspects of the clinical situation: to the transference and to the patient's ability to enter a psychotherapeutic relationship (Blatt and Lerner, 1983).

Psychodynamic Definitions of the Term "Object Representation"

Psychoanalytic theorists such as Beres and Joseph (1970), Novey (1958), and Sandler and Rosenblatt (1962) believed that object representations evolve from dynamic and largely unconscious processes. As such, they are the product of the same conflicts, drives, and affects that

influence ordinary cognitions, dreams, and mental symptoms. Yet, as somewhat enduring features of the psyche, they must be distinguished from memories and sensory experiences or other short-lived perceptual events such as images (Sandler and Rosenblatt, 1962).

This viewpoint has been developed further by researchers who study object representations on the Rorschach. Hatcher and Krohn (1980) have described the "governing concept" in the developing trends of Rorschach research (those trends will be reviewed below) as follows:

> During development, especially the development of the ego by means of its relationship with others during the first five years of life, there develop a set of internal structures that reflect the individual's early experience of important others, structures that we may very roughly call mental images of people. These structures filter, select, and organize the experience of other people and the actions, thoughts, and feelings of the self. Thus, an individual's experience of others will only be as differentiated or varied as are the internal representations with which he can match them up. (Pp. 299-300)

In an impressive theoretical paper on schizophrenics' object representations integrating findings from experimental, cognitive-developmental, and psychoanalytic

psychology, Blatt et al. (1975a) theorized that object representations originate around recurrent "action-sequences" where primary caregivers either satisfy or frustrate fundamental emotional and physical needs. Blatt et al. (1976a) cite one line of empirical evidence for this in the form of research that relates frustrating care-giving relationships to the development of object constancy (in the Piagetian sense of the word "object") and person constancy (again in the Piagetian sense, that is to say, recognizing a person as the same person after they have temporarily disappeared) (Bell, 1970; Provence and Lipton, 1962). This research reported that frustrating care-giving relationships in the first months of life were associated with person constancy developing after object constancy. He cited the same research to show that the reverse is true also: that gratifying care-giving relationships are associated with person constancy developing before object constancy. This seemed to suggest to Blatt et al. (1976a) that frustrating care-giving situations lead to mental or object representations in which persons are perceived in a characteristically less constant fashion than when gratifying care-giving experiences predominate.

Blatt et al. (1975a) elaborated on the qualities of early object representations and compared them to the qualities of schizophrenic object representations. They described a perceptual-developmental process that is very similar to Werner's (1948) developmental theory of

perceptual and cognitive functioning, and they then related this theory to their research on object representations in the Rorschach. In Werner's (1948) theory, the infant perceives the world in an amorphous, undifferentiated fashion, and the infant's mental representations tend to capture primarily the undifferentiated need-gratifying or need-frustrating qualities of the environment. Blatt et al. (1976b), Blatt and Lerner (1983), and Ritzler, Zambianco, Harder, and Kaskery (1980) showed that Rorschach human percepts that are organized along the lines of Werner's primitive and immature mentation are significantly related to diagnoses of regressed pathological states and to children--that is, to persons at a hypothetically low developmental level of human perception. According to their research, as the child matures, his developing mental representations involve increasing differentiation of self and of object. In adults, an absence of this differentiation is associated with immaturity and psychopathology.

Object Representation Scales and Object Relations Theory

Kernberg's (1976) review of the object relations literature summarized that increasing maturation and mental health is accompanied by an increasing ability to internally represent significant others as unique persons having independent identities, distinct interpersonal strivings,

and, most significantly, as individuals having unique interpersonal needs. Over the last decade, research on object representations on the Rorschach has generally supported Kernberg's summary. (This research is reviewed below.) In addition, the concordance of findings using different measures and different methods to assess object representations lends the measures themselves the promise of both convergent and discriminant validity, as outlined by Campbell and Fiske (1959).

One such scale, the "Mutuality and Autonomy Scale" Urist, 1973, 1977), has provided construct support for the idea of object representations. Several studies (Urist, 1973; Urist and Shill, 1977) correlated Urist scale scores on Rorschach object representations with Urist scale scores on object representations taken from other data sources, such as autobiographical information and staff ratings of behavior. Urist (1973) developed the scale to measure the developmental level of the subjects' object relations. Raters using the scale assign a scale point to the interactions of objects (animal and human figures) on the Rorschach or to such interactions occurring in other sources of data. Subjects whose object representations reflect themes of magical control and coercion, for example, are hypothesized to be at low levels of object relations development, whereas individuals whose Rorschach object representations reflect reciprocity and mutuality are hypothesized to be at a much higher level.

In two studies (Urist, 1973; Urist and Shill, 1977), ratings taken from the Rorschach correlated with ratings taken from autobiographical material ($r = .63$), and also with ratings based on staff ratings of behavior ($r = .53$).

In a retrospective psychotherapy study of 70 children who were former inpatients, the Mutuality and Autonomy Scale was correlated positively with treatment outcome. In this study, Teuber (1983) compared 35 Rorschachs of children who were later rehospitalized, with 35 Rorschachs of children whose records indicated that they had not received any further psychiatric services. Criteria for inclusion in the latter group was that the child had been discharged at least five years earlier from the residential treatment center. When he applied the Urist scale to the Rorschachs, Teuber (1983) found a significant positive association between high object representations scores and the avoidance of rehospitalization. He also found significant associations between low object representations scores and the need for future hospitalization.

In a nearly parallel line of research, the Krohn (1974) "Object Representation Scale for Dreams" has been applied to the Rorschach. Like the Urist scale, the Krohn scale focuses on the thematic (that is, content) interpretation of object representations. For example, at level one, the human percept is filled with themes of voidness and lifelessness. Each level Krohn assumed

(Krohn and Mayman, 1974) represented a developmental advance in object representation. Raters apply these thematic levels to the human figures in the material being rated. The first study of the scale (Krohn and Mayman, 1974) demonstrated construct validity for "object representation" due to significant intercorrelations between ratings taken from dreams and ratings taken from other measures: the Rorschach and early memories. Further indications that this scale supports the validity of Kernberg's (1976) summary (stated above) came from the significant correlations Krohn and Mayman found between scores on their scale and scores on another measure of mental health, the Luborsky Health Sickness Rating Scale (Krohn and Mayman, 1974).

A correlate of Kernberg's (1976) summary is that different types of psychopathology are associated with differences in the thematic and affective qualities of internalized object representations. This tenet received partial support from a Rorschach study comparing obsessive/paranoid borderlines with hysterical/impulsive borderlines on the Krohn and Blatt measures of object representations. Spear (1978, 1981) studied 55 inpatients who were divided into groups according to DSM-11 criteria for schizophrenia, borderline, and character disorder. He further classified the patients into obsessive and hysterical character styles, along the lines described by Shapiro (1965) for classifying neurotic styles. After

the patients were sorted according to these criteria and their Rorschach object representations inspected, Spear reported, among other findings, significant differences on the Krohn scale between the obsessive and hysterical borderlines. The hysterical patients had higher scores on the Krohn scale than the obsessives. Although these findings were somewhat weakened when an analysis of covariance controlling for the correlation between the Blatt and Krohn measures was computed, this initial finding deserves further exploration, as it coincides with theoretical progress in differentiating among borderline character pathologies (Kernberg, 1975).

A less ambitious study employing the Krohn scale (Grey and Davies, 1981) examined the relationship between mental health ratings derived from a fairly descriptive interpersonal adjustment scale, the Midtown Mental Health Rating Scale, and object representation scores on the Krohn scale derived from the patient's dreams. The subjects in this study were 30 young adult females undergoing psychoanalytic psychotherapy at an urban psychoanalytic clinic. The correlation between ratings on these two scales was high (eta = .83). Given that the Midtown Mental Health scale has been shown in at least one longitudinal study to have predictive validity (Srole, Langer, Michael, Opler, and Rennie, 1962), the relationship between the object representation scores and scores on this symptom-adjustment oriented scale seem rather

impressive. Grey and Davies noted that object representations on the Krohn scale, even from as random a source as dreams, may indicate the general level of mental health.

Their finding is buttressed by Hatcher's and Krohn's (1980) study of 25 outpatients' dream ratings on the Krohn scale. They found that for patients who were rated as neurotic on the Luborsky Health Sickness Scale (scores of 50 or above), their dream object representation scores correlated with therapist ratings of the patients' capacity for intensive psychotherapy. The latter rating, made by the therapist, pertained to the patients' propensities for acting out, tolerance of ambiguity in self, etc. The Krohn scale was also positively correlated with Global assessments of psychotherapy outcome by Frieswyk and Colson (1980). They applied the scale to the Rorschachs of 35 adults, who were part of the Menninger Treatment Evaluation and Follow-Up Project (Wallerstein, 1968).

In addition to the Krohn scale, the Blatt scale was used in the present study. This scale is applied to structural properties of the human percept on the Rorschach. Blatt et al. (1976b) created the scale to measure the cognitive-affective development of internal "templates" (representations) for object relations. Three structural properties of the human response are rated by the scale: (1) "differentiation," a classification of the wholeness of the human or quasi-human percept; (2) "articulation,"

a classification of the percept according to its perceptual attributes, such as its size or clothing, or else according to its functional attributes, such as its role or its sex; and (3) "integration," the way the human percept is integrated into a context of action and interaction with other objects. These three structural aspects were derived from Werner's (1948) developmental cognitive theory of mental maturity.

Blatt et al. found (1976a) that as normal individuals approach adulthood, they give responses in which human percepts are relatively more differentiated, more articulated, and more integrated. This was discovered in a retrospective 20-year longitudinal study of normal subjects. Each subject was tested four different times between the ages of 11 and 30. The authors summarized their findings by noting a marked increase with age in the number of accurately perceived, well-articulated, fully human figures involved in appropriately integrated actions, and in the relative improvements on each of these Wernerian dimensions with age. Blatt et al. (1976a) compared this group of normals to a group of inpatient adolescents diagnosed as having a thought disorder. The authors discovered an interesting pattern in the responses of the psychotic adolescents. On well-perceived human figures (F+), the disturbed adolescents tended to show greater malevolence, passivity, and incongruous activity. These responses were at a very low developmental level on

Blatt's scale. On poorly perceived human figures (F-), however, the pattern reversed itself. The more disturbed group gave significantly more developmentally advanced human responses; these responses reflected greater articulation and integration of the object than the normals showed, despite controls for the number of responses in this category. Blatt et al. (1976a) interpreted this to mean that the psychotic patients used higher ego abilities to articulate, differentiate, and integrate when describing fantasy material, i.e., poorly perceived (F-) areas of the blot, than when describing more realistic material (F+ areas of the blot).

These findings were replicated by Ritzler et al. (1980) in a similar study comparing various groups of adult psychiatric patients on the Blatt scale. In this study, Ritzler et al. (1980) further explored the psychotic object representation pattern by comparing schizophrenic to non-schizophrenic psychotics. This comparison revealed that the schizophrenics displayed more of the psychotic pattern found by Blatt et al. (1976a): that is, the schizophrenics showed higher developmental levels on inaccurately perceived human responses than non-schizophrenic psychotics showed on inaccurately perceived human responses.

Lerner and Lerner (1982) used the Blatt scale in a comparative study of defensive structure in neurotic, borderline, and schizophrenic patients. These authors

found that borderline patients produced significantly more quasi-human and quasi-human detail responses than a neurotic group. In addition, when the borderline group was compared with the schizophrenic group, the results indicated that the borderline patients offered responses with a greater number of humans with more articulation, and more differentiation than the schizophrenics offered. These results support the developmental view of psychopathology, especially that of Kernberg (1976), which asserts that neurotics, borderlines, and schizophrenics have progressively less well-developed internal object representations. This study also showed that the human figure could be scored for borderline defenses such as "devaluation," "idealization," "projective identification," and "splitting." Using just the human figure to evaluate these defenses, Lerner and Lerner discriminated borderlines, neurotics, and schizophrenics, each from the other.

A case study reported by Lerner (1983) suggests that changes in object representation on the Blatt scale may result from psychotherapy. Lerner describes a teenage girl whose behavior was described as symbiotic, sometimes self-mutilating, given to acting out, and possibly brain damaged. On the Blatt scale, her human percepts were initially inaccurately perceived, poorly differentiated, and generally at low developmental levels. This is aptly illustrated in Lerner's report of her response to Card 3

of the Rorschach "Two cartoon people--not really people but some form of life--looks like a head and body, kind of deformed, though, [examiner's inquiry] didn't have two eyes and stuff." Her human responses exhibited remarkably more developmentally advanced features on the Blatt scale following a course of psychotherapy centered on her attachment to early malevolent objects. Lerner attributed this change in perceiving the Rorschach human figures to her acceptance of feelings of loss and to relinquishing pathological elements of her earlier attachment. It is noteworthy that subsequent to treatment this patient no longer showed any signs of being brain damaged.

Therapy and Changes in Object Representations

How to help the schizophrenic experience himself and others more realistically has been the subject of numerous discussions (Blatt, 1980; Hoedmaker, 1967; Lidz, 1973, 1980; Searles, 1965). According to psychoanalytic developmental theorists, in order to experience himself and others more realistically, an intermediate stage must take place: the schizophrenic's object representations must alter to become increasingly realistic, cohesive, and continuous. But before we can understand how to alter the schizophrenic's object representations, we have to understand why the schizophrenic's object representations became distorted in the first place.

Many psychoanalytic theorists see these distortions as defensive. In order to be healthy, the infant with a yet unformed and vulnerable identity needs a parent with his or her own realistic and autonomous identity, with whom he can have a healthy symbiosis (Mahler, 1965; Searles, 1979). If the parent has his own regressive needs to fuse (Jacobson, 1964), then the infant has a harder time relinquishing his need to fuse in the maturation process. The infant also experiences terror of his parent's intrusion on his precarious boundaries (Blatt, 1980; Jacobson, 1964). Thus, the infant, without a mature ego to modulate his responses, remains vulnerable to feeling an impending disintegration of his self due to the threat of fusion, murderous rage at the intrusion, and threat of completely destroying the other or being destroyed by the other (Klein, 1952). In order to preserve the illusion of a satisfying symbiosis (goodness) and to reject the fusion, rage, destruction, etc. (badness) that is so threatening, the infant uses the primitive defenses of splitting, denial, projective identification, and idealization. These defenses become part of his way of encoding the world and are structured into his internal object representations (Fairbairn, 1952; Klein, 1952; Kernberg, 1975). From then on, no experience occurs without being filtered through this encoding process. Stated differently, no experience occurs without being filtered through the structures of his/her split and

idealized, internalized object representations (Lerner and Lerner, 1982.)

Other psychoanalytically oriented authors write from a more interpersonal perspective about the psychotherapy of schizophrenia (Karon and VandenBos, 1981; Lidz, 1973, 1980; Sullivan, 1953, 1962). These authors emphasize the recurrent, life-long experience of aberrant relating in the schizophrenic's family. These authors report that the parents totally eclipse a more rational view of reality by continuously modeling irrational ways of perceiving and communication (Lidz, Fleck, & Cornelison, 1965; Lidz, 1973, 1980). These strange modes of communication reinforce the pre-schizophrenic's experience of living in a world of strange categories, irrational communication, and, consequently, a world where the experience of self is never allowed to mature: a world where the experience of self and others is alternately pathologically fused or else fragmented (Blatt, 1976b, 1980; Lidz, 1973).

Despite differences in emphasis on the causes of underdeveloped inner objects, both the intrapsychic and interpersonal psychoanalytic theorists accept that changes in object representations can only result from change in the experience of actual object relations. Both the interpersonal and intrapsychic viewpoints emphasize the schizophrenic's precarious sense of individuality, and the need to live on fantasized interpretations of reality.

Writers from both orientations agree that the schizophrenic patient desperately needs a therapist upon whom he can depend to understand his confusion, desperation, and rage, and upon whom he can focus his symbiotic needs without the threat of abandonment or annihilation. If the schizophrenic patient comes to trust the therapist, and to feel safe sharing his precarious senses of identity, then the therapist becomes established as a benevolent and relatively undistorted inner object (Blatt, 1980; Lidz, 1980). The theoretical intricacy of how the therapeutic process modifies the internal world of object representations is the subject of highly abstract discussions of "internalization" (Schafer, 1968; Meissner, 1981).

Meissner (1981) and Wachtel (1977) point out that psychoanalysis lacks a formal theory of learning. Without such a theory, therefore, it is difficult to construct uniform models for how one might modify object representations through psychotherapy. Hence, discussions about changing object representations must be cast within the framework of internalization theory. Very simply stated, internalization is the process whereby the psyche develops internal structures that control, regulate, and modify behaviors that were originally controlled by environmental forces (Meissner, 1981). Freud used the term "internalization" primarily when theorizing about the structuralization of the psyche. Taken from his work An

Outline of Psycho-Analysis (1940), Freud's oft-quoted passage illustrates how he saw the formation of the superego (which is in a general sense an extremely important inner object representation):

> A portion of the external world has, at least partially, been an object and has instead, by identification, been taken into the ego and thus becomes an integral part of the internal world. This new psychical agency continues to carry on the functions which have hitherto been performed by the people . . . in the external world.
> (P. 205)

Psychoanalytic theoreticians such as Meissner (1981), Schafer (1968), and Loewald (1962) have refined Freud's explanations for internalization and have applied psychoanalytic metapsychology to an understanding of the transformation of object representations. These authors generally agree that modification of the patient's internal representations result from the process of working through the patient's transference. In the psychotherapy of schizophrenia, a somewhat parallel process occurs (Karon and VandenBos, 1981). The schizophrenic endows the therapist with qualities from the patient's inner world. Distortions, projections, idealizations, and split-off feelings that can be seen in the patient's object representations become externalized in the way the patient perceives the therapist. The therapist examines, clarifies, and interprets these

distortions. If this has been done effectively, the patient internalizes a more realistic view of the therapist. Through a process of accretion, the therapist continues, so to speak, to help the patient form more secure and realistic boundaries between the patient's experience of self and others (Blatt, 1980).

The qualities and the sort of integration that one might find changed in the internal representations of schizophrenics has not been systematically examined. One can surmise, however, what changes to expect, partially on the basis of developmental theory, partially on the basis of the Rorschach studies discussed above, and partially on the basis of the changes reported by therapists, such as Karon and VandenBos (1981), Milner (1969, Rosenfeld (1965), and Searles (1963, 1979), who have extensively treated schizophrenics.

The psychodynamics behind omnipotent thinking and idealizing fantasy contribute substantially to the theory which guides psychotherapy with schizophrenics (Blatt, 1980; Karon and VandenBos, 1981; Lidz, 1980; Rosenfeld, 1965). The object relations of schizophrenics typically involve themes of omnipotent control, and themes of idealized and devalued selves and others. Usually these themes form around primitive and drive-laden images of significant others. Blatt et al. (1980) note that themes of "urgent orality or hypersexuality" predominate in the object representations of schizophrenics. The press of these

drives, according to these authors, manifests specifically on the Rorschach in "fantasies of relationships based on preformed social stereotypes." One sees these fantasies not only in Rorschach object representations, but also in object representations gleaned from clinical work.

Where these themes stem from is a question many authors address. Blatt et al. (1980) attributed the stereotyped idealizations and images of omnipotent control to the schizophrenic's restitutive efforts. They found evidence of these restitutive efforts specifically in the poorly perceived portions of the blot (F-), where the human percept is at a higher developmental level than it is on the F+ or well-perceived portions of the blot (as described above). They see these findings as corroborative of Jacobson's (1964) and Rosenfield's (1965) clinical theories of restitution in schizophrenia. According to these theorists, the schizophrenic's delusions are frequently formed around fantasies of blissful reunion with omnipotent maternal figures. Indeed, as it is so often noted by object relations theorists (Klein, 1952; Rosenfeld, 1965), the idealized, split-off, and projected wishes for an all-powerful maternal savior are at the heart of the psychotic transference. Blatt et al. suggest that it is in the F- portion of the Rorschach human percept that schizophrenics manifest these active efforts towards restitution just as Jacobson (1964), Klein (1952), and Rosenfeld (1965) describe.

All of these authorities observe that the therapeutic relationship necessarily entails working through and clarifying distortions based on these themes of omnipotence and idealization. Karon and VandenBos (1981) maintain that schizophrenics need to see the therapist as ominpotent in order for treatment to begin, but that when treatment is progressing, the therapist must slowly become an equal in the eyes of the patient. Lidz (1980) suggests, however, that the therapist should from the very start emphasize his limitations and separateness. Blatt et al. (1980) add to Karon's view and say that the idyllic, blissful, and simplistic fantasies play a vital role in the schizophrenic's sense of security. As suggested by the Rorschach findings, these fantasies are constructed with the schizophrenic's highest cognitive abilities to articulate, integrate, and experience.

According to Blatt et al. (1980), the vicissitudes of the transference in regard to the patient's idealized images of the therapist are noteworthy. At first, the patient hides from the therapist his idealized images. He does not yet trust the therapist and therefore has greater need to sequester his restitutive fantasies of an all-powerful savior from the yet untrusted and threatening therapist. Eventually, the schizophrenic patient begins to trust the therapist more, and thereby the patient projects onto the therapist his island of security. The transference begins to reflect the patient's

idealized images. Later, in treatment, the therapist confronts the unrealistically idealized transference and helps the patient substitute a more real differentiated and trusting relationship for his previously magical thinking. The therapist's efforts are aimed, at this point in the therapy, at working through the idealized and omnipotent distortions underlying the transference. The central task becomes mourning the painful memories of earlier maternal empathic failures and relinquishing the restitutive efforts made in response to these failures. Until this time in treatment, these empathic failures have been warded off from awareness by means of the primitive distortions, most of which can be seen in the schizophrenic's delusions.

It was useful in this study to surmize that when treatment was successful, based on the above, object representations of idealized figures (distorted F-percepts) would, theoretically, lose their prominence. Interestingly, in accord with Blatt's description of successful treatment, we theorized that the Rorschach would reflect these changes throughout. Specifically, the Rorschach human percepts would show a reversal in the "psychotic pattern" observed by Blatt et al. (1976b) and by Ritzler et al. (1980). That is, ironically, the developmental level of the human figure on poorly perceived portions of the blott would lose some of its more advanced features. As the patient had less investment in escape

from reality and in restitution for very painful reality, poorly perceived human figures would decrease in numbers and in sophistication (on the Blatt scale).

Schizophrenics, perhaps more than all other groups of patients, have been described as lacking in a basic feeling of humanness (Karon and VandenBos, 1981; Searles, 1979). Searles (1979) and Milner (1969) illustrated this through case histories of schizophrenics undergoing intensive long-term psychotherapy. They describe how amorphous and inhuman the schizophrenic's experience of his body is at the start of treatment. When treatment is successful, the schizophrenic, according to Searles, feels less and less like an alien or a part-human and identifies less with the nonhuman world. When treatment is successful, the patient's problems become more human, that is, more neurotic than otherwise (Karon and VandenBos, 1981). On the Rorschach, this would translate into greater articulation and integration of the well-differentiated human percept (F+). This improvement from psychotic concerns to neurotic concerns would also be reflected in higher developmental interpersonal themes on the Krohn scale.

In the present study, the diagnosis for schizophrenia was based on psychodynamic considerations, as described above. Thus, the "schizophrenics" treated in this study showed a chronic history of impaired interpersonal relations, and were in many other ways typified by

internal fragmentation and thought disorder, which has been described so vividly by Searles (1965) and by other writers from the interpersonal school of dynamic psychiatry. From this perspective, schizophrenia is primarily a social "illness" rather than a medical or primarily biological disease.

HYPOTHESES

1. Schizophrenics treated with psychotherapy and compared pre- and post-treatment will show:
   A) A significant increase on the Blatt developmental scale ratings on well-formed human percepts (F+).
   B) Significant decreases on the Blatt developmental scale ratings on poorly formed human percepts (F-).
2. Schizophrenics treated with psychotherapy and compared pre- and post-treatment with schizophrenics who were not treated with psychotherapy will show:
   A) Significantly greater increased scores on the Blatt developmental scale ratings on well-formed human percepts (F+).
   B) Significantly greater decreases in the Blatt developmental scale ratings on poorly formed human percepts (F-).
3. Schizophrenics treated with psychotherapy and compared pre- and post-treatment will show significant increases on the Krohn scale, that is, the affective and thematic ratings on the human percept will indicate a higher developmental quality.

4. Schizophrenics treated with psychotherapy and compared pre- and post-treatment with schizophrenics who were not treated with psychotherapy will show significantly greater increases on the Krohn scale, that is, the affective and thematic ratings on the human percept will indicate a higher developmental quality.
5. The experience level of the therapist will be associated with changes in object representation scores for F+ and F- data.
6. Paranoid schizophrenics treated with psychotherapy will show a significant tendency for their scores on the Blatt developmental scale to fall during the middle stage of therapy and then to improve over their original level at follow-up.
7. Paranoid schizophrenics treated with psychotherapy will show a significant tendency for their scores on the Krohn scale to fall during the middle stage of therapy and then to improve over their original level at follow-up.
8. Non-paranoid schizophrenics treated with psychotherapy will show a significant linear trend toward increased scores on the Blatt developmental scale over time.
9. Non-paranoid schizophrenics treated with psychotherapy will show a significant linear trend toward increased scores on the Krohn scale over time.

10. Object representation scores on F+ percepts will be linearly correlated in a positive direction with clinical status ratings at each of the testing intervals.

METHOD

Selection of Subjects and Assignment to Groups

The sample of 33 schizophrenics whose Rorschachs were analyzed as part of the Michigan State Psychotherapy Project (Karon and O'Grady, 1969) served as subjects in the present study. These participants were selected from among the first admission inpatients at the Detroit Psychiatric Institute (DPI), an institution servicing a primarily poor, inner city, black clientele. Table 1 shows the patient characteristics of the schizophrenics used in the present study. These patients were selected as follows: Preliminary case histories and full medical evaluations were completed before treatment group assignment on approximately 35 patients per week. Each week during a four-month period, three patients with similar pathology were selected and then randomly assigned to one of three treatment groups: psychotherapy alone, psychotherapy with medication, or the hospital comparison group. Research assistants (those not administering treatment) assigned patients to groups and selected the participants according to the following criteria: (a) unquestionable schizophrenia, (b) onset of psychotic symptoms within

Table 1

Patient Characteristics of Final Sample (n = 33)

Characteristic	Group A		Group B		Pooled	Hospital
	Supervisor	Trainees	Supervisor	Trainees	Experimentals	Comparison
Sex						
Male	1	2	1	6	10	5
Female	2	4	3	2	11	-
Race						
Black	2	6	3	5	16	9
White	1	0	1	3	5	3
Education						
Grades 1 to 5	0	1	0	0	1	1
Grades 6 to 9	0	2	0	3	5	1
High School (incomplete)	2	0	2	2	6	5
High School (complete)	1	3	2	2	8	4
University (incomplete)	0	0	0	1	1	1
IQ (Thorndike-Gallup)						
0 to 80	0	3	1	5	9	2
80 to 90	2	2	2	0	6	7
90 to 110	1	0	1	3	5	3
110 to 120	0	1	0	0	1	0
120+	0	0	0	0	0	0
Previous Hospitalization as Known at End of Project						
None	1	4	4	6	15	9
0 to 14 Days	0	1	0	1	2	2
15 to 28 Days	1	1	0	1	3	1
29 to 42 Days	0	0	0	0	0	2
43+ Days	1	0	0	0	1	0

From Psychotherapy of Schizophrenia: The Treatment of Choice by B. P. Karon and G. R. VandenBos, 1981. New York: Jason Aronson. Copyright 1981 by Jason Aronson. Reprinted by permission.

three months of admission, (c) no signs of organic contributions to the psychoses, (d) no history of alcohol or drug addiction, (e) no history of electroshock therapy, and (f) no prior psychiatric admissions. The principal investigators (Karon and VandenBos, 1981) noted that although these selection criteria were strictly applied, many of the subjects had even more serious pathology than detected at the time of subject selection. As treatment progressed, it became apparent that many of the subjects had been psychotic far longer than the three-month criteria. Indeed, treatment revealed that one-third of the patients had prior psychiatric hospitalizations and three patients had organic complications, as discussed below. (For a more detailed description of subject selection see Karon and VandenBos, 1981, pp. 385-390).

Subject Attrition and Administrative Complications

As reported in Karon and VandenBos (1981), two out of what was originally 36 schizophrenic subjects died, both from undiagnozed embolisms. One, patient, whose death occurred before randomization, was replaced. The other patient, a member of the non-medication group (Group A) died after therapy began and was not replaced; replacing her would have contaminated the randomization procedure. In fact, as aspects of her history came to light, it appeared that she would have been disqualified for three additional

reasons: (a) she had been addicted to heroin, (b) she had a history of ECT treatments, and (c) she abused alcohol. A third patient, who had an impaired gait and other motor abnormalities, was later diagnosed as having multiple sclerosis (MS). Since her MS symptoms seemed to follow a course separate from her schizophrenic symptoms, the principal investigators included her data in the final analysis. (The authors report that analyses excluding her data did not materially alter the findings.) A fourth patient, who complained of visual hallucinations of colored animals, was dropped from the data analysis when his therapist discovered that he had been abusing brain damaging quantities of seconal, dexedrine, benzedrine, nutmeg, and other substances. Finally, one other patient's data was excluded from the final analysis because staff interference in his treatment resulted in his being transferred to another hospital. (For a more detailed explanation of subject attrition, see Karon and VandenBos, 1981, pp. 385-390.)

Clinical Status Interviews

A psychoanalytically trained psychiatrist interviewed each of the patients at four intervals corresponding to the intervals set up for psychological testing. This psychiatrist was blind to the treatments given to the patients. All psychiatric interviews were tape-recorded and later rated by two graduate students in clinical

psychology. Both students were blind to the treatment administered to the patients. (In addition, portions of the tape had been deleted if they contained references to the type of treatment the patients received.) These graduate students were instructed to integrate 11 criteria into an overall mental health rating. The criteria employed were: (a) ability to take care of self, (b) ability to work, (c) sexual adjustment, (d) social adjustment, (e) absence of hallucinations and delusions, (f) relative freedom from anxiety and depression, (g) amount of affect, (h) variety and spontaneity of affect, (i) satisfaction with life and self, (j) achievement of capabilities, and (k) benign rather than malevolent effect on others.

To integrate these criteria and to arrive at an overall mental health rating, the graduate students employed a scaling technique described in a separate paper by Karon and O'Grady (1970). Interjudge reliability between the clinical status raters was .82. Internal consistency as measured by intrajudge reliability for the two raters was .83 and .37, respectively. The predictive validity of this Clinical Status rating is indicated by the negative correlation found between the number of days of hospitalization during the six months following each Clinical Status Interview and the rating itself (-.71 for T1 and -.64 for T2), even though this interview was not part of the data available to the ward staff. (See

Appendix 1 for a copy of the Karon and O'Grady paper describing the rating procedure used for the clinical status of each patient.)

Psychological Testing

All patients were tested as close to the time of admission as possible (usually one to three weeks after admission), just prior to being randomly assigned to one of the three treatment groups. The Rorschach, the TAT, and several tests of intelligence were administered on the same day to each subject. All subjects were tested four times: first, within a few weeks of admission (T1), second, six months later (T2), third, 12 months later (T3), and fourth, 20 months later (T4). Using standardized conditions, the same doctoral student administered all of the Rorschachs except for those given at T4, at which time another doctoral student in clinical psychology administered most of the remaining Rorschachs.

Instruments

In addition to the clinical status ratings, the central data in the present study included the Rorschach human percepts and the diagnosis of "paranoid" or "non-paranoid." These diagnoses were based on the hospital records for the subjects. For four subjects, however, the hospital records gave insufficient information about the diagnosis. For these four cases, the present

investigator and a clinical psychologist (Scott Haas, a licensed clinical psychologist experienced in diagnosing schizophrenia), independently diagnosed the subjects after listening to the taped interviews, which were also used for the initial clinical status ratings by the previous investigators. A diagnosis was then assigned based on the judgment of the two raters.

As stated above, the human percept was scored and analyzed according to its structural and affective/ thematic features. To assess the former, the present investigator employed the Blatt scale (described in the theoretical context above). The Blatt scale assesses the maturation of the concept of the object and is based largely on the comparative developmental psychology of Werner (1948).

The Blatt et al. (1975) scoring system rests upon Werner's developmental/comparative psychological principles of "differentiation," "articulation," and "integration." "Differentiation" in the Blatt system refers to how complete a human percept is selected. The possible percepts that a subject might select on this dimension range from the most differentiated percept, the whole human response, to the least differentiated percept, the quasi-human detail. "Articulation" refers to the subject's elaboration of attributes describing a human or quasi-human response. Blatt et al. (1975) scored two types of articulation: "perceptual" and "functional." The former criterion

(perceptual) refers to such attributes as the size, clothing/hair style, and posture articulating the percept. "Functional" articulation refers to the sex, age, role, or specific identity ascribed to the human percept. Finally, the dimension of "integration" is scored for three types of human activity characterizing the human percept, "motivation of action," "object-action integration," and "integration of interaction with another object." Each of these three types of activity is indexed according to specified developmental features evident in the activity. (See Appendix 2 for a detailed description of the scoring criteria for these types of human activity, along with a copy of the complete Blatt scoring system, attached.)

In brief, scoring involves the use of an ordinal system of points for each of Blatt's three dimensions. Developmentally advanced features are placed at a higher scale value than are less developmentally advanced features. For example, a whole human response is scored 4 on the dimension of "differentiation," while a quasi-human detail on the same dimension is scored 1. Previous research has found interrater reliabilities on all of Blatt's scoring criterion to be in the range of 71-91% agreement. (Blatt et al., 1976a; Ritzler et al, 1980; Spear, 1978). At the time of the present study, a number of studies support the validity of this scale, as reviewed above.

To assess the affective/thematic aspect of the human percept, the present study also employed the Krohn "Object

Representation Scale of Dreams." As discussed above, this scale has been successfully applied to Rorschach human percepts in a variety of clinical studies. The scale assesses the developmental level of the Rorschach representations according to a seven-point scale. Each scale point represents a developmental level of object representation. (See Appendix 3 for descriptions of the scale points, along with two sample dreams. Reliabilities for the Krohn scale as applied to Rorschach was reported by Spear (1978) to be 83.1% for exact agreement by two judges using Krohn's seven-point scale.

Scoring Procedure

After the present investigator underlined the Human percept responses in the test protocols, a clinical psychologist (Scott Haas), along with an advanced graduate student in clinical psychology (Judy Larsen), rated the human percepts. Reliability was established on both the Krohn and Blatt scale after training sessions were completed. Training sessions utilized schizophrenic Rorschachs from a different source. After the raters were sufficiently practiced such that interrater reliability reached the level of previously reported estimates (about 70%), the primary rater (Judy Larsen) independently scored all of the Rorschach protocols. The total number of human percepts scored in the sample was 262. To help preserve blindness, not only of group, but also of order

of administration, protocols were assigned randomly to both judges.

Scott Haas (the secondary rater) scored two-thirds of the data for a reliability check. Interrater reliability was substantial on the Blatt scale, $r = .90$, $p < .001$, and moderate on the Krohn scale, $r = .78$, $p < .01$. Previous investigators had reported that interrater reliabilities were over 71% agreement for both the Blatt and Krohn scale (Blatt et al. 1976; Krohn and Mayman, 1974; Spear, 1978).

Units of Analysis

The principal unit of analysis was the arithmetical mean of each individual's score on the Blatt and Krohn Rorschach scales (for object representations or human percepts). According to the Krohn and Blatt scales, the lowest score that can be assigend for any human percept is one. Scores of zero were assigned to subjects who gave no human percept. The rationale was that the absence of human responses occurs more frequently in disturbed persons (Exner, 1974). Since human percepts are weighted on the Blatt and Krohn scale, and since there is evidence that the weights are linearly and positively associated with global ratings of mental health (Krohn and Mayman, 1974; Blatt et al., 1976), as previously described, it seemed reasonable to weight the absence of human percepts at the lowest end of the scale.

On both the Blatt and Krohn ratings, each individual subject's score for object representations was derived by summing the total object representation score on a given Rorschach protocol and then dividing this summed score by the number of human percepts on the protocol. This calculation gives the mean object representation score; this was the principal unit of analysis. Mean object representation scores on the Blatt and Krohn scales were also the main units of analysis in the Spear and Lapidus (1981) investigation and distinguished among various subgroups of borderline and schizophrenic patients.

An effort was made to estimate how closely the mean scores in the present sample matched those of other schizophrenic samples, specifically, the sample from Spear and Lapidus's investigation. One *t* test for independent samples was performed on the scores from the Blatt scale and a similar *t* test was conducted on the scores from the Krohn scale. The mean Blatt score for the present sample (M = 7.54) and the mean Blatt score for the Spear sample (M = 6.12) were not significantly different, $t(46) = 1.04$, $p < .25$. The mean Krohn scores for the present sample (M = 3.26) and the mean Krohn score for the Spear sample (M = 3.31) were also not significantly different, $t(46) = .08$, $p < .25$. These *t* tests were performed by using the statistics (mean, standard deviation, and n) provided by Spear and Lapidus. Taken together, the results of these

t tests suggest comparability of the present sample of schizophrenics with the Spear and Lapidus sample of schizophrenics, on these object representations scales.

In addition, it was thought that a mean or average object representation score would be the most appropriate control for response productivity. The latter refers to the biasing effect of those subjects who give an unusually high frequency of human percepts. To determine whether using the mean scores successfully controlled for response productivity, Pearson correlations were computed to test the degree of association between the Blatt mean scores at intake and at 20 months with the total number of responses to the Rorschach at intake and at 20 months for each subject. These correlations were not significant, $r(31) = .24$, $p < .15$ intake, $r(31) = .18$, $p < .25$, 20 months, suggesting that the mean score provided an adequate control for response productivity. (If this correlation had been significant, then group analyses would have required the use of ANCOVA, with the number of responses as a covariate).

Since the majority of the analyses in this study entailed only F+ data, both of these correlations were then computed on F+ data. For the Blatt F+ data at intake, the Pearson product moment correlation was not significant, $r(31) = .19$, $p < .25$; for the Blatt F+ data at 20 months, the Pearson product moment correlation also was not significant, $r(31) = .21$, $p < .25$. These same correlation

coefficients were also computed for the Krohn scores and response productivity at intake and at 20 months. For the Krohn scale at intake, this correlation between response productivity and Krohn scores was not significant, $r(31) = .22$, $p < .20$. Similarly, for the Krohn scale at 20 months, this correlation was not significant, $r(31) = .27$, $p < .15$. The same pattern of nonsignificant results also held for Krohn F+ intake data, $r(31) = .25$ $p < .15$, and at 20 months, $r(31) = .18$, $p < .25$. Meaningful correlations between response productivity and object representation scores could not be derived from the F- data because the ratings on F- data contained too many zeros to permit a meaningful Pearson product moment correlation (over 50% of subjects did not give human responses that were scored F-).

RESULTS

Intercorrelation of the Object Representation Measure

The data in this study was divided into two categories of response: (a) accurately perceived human responses, which were scored F+, and (b) inaccurately perceived human responses, which were scored F-. Each was analyzed accordingly using the Krohn and Blatt scales. The two scales correlated highly on both the F- data, $r=.88$, $p < .001$, and the F+ data, $r=.92$, $p < .001$. As discussed above, the Krohn and Blatt scales were originally designed to measure different aspects of object representations (Krohn & Mayman, 1974; Spear & Lapidus, 1981.) Their high correlations observed here, however, suggest that the two scales largely actually measured a single construct when applied to these Rorschach data. After these unexpected correlations between the Blatt and Krohn measures were found, it seemed reasonable that all predictions made separately on the Blatt ratings also should apply to the Krohn ratings. Thus, additional predictions identical to those stated for Blatt's measure but based on the Krohn scale were added to the study. (Prior to the discovery of their high correlation, all predictions

concerning the Krohn ratings were identical in every way to the predictions made on the Blatt ratings, except for one important aspect: the predictions for Blatt ratings distinguished between predicted patterns of response for F- data and predicted patterns of response for F+ data, but the predictions for Krohn ratings did not distinguish between predicted patterns of response for F+ data and predicted patterns of response for F- data. The discovery of such high correlations between the scales obviated the need to sharply distinguish the predictions according to which object representation rating scale was being used.

Tests of the Hypotheses

Hypotheses 1 and 3: Schizophrenics treated with psychotherapy and compared pre- and post-treatment will show significant increases in object representations scores for accurately perceived (F+) human percepts, and significant decreases in object representation scores in inaccurately perceived (F-) human percepts.

To test Hypotheses 1 and 3, paired *t* tests were used to compare initial evaluation data with outcome data taken 20 months later. Table 2 shows the three treatment groups' means and standard deviations on the two (F+ and F-) measures for each of the Blatt and Krohn measures at the four times of testing. Table 3 presents the results of paired *t* tests of the difference between intake evaluations and 20-month

Table 2

Means and Standard Deviations for each of the

Blatt and Krohn Measures at Four Times

Group	Months	Time 0	Time 6	Time 12	Time 20	Time 0	Time 6	Time 12	Time 20
		Blatt F+				Krohn F+			
PO (n = 9)	M	8.11	7.35	7.70	7.42	3.07	2.88	3.16	3.15
	SD	(6.83)	(7.41)	(7.11)	(6.23)	(2.60)	(2.56)	(2.54)	(2.05)
PM (n = 12)	M	6.52	8.11	6.84	8.00	2.21	3.51	3.16	3.58
	SD	(6.32)	(5.86)	(5.92)	(5.99)	(2.09)	(2.27)	(2.54)	(2.34)
MO (n = 12)	M	6.49	7.29	4.70	5.76	2.54	3.29	2.10	2.80
	SD	(6.24)	(5.11)	(5.70)	(4.24)	(2.50)	(2.03)	(2.00)	(1.90)
		Blatt F-				Krohn F-			
PO (n = 9)	M	2.33	3.78	1.72	2.22	1.11	1.17	0.39	1.34
	SD	(4.53)	(3.41)	(4.46)	(4.20)	(2.09)	(1.48)	(0.86)	(1.94)
PM (n = 12)	M	3.19	0.53	0.58	0.25	1.48	0.19	0.25	0.17
	SD	(3.34)	(1.83)	(1.37)	(0.86)	(1.70)	(0.67)	(0.62)	(0.58)
MO (n = 12)	M	5.33	1.62	2.87	2.10	2.12	0.50	1.75	0.79
	SD	(4.65)	(4.30)	(3.54)	(4.60)	(1.86)	(1.17)	(2.04)	(1.37)

Note: "PO" designates the psychotherapy-only group; "PM" designates the psychotherapy-plus-medication group. "MO" designates the medication-only group.

Table 3

Mean Scores on the Blatt and Krohn Scales at Intake Versus 20 Months Later for All Treatment Groups

Group	n	Time		t
		0 mo.	20 mo.	
		Blatt F+		
PO	9	8.11	7.42	- .38
PM	12	6.52	8.00	+ .21
PO plus PM	21	7.20	7.75	+ .44
MO	12	6.49	5.76	- .39
		Krohn F+		
PO	9	3.07	3.15	+ .14
PM	12	2.21	3.58	+2.52*
PO plus PM	21	2.58	3.40	+2.03
MO	12	2.54	2.80	+ .32
		Blatt F-		
PO	9	2.33	2.22	- .16
PM	12	3.19	0.25	-3.04*
PO plus PM	21	2.82	1.10	-2.52*
MO	12	5.33	2.10	-2.63*
		Krohn F-		
PO	9	.11	1.34	+ .30
PM	12	1.48	0.17	-2.47*
PO plus PM	21	1.32	0.67	-1.42
MO	12	2.12	0.79	-2.47*

Note: All *t* tests are two-tailed comparisons.

*$p < .05$.

evaluations for the Blatt and Krohn data. Table 3 presents the data for the two psychotherapy groups combined (the hypotheses were originally formulated with respect to all psychotherapy patients). (Herein, as shown in Tables 2 and 3, the three treatment groups will be referred to as follows: The group that received only psychotherapy will be designated by "PO," the group that received medication plus psychotherapy will be designated by "PM," and the group that received medication only will be designated by "MO.")

F+ Data: For the Blatt F+ data, Table 3 reveals that none of the groups significantly increased their mean scores in the intake versus 20-month *t*-test comparisons. The pattern on the Krohn F+ data is identical, with one exception: the PM group showed a significantly greater Krohn F+ mean at 20 months (M = 3.58) over their Krohn F+ mean at intake (M = 2.21), $t(11) = +2.52$, $p < .05$.

F- Data: Table 3 shows that the PO group did not significantly decrease their scores on either the Blatt or Krohn F- data. In contrast, both groups that received medication did reduce their scores on F- data. For the PM group, the Blatt F- mean at 20 months (M = 0.25) was significantly less than the Blatt F- mean at intake (M = 3.19) $t(11) = -3.04$, $p < .05$; the Krohn F- mean at 20 months (M = 0.17) was significantly less than the Krohn F- mean at intake (M = 1.48), $t(11) = -2.47$, $p < .05$. A similar pattern was obtained for the MO group: the Blatt F- mean at 20 months (M = 2.10) was significantly less

than the Blatt F- mean at intake (M = 5.33), $t(11)$ = -2.63, $p < .05$; the Krohn F- mean at 20 months (0.79) was significantly less than the Krohn F- mean at intake (M - 2.12), $t(11) = -2.47$, $p < .05$. It is clear from these findings that psychotherapy was not necessary in reducing F- scores. Although the pooled PO plus PM group showed a significant decrease on Krohn F- scores, an inspection of the Krohn F- means for the PO group reveals that this latter group made a negligible contribution to the pooled psychotherapy results. That is, the decrease was almost entirely due to the PM group.

Pooled F+/F- data for the Krohn scale: In order to test the unrevised predictions that psychotherapy patients (Groups PO and PM) would increase their scores on the Krohn scale (no distinction on F+ and F- data), paired t tests compared intake data with the data at 20 months. For the pooled psychotherapy sample (PO combined with PM, n = 21), the results were not significant, $t(20) = +1.27$, for the PO group, the results were not significant, $t(8) = .85$; however, for the PM group, the results were significant and in the predicted direction. For group PM, the mean at intake (M = 2.4) was significantly less than the mean at 20 months (M = 3.5), $t(11) = +1.94$, $p < .05$. These findings are the same as those on the F+ Krohn responses considered separately. (This is not surprising because there were many more F+ than F- responses.)

Hypotheses 2 and 4: Schizophrenics treated with psychotherapy and compared pre- and post-treatment with schizophrenics who were not treated with psychotherapy will show: significantly higher scores on well-formed human percepts (F+) and significantly lower object representation scores on poorly perceived human percepts.

Between-Group Differences in Outcomes on the Blatt and Krohn Measures

Four separate 1 x 2 analyses of covariance (ANCOVA) were conducted to directly test group differences in treatment effectiveness. Since there were significant linear relationships between prescores (0 months) and postscores (20 months), prescores were used as the covariate and post scores were used as dependent variables. These analyses compared outcomes obtained on the four outcome measures (Blatt F+, Blatt F-, Krohn F+, Krohn F-) by the pooled psychotherapy sample. Table 4 shows that none of these analyses of covariance reached statistical significance. Thus, Hypotheses 2 and 4 were not supported.

The previous discovery using paired *t* tests of the MO group's significant reduction in the object representation scores on poorly perceived (F-) human percepts raised the question of how potent only medication might be. To better estimate the effect of medication on F- object representation

Table 4

ANCOVA Comparisons Between Psychotherapy and Non-Psychotherapy Groups

Variable	Pooled Psychotherapy (n = 21) 20 mo. Mean*	Non-Psychotherapy (n = 12) 20 Mo. Mean	df	F	p
Blatt F+	7.75	5.76	1	.952	ns
Krohn F+	3.40	2.81	1	.83	ns
Blatt F-	1.10	2.10	1	.550	ns
Krohn F-	.67	.791	1	.366	ns

*Table means were not adjusted for intake object representation score.

scores, a three-group ANCOVA was used to simultaneously compare the MO group with the PM group with the PO group. As in the above ANCOVAs, the scores at intake were used as the covariate for the scores at 20 months. The results of this three-group ANCOVA were not significant for the Blatt F- scores, $F(2) = 1.85$, $p < .17$, but the results approached significance for the Krohn F- scores, $F(2) = 2.69$, $p < .08$. Because the results of these overall F tests on the three groups were not significant at the .05 level, further between-group comparisons are not reported.

The same three-group ANCOVAs were performed for F+ object representation scores. These ANCOVAs were not

significant and the *p* values for the *F* tests did not indicate that there might be a trend favoring a particular group, $F(2) = .87$, $p < .43$-Krohn; and $F(2) = .63$, $p < .54$ Blatt. Since these *p* values for these three-group *F* tests did not approach significance, separate two-group comparisons on F+ scores are not reported.

Pooled F+/F- data for the Krohn scale: To test the original predictions on the Krohn scale that psychotherapy patients would show greater increases on the Krohn scale than non-psychotherapy patients (with no distinctions between F+ and F- data), the means at 20 months for the two groups were compared. The original prediction stated that on the Krohn scale (F+ and F- data pooled), psychotherapy subjects (groups PO combined with PM, $n = 21$) would show greater increases than non-psychotherapy subjects (group MO, $n = 12$). An inspection of the 20-month means in Table 4 revealed that this comparison could not be significant. The psychotherapy group (PO combined with PM) mean (3.40) for the Krohn F+ data was greater than non-psychotherapy (MO) group mean (2.81), however, for the Krohn F- the non-psychotherapy group mean (.791) is greater than the psychotherapy (PO combined with PM) group mean (.67). Given that the differences between the group means for the psychotherapy and non-psychotherapy groups are in opposite directions (as seen above for the Krohn F+ data and the Krohn F- data,

respectively), pooling the F+ and F- means would not result in a greater difference between the groups.

Hypothesis 5: The experience level of the therapist will be associated with changes in object representation scores for F+ and F- data.

To determine the effect of therapists on outcome (Hypothesis 5), therapists were divided into two groups, two who had considerable experience treating schizophrenics and seven relative novices at treating schizophrenic patients. Previous research using this sample of patients and therapists (Karon and VandenBos, 1981) demonstrated the importance of the experience level of the therapist in producing an overall healthier outcome. Karon and VandenBos showed that whereas the inexperienced therapists seemed to effect specific improvements, the experienced therapists tended to produce improvements in all areas of functioning. Thus, Hypothesis 5 stated that the experience level of the therapist will be associated with significant differences in outcome for F+ and F- data.

To determine the effect of the experience level of the therapist on outcome, ANCOVAs were computed to compare the outcomes (20-month object representation scores) of patients (n = 7) of experienced therapists with outcomes of patients of (n = 14) inexperienced therapists. Correlations between object representation scores at 20 months were controlled by using the scores at intake as covariates. Four separate ANCOVAS were performed on the F+ and F- data. Table 5

Table 5

ANCOVA Comparisons Between Experienced and Inexperienced Therapists

Variable	Experienced 20 Mo. Mean*	Inexperienced 20 Mo. Mean	df	F	Sig of p
Blatt F+	10.48	6.39	1	3.60	.07
Krohn F+	4.20	2.89	1	4.20	.05*
Blatt F-	.29	1.50	1	.64	ns
Krohn F-	.71	.64	1	.87	ns

*Table means were not adjusted for intake object representation score. $p = < .05$

reveals group differences clearly favoring the experienced therapists. The results show that patients treated by experienced therapists made significantly greater Krohn F+ gains than patients treated by inexperienced therapists, $F(1) = 4.20$, $p < .05$. The corresponding Blatt F+ differences closely approached statistical significance, $F(1) = 3.60$, $p < .07$. No significant differences were found between the patients of experienced therapists and the patients of the inexperienced therapists on the F- data, Blatt F-, $F(1) = .64$ $p < .05$; Krohn F-, $F(1) = .87$, $p < .25$. Thus, Hypothesis 5 was supported for F+ data, but was not supported for F- data.

Paired t Tests: Paired t tests were used to compare intake data with data taken at 20 months for experienced

and inexperienced therapists, respectively. As in the above analyses, scores were computed separately on accurately perceived (F+) and inaccurately perceived (F-) human percepts.

F+ data. Table 6 shows that for accurately perceived human percepts (F+), the difference between the means at intake (M = 2.62) and 20 months (M = 4.40) for patients of experienced therapists approached significance for the Krohn data, $t(6) = +2.18$, $p < .07$, but not for the Blatt data, $t(6) = +1.19$. Patients of the inexperienced therapists, however, did not show significant changes on either of the object representation measures.

Table 6

Paired t Tests Comparing Object Representation Score at Intake and at 20 Months for Experienced and Inexperienced Therapists

		Experienced Therapists (N=7)				Inexperienced Therapists (N=14)			
		Blatt		Krohn		Blatt		Krohn	
		Intake	20 Mo.	Intake	20 Mo.	Intake	20 Mo.	Intake	20 Mo.
Variable									
F+	M	7.11	10.48	2.62	4.40	7.24	6.39	2.56	2.89
	SD	5.73	4.61	2.10	1.02	6.96	6.20	2.48	2.45
	t	+1.19		+2.18		-.72		+4.82	
	p*	ns		.07		ns		ns	
F-	M	2.36	.29	1.36	.71	3.05	1.50	1.30	.64
	SD	3.50	.76	1.98	1.89	4.07	3.50	1.84	1.21
	t	-1.45		-.55		-2.0		-1.61	
	p	ns		ns		.06			

*All t tests are two-tailed comparisons.

F- data. Table 6 shows that for (F-) object representation scores, patients of both groups of therapists (experienced and inexperienced) showed insignificant decreases in scores on F- percepts. However, the *t* tests for the patients of the inexperienced therapists approached statistical significance for the Blatt data.

Hypotheses 6 through 9: Whereas subjects diagnosed as paranoid will show quadratic trends on the F+ data over four points in time (decreasing scores from 0 months to 6 months and increasing scores from 12 months to 20 months), non-paranoid subjects will show linear trends towards increasing scores over the same four points in time.

An inspection of the means for each of these diagnostic groups (Table 7) revealed that over the four Rorschach evaluations (0 months, 6 months, 12 months, and 20 months), there was barely any variation in the means, with the largest difference between any two means being less than 1.25. Most importantly, it is quite clear by inspection that the paranoid patients did not change in the predicted direction. The prediction of a quadratic trend meant that the means at 6 and 12 months would be less than the means at zero and 20 months. As seen in Table 7, the data for the paranoid patients clearly contradicts this quadratic pattern. For example, the means for the Blatt scale did not decrease from intake (7.28) to 6 months (7.97). Similarly, the data for the non-paranoid patients clearly contradicts the linear

Table 7

Mean Scores for Paranoid Patients on the Blatt and Krohn Scales

	Months	0	6	12	20
Paranoid (N = 14)	Blatt	7.28	7.97	8.07	7.53
	Krohn	2.65	3.30	3.20	3.50
Non-Paranoid (N = 7)	Blatt	4.77	5.48	4.35	5.30
	Krohn	1.50	2.28	2.11	2.22

prediction that stated that the means would show a steady increase from intake to 20 months: the Blatt means show a decrease from 6 months (5.48) to 12 months (4.35). Hypotheses 6 through 10, therefore, were not supported.

Hypothesis 10: Object representation scores on accurately perceived human percepts (F+) will be linearly correlated in a positive direction with clinical status ratings.

To assess the degree of association between the object representation measures and clinical status ratings, Pearson product moment correlations were computed for the F+ percepts at each of the four time periods corresponding to the times when the Rorschach was readministered (zero months, 6 months, 12 months, and 20 months). As seen in Table 8, none of these correlations reached statistical significance. Thus, Hypothesis 10 was not supported.

Table 8

Pearson Correlations Between Object Representation Score and Clinical Status Ratings

Months	0	6	12	20
Blatt	.16	-.03	.01	.19
Krohn	.05	-.13	.04	.00

DISCUSSION

The significance of the present study lies mainly in two areas. First, the present study expands the literature on the clinical usefulness of object representation measures, specifically, the Blatt and Krohn scales. The literature to date already had suggested that these scales were clinically useful in distinguishing between schizophrenic and borderline diagnostic groups. This study shows that, in addition, the Blatt and Krohn object representation scales can be used to document change within a single group of patients over time. This positive change is defined by the scales as an increase in the accuracy and organization of a patient's object representations. Moreover, this observed improvement supports the suggestion made by Gunderson and Comes-Schwartz (1980) that investigators explore the subjects' experience of self and others pre- and post-treatment in evaluating a mode of psychotherapy aimed at changing the self.

Second, the significance of this study lies in the fact that the measures used do document change in patients secondary to treatment. The change influenced by therapy plus medication, as noted above, is in the direction of

increased accuracy and organization in the patients' object representations (F+). The change influenced by medication is in the direction of decreased organization and elaboration of distorted object representations (F-), as indicated both by the psychotherapy-plus-medication group and the medication-only group. However, the three-way ANCOVA fell short of statistical significance. While these changes associated with 20 months of treatment were statistically significant for each group, the difference between the three groups fell short of statistical significance.

Overall, the present data are in accord with the conclusions of Smith, Glass, and Miller (1980). Through the use of a meta-analysis, these authors integrated findings from 112 research studies that compared the benefits of drugs against the benefits of drugs plus psychotherapy and psychotherapy only. They concluded that psychotherapy plus drugs offers the most benefit to psychotics. Furthermore, they determined that drugs only were somewhat more effective than psychotherapy for psychotics.

A parallel pattern of effects was observed in the present data: the patients treated by psychotherapy plus drugs showed the most positive findings, improving on both F+ and F- data. The patients who were treated by drugs only showed the next number of findings, improving on the F- data only. Finally, the patients treated with psychotherapy only failed to show improvements. Based on

the observed order of effects, our data closely follows the pattern of effects determined by the Smith et al. meta-analysis.

It may well be that treatment by medication is accompanied by a decrease in distorted fantasy life and inappropriate object representations, but that an increase in differentiated and appropriate object representations occurs only when psychotherapy is added.

It is puzzling that psychotherapy alone did not seem to have a potent effect on these measures. It should also be noted that in the psychotherapy-plus-medication group, four of the patients (those treated by Dr. Tierney, the experienced therapist) were taken off their medication within two months of therapy. In evaluating the benign effect of medication, it should be noted that these effects were measured after 20 months, an insufficient period of time for possible negative neurological changes induced by medication (Breggin, 1983).

The Effect of the Experience Level of the Therapist

The present results showed that when the patients treated by inexperienced therapists were compared with the patients treated by experienced therapists, the latter group made greater gains in their F+ object representation scores. This finding extends the findings of Karon and VandenBos (1970). Karon and VandenBos found that on other measures of outcome, e.g., clinical status ratings, experienced

therapists were associated with superior outcomes. The patients of the inexperienced therapists did show an improvement on the F-data which approached statistical significance; however, the change on the F-data for experienced therapists was not significantly different.

Object Relations Theory and Psychotherapy Research

The results of this study challenge theoretical assumptions made by object relation theorists. Most object relation theorists (Fairbarin, 1952; Guntrip, 1969; Klein, 1948) assume that change in a person's developmental level of object representations occurs only after prolonged and intensive psychotherapy. The present results showed that with appropriate psychotherapeutic interventions, considerable gains were made by patients who averaged only 70 treatment sessions. A recent finding by Ryan (1984) buttresses this challenge. Ryan found significant changes in the developmental level of object representations in a group of inpatient schizophrenics who had been treated for about nine months with psychoanalytically oriented methods.

From the more general viewpoint of psychotherapy outcome research, the results of this study also challenge the pessimism of May (1975) and Holon and Beck (1978). Their reviews of psychotherapy outcome concluded that psychotherapy adds very little to the psychological growth

of schizophrenics. As shown by the present results and Ryan's outcomes, this pessimism appears misguided. In the future, a fruitful line of investigation for psychotherapy researchers might lie in trying to answer the difficult question of exactly how the psychotherapy mediates changes in object representations. This question might be answered through research that directly examines process variables (Orlinsky and Howard, 1978).

Limitations of the Object Representation Scores in This Study

A question arises about the meaningfulness of the object representation measures due to their failure to correlate with clinical status ratings, an outcome measure that in previous studies correlated highly with a number of important change variables (Karon and VandenBos, 1981). Thus, it is of some concern that the present work's clinical status ratings did not correlate with object representation scores. A possible explanation for this failure is that the scales themselves may not be as sensitive to variation in overall health, as suggested by previous studies (Spear and Lapidus, 1981; Schwager and Spear, 1981). This latter explanation is supported by the failure of the present study to detect any distinctive pattern of comparison between change in the two different subgroups of schizophrenics, paranoid and non-paranoid. Schwager and Spear found that during the first stage of treatment, paranoid schizophrenics show a

decrease in object representation scores, but their scores increased with further treatment. In contrast to Schwager and Spear's findings, the present study found negligible temporal variation in the scores of paranoid patients. The present findings, therefore, constitute a failure to replicate Schwager and Spear's findings. It may be, however, that the object representation measures assess a different dimension of functioning than those included in the clinical states rating. The present findings suggest that the object representation measures are sensitive to change, but that their range of application needs to be further explored. Whereas the Krohn scale was designed (Krohn and Mayman, 1974) as a measure of affective and thematic qualities of object representations, the Blatt scale (Blatt et al., 1976) was designed as a measure of the cognitive and structural features of object representations. The high correlation between the two object representation scales in both the present sample of schizophrenics ($r = .90$) and the sample described by Spear and Lapidus (1981) ($r = .65$) negates the meaningfulness of the distinction between affective/thematic object representations and cognitive/structural object representations, at least for our sample of schizophrenics. The loss of this distinction implies a loss in the overall validity of these two scales for assessing the differences between cognitive and affective features of object representations. Werner's (1948) developmental theory

suggests a possible explanation for the correlation found between these two scales when applied to schizophrenics.

An additional explanation for the high correlation between the scales may be found in Werner's (1948) comparative developmental theory. Werner's theory holds that, as compared with normal adults, persons with severe psychopathology generally show less differentiated perception from an affective point of view and also from a cognitive point of view. An application of Werner's theory to the present data is possible if we assume that (a) the Krohn scale does in fact measure the "affective differentiation" of object representations, and (b) the Blatt scale does in fact measure the "cognitive differentiation" of object representations. Then, according to Werner's theory, both scales should reflect relatively little "object differentiation" in schizophrenics. The high correlations between the two scales observed in both the present sample of schizophrenics and in the sample described by Spear and Lapidus are congruent with Werner's theory, i.e., both scales revealed low scores or little "object differentiation."

Support for the Validity of Psychoanalytic Theory of Change

The results of the present study showed that schizophrenics treated with psychotherapy and medication advanced their developmental scores (i.e., their object representation scores) on accurately perceived human percepts. The proposition that more accurate object

representations occur simultaneously with overall ego development is supported by two psychoanalytic theories: 1) the traditional theory of ego development of Anna Freud (1937) and 2) the object relations oriented theory of Otto Kernberg (1976). Empirical work related to Kernberg's theory was discussed earlier (Blatt et al., 1976; Mayman, 1967; Ritzler et al., 1980; Spear and Lapidus, 1981).

As suggested by Anna Freud's theory, more accurate object representations may result from improvement in other areas of ego functioning. Or, alternatively, other areas of ego functioning improve as object representations become more accurate, as propounded by Kernberg (1976). Previous empirical work (Karon and VandenBos, 1970; Glatt, 1971) based on the present sample of psychotherapy patients supports both of these psychoanalytic ideas about change. These previous investigators (Karon and VandenBos, 1970; Glatt, 1971) discovered, among other findings, that schizophrenics who were treated with psychotherapy showed greater ego functioning in at least three areas: (a) less thought disorder, (b) greater cognitive flexibility, and (c) greater tolerance of ambiguity. If looked at from the orthodox ego-analytic viewpoint of Anna Freud (1937), these aspects of increased ego strength will facilitate more accurate self and object representations. Anna Freud believes that as the ego is strengthened, there is concomitantly less need to distort inner experiences of the self (e.g., with ego mastery of aggressive instincts, there

is less need to "identify with the aggressor"). Conversely, if the present findings are looked at from the more object relations oriented viewpoint of Otto Kernberg (1976), then changes in object and self-representations facilitated the change in other areas of ego functioning. In Kernberg's theory, self and object representations themselves are primary; they themselves are psychic structures that provide strength to the ego. As the individual integrates self and other images, this integration reflects in more anxiety tolerance--an ego strength.

Process of Change: An Example

Two responses from a patient treated with psychotherapy will be used to illustrate the process of change. Otto Kernberg's (1976) developmental object relations theory of the character pathology will be the guiding theory in explicating the observed changes. The first of these responses is from intake, and the second is from the data at 20 months. Both responses were to Card 3 of the Rorschach. At intake, the patient responded to Card 3 with: "Two people--two Martians or two girls--red and black." On inquiry, the patient responded, "Tits, head, body, dong (?), you know, 'ding-dong'--but it's not . . . I've seen them around." When asked about the Martians, he replied, "I don't know what they look like and I don't want to go up there and find out."

What is most striking is how this patient merged, within the same portion of the ink blot, both male and female sexual attributes. Specifically, the patient merged the male "ding-dong" precept--an association to the blot's phallic contours--with the female "tits" percept. Both were blurred into a single object representation. Also striking is the way in which the patient's perception vacillates between the sexualized human percept and the nonsexualized but paranoically-tinged (Martian) quasi-human percept.

How does this apply to Kernberg's developmental of character pathology? According to Kernberg's developmental theory of character pathology, this patient carries the diagnosis of schizophrenia and is, therefore, at a primitive or developmentally less advanced level of character pathology. According to Kernberg, object representations at this level of development are impaired because the individual can neither master nor modulate the influence of the drives, especially aggression. Kernberg (1978) explains (p. 146),

> Excessive pregenital aggression also causes a pathological condensation of pregenital and genital conflicts with predominance of pregenital aggression and is evidenced by sadistically infiltrated, polymorphous perverse infantile drive derivatives which contaminate all the internalized . . . object relations of these patients.

Kernberg also noted that patients at this level of character development are very prone to process rapidly many contradictory object representations. This is both because the splitting defense predominates over other defenses in these individuals (thus the contradictions in their perceptions), and because these individuals are fending off unusually intense drives such that they need to recruit constant defense.

The patient begins by seeing two "people" in terms of sexual images, and in terms of polymorphous (fused male and female) sexual images, as we said above. Kernberg's description in the quotation above applies in that he describes these individuals by saying of them, "polymorphous drive derivatives contaminate all the internalized object relations of these patients." To start with, this patient's percept "people" (his object representation of self and other) is limited to a "polymorphous drive derivative." Furthermore, Kernberg says these "polymorphous . . . drive derivatives" are "sadistically infiltrated" and "perverse." The blatant primitive aggression (infantile sadism) in this first image is suggested by the demeaning childish references to male sexuality ("ding-dong") and to female sexuality ("tits"). Lastly, Kernberg describes these drive derivatives as "infantile." Clearly, the infantile, primitive quality of the human percept ("people") here can be seen in the primary process and regressive clang association noted in his word for the male phallus

"ding-dong." In sum, polymorphous perverse infantile drive derivatives can be said to be present, as can be seen in this patient's response. And such "sadistically infiltrated," polymorphous infantile drive derivatives could be said to contaminate the internalized object relations of this patient, extrapolating from the data of this response.

Continuing on to consider how else Kernberg's developmental theory of schizoid and schizophrenic characters may apply to the present study, let's look at the next percept this patient reports in his response at intake: "Two Martians or two girls." The patient's rapid shift from people to Martians and back to girls shows a rapid processing of disparate representations. The contradictory quality of his object representations can be seen in his rapid shift in focus from the genital (sexual) to the paranoid (or projected aggression). I say projected aggression because his responses to inquiry about the Martian ("I don't want to go up there and find out") clearly indicate that he is afraid of the Martians and that he perceives the Martians as threatening aggression towards him. Furthermore, in that the aggression is clearly his own within the first percept of "people," but in that, as his response to this card progresses, he shifts to seeing the aggression as coming from the outside, in the second percept (coming from the Martians), one could easily say that he begins to project his aggression. Kernberg's

theory can be said to further apply in that he splits off (or projects) the aggression from his self to the other (the Martian). Thus the splitting, or splitting off, defense is the predominant defense employed here. The rapid shifts Kernberg describes can be seen as due to the intensity of aggression the patient experiences. Accordingly, as aggression floods the patient's sexual image, he needs to rapidly shift to a Martian in order to get rid of, or rid himself of, the aggression that flooded him by attributing it to someone else. Finally, the source of the flipping from sexual to paranoid and back to sexual images may be an attempt to separate and therefore protect "good objects" from bad objects."

At 20 months, this patient's response to the same blot is, "Two women pulling on something . . ." (Inquiry) "Bust, back-end, legs, high-heeled shoes, head." As can readily be seen, the patient had moved from a low-level undifferentiated human (a low score on the Blatt scale) to a popular response involving two well-defined and interactive women (a much higher score on the Blatt scale). Clearly, the patient was still focused on the sexual and narcissistic attributes of the percept. But this percept is, after 20 months of treatment, now clearly of one gender, no longer polymorphous perverse. The sexual attributes described are no longer infantile. Although the females are not involved in a well-defined activity, the patient describes them as separate people. The erotic or genital

image is no longer infiltrated with aggression or sadism. There is no longer obvious evidence of splitting in that there is no splitting off, or projection of aggression, nor does he shift from all "good" to all "bad" objects. Finally, there is considerably less aggression evident in the percept. Appendix 4 presents several other representative examples of change.

CONCLUSION

This study represented an attempt to extend the literature on changes in object representations for schizophrenics. First, schizophrenics object representations improved with psychotherapy plus medication, there was increased object differentiation, along with a decreased need to embellish object relations with fantasy. Second, this study offered support for the belief that the effect of exploratory psychotherapy with schizophrenics can be illuminated by instruments that are sensitive to changes in inner experiences. Third, this study challenges the pessimism or theorists who conclude that psychodynamic psychotherapy adds very little to drug therapy for schizophrenics. Finally, this study suggests that when schizophrenics are treated by experienced psychotherapists, psychoanalytically oriented psychotherapy can be effective at helping these people develop healthier internal models of other people.

APPENDICES

APPENDIX 1

Journal of Consulting and Clinical Psychology
1970, Vol. 34, No. 2, 229–235

Appendix 1

QUANTIFIED JUDGMENTS OF MENTAL HEALTH FROM THE RORSCHACH, TAT, AND CLINICAL STATUS INTERVIEW BY MEANS OF A SCALING TECHNIQUE[1]

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Meaningful measures of mental health derived from clinical instruments such as the Rorschach, TAT, and Clinical Status Interview (CSI) are not ordinarily quantifiable without sacrificing the subjective, clinical, and global nature of the data. A practical technique for scaling clinical judgments is described. Judgments of 35 schizophrenic patients yielded intrajudge reliabilities from .79 to .96, and interjudge reliabilities from .87 to .95. Days hospitalized during the subsequent six months correlated −.63 with the TAT scale, −.58 with the Rorschach scale, and −.71 with the CSI scale. Days hospitalized subsequent to a later testing, correlated −.64, −.49, and −.64 with scales determined from that later testing. The scaling technique thus was found to be reliable and valid for measuring mental health.

Measuring changes from morbid to post-morbid stages following therapeutic treatment remains a complex issue. Methodologists require quantitative data for statistical analysis, but clinicians find that those measures which are most easily quantified may be clinically meaningless. The Rorschach, TAT, and Clinical Status Interview (CSI) have been used in the past by clinical personnel as measures of mental health. But such data are not ordinarily quantifiable without sacrificing the subjective, clinical, and global nature of the most appropriate evaluation of such observations. It is proposed that a simple method of scaling may be used to reduce such data to quantitative measures which are clinically meaningful.

It is assumed that while there are obvious specificities, nonetheless, a unidimensional concept of "mental health" may be meaningfully employed. This assumption may be justified on the basis of data presented by Lubensky (1962), who found that the first principal component of a factor analysis of ratings with respect to 14 specific aspects of psychopathology accounted for 60% of the variance. Thus, one dimension meaningfully accounted for a great deal of the variation in emotional health. Similarly, Bieri, Atkins, Briar, Leaman, Miller, and Tripodi (1966) found that experienced clinicians, given the discrete classifications of standard psychiatric nosology, may resort to some underlying dimensional basis in discriminating among cases. Menninger, Mayman, and Pruyser (1963) criticize the value of standard psychiatric nosology and have advanced a classification of their own which appears to be a dimension of pathology, ranging across five categories from least to most disturbed. These categories are "nervousness, neurotic, social acting out, psychotic, and severely disturbed." It is the present authors' contention as well as the previously cited authors' that there is evidence that despite the obvious multiplicity of symptoms, much of mental illness may be summarized in terms of a unidimensional construct.

Moreover, a sophisticated judge can take into account the relative severity of alternative symptoms and the implications of environmental context. Thus, while ability to hold a job is a central criterion of adjustment, a patient who has a job waiting for him may not be necessarily better adjusted than a patient having difficulty in obtaining work de novo. Similarly, an increase in the

[1] This investigation was supported in part by the Michigan State Psychotherapy Project, National Institute of Mental Health Grant MH-08790. The authors wish to express their appreciation to the interviewer, Leon Berman; the projective tester, Stanley Rosenbuck; the clinical raters, Erma Alperson, Ross Cotter, Charles Glatt, and Frank Long; and Patricia Buros and Adeline Reith for their assistance.

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severity of a symptom like manifest anxiety which, everything else being equal, would indicate a worse adjustment, might mean movement toward health if it represents the results of the patient's abandoning a more pathological defense, for example, the disappearance of hallucinations. The proposed scaling procedure allows such factors to be weighted subjectively, and the resulting quantitative dimension should be more successful at summarizing health–pathology on a single dimension than the necessarily linear combination of symptoms in the factor analysis of Luborsky.

The procedure presented in this paper consists of obtaining global ratings of emotional health from a clinically trained rater by presenting him with the protocols (Rorschachs, TATs, or CSI) of two patients. First, the rater is asked to judge which is the healthier individual. Using that healthier person as the standard, he is then asked to estimate the proportion determined by the ratio of the emotional health of the sicker individual to that of the healthier. Procedures for selecting the pairs to be rated, obtaining the ratings, computing the scale values, calculating coefficients of internal consistency (i.e., a measure of unidimensionality), of interrater reliability, and of validity are described.

METHOD

Thirty-five schizophrenic patients were seen by a psychiatrist who interviewed them for 30 minutes and a psychologist who administered a 20-card TAT and a Rorschach test. The interview and the TAT were tape recorded. The TAT was then transcribed by a typist. The Rorschach responses were recorded by hand, and the protocols scored by the Beck system.

All three sets of clinical materials (interview tapes, Rorschach protocols, TAT protocols) were given to two pairs of raters who were advanced graduate students in clinical and personality psychology. One pair rated emotional health from the projective materials and one pair rated it from the interview recordings. However, the TAT ratings were made separately from the Rorschach. That is, the two raters first rated the TAT and then the Rorschach protocols. Usually, while the raters rated the protocols independently, they were permitted to clarify the content of the protocol prior to the rating and to discuss the ratings afterwards. The raters were asked to compare a pair of patients at a time. They were instructed to rate "mental health" because pretesting had indicated that "mental health" is judged more consistently than "mental illness." It seems as if there is no clear base line of "health" from which to measure "illness," but that in rating "health" the base line seems to be something like "no functioning at all."

The raters were instructed not to use a formal weighting system for the specific criteria of emotional health provided, but to use such criteria clinically to arrive at a global, relative judgment of emotional health. These criteria, for the clinical status interview, were ability to take care of self, ability to work, sexual adjustment, social adjustment, absence of hallucinations and delusions, degree of freedom from anxiety and depression, amount of affect, variety and spontaneity of affect, satisfaction with life and self, achievement of capabilities, and benign versus malignant effect on others.

For the projective tests, in addition to those criteria above, the following were used: the length of protocol, absence of stereotyped responses and more varied material, presence of benign fantasies, helping nurturant parental figures, self-confidence, reality testing, and direct representation of problems. Presence or absence of primary process material on the projective tests was not to be used as an indication in itself of health or sickness, inasmuch as presence of primary process material has different significance in the context of differing treatments.

The dimension of health was further clarified by having the raters read a case history by Wessman and Ricks (1966, pp. 145-173), entitled, "Winn, a happy man." This is a case history, complete with projective protocols, of an extraordinarily healthy individual who has not had therapy.

After reading or listening to a pair of protocols, a rater made a judgment of the ratio of the emotional health of one person to the health of the other. This judgment was recorded on a 20-centimeter line. The rater judged who was healthier of the two patients and placed him at the rightmost point of the line. The leftmost point represented an absence of mental health, or the zero point. That is, the length of the line represents the health of the healthier individual. The second decision involved taking the less healthy member of the pair and deciding, by placing a mark at some point along the line, what proportion of the first person's health the other person had. In order to get consistent judgments, it is necessary to require that the healthier person be the length of the line, so the observation is always a proportion, with the healthier person being the denominator and the less healthy person the numerator.[3]

If all possible pairs had been compared, there would have been $(70 \times 35)/2$ comparisons, or 630 judgments for each rater on each type of material. To reduce the work, it was decided to select $2(n-1)$ comparisons or 70 judgments. Previous work on

[3] This is based on preliminary work on this scaling technique using psychophysical stimuli which had been carried out by Donald P. Estavan. The logarithmic solution and its application to clinical material is the responsibility of the authors, however

psychophysical stimuli had suggested that stimuli close to each other provided the most stable judgments. However, it was necessary to order the stimuli (patients' protocols) before such judgments could be taken. Therefore, a comparison stimulus (person) was chosen and all other stimuli were judged against that person, that is, using the constant stimulus method. These first $n - 1$ judgments were used to order the stimuli, and then adjacent pairs were determined to be presented to the judges for ratings. The tentative scaling was not discussed with the raters, and the pairs were randomized before presentation to the raters. The raters reported that it was easier to make the judgments using a constant stimulus when rating the interview recordings, but that the adjacent comparisons were easier to rate when dealing with projective protocols.

In order to illustrate the calculations involved in determining the scale values, suppose there are three patients—A, B, and C. A is compared with B, found to be .60, and B is rated to be .80 of C. If these ratios are meaningful, we can then predict that A will be $.80 \times .60 = .48$ of C. When the rater actually does compare A with C, we get a check on whether these ratings form a ratio scale. This check can be performed simultaneously over the whole matrix of data as described below.

The judgments of a single rater may be organized into a matrix with each stimulus being represented by a row and a column as shown in Table 1, which shows all possible comparisons of three stimuli. Each entry consists of the column stimulus divided by the row stimulus. In the matrix there are missing entries wherever the numerator would have been larger than the denominator. The missing entry is obtained by taking the reciprocal of the comparison. If A and B are compared, A is seen as .60 of B. In the matrix, A over B is recorded as .60. In the same matrix, B over A is missing and is determined by computing the reciprocal of A over B, that is, the reciprocal of .60 or 1.67. (The diagonal entries are by definition 1.00.) A complete matrix is shown in Table 2.

Further computations can be simplified by transforming to logarithms. The logarithm of a ratio equals the logarithm of the numerator minus the logarithm of the denominator, that is, log A/B equals log A − log B. The matrix of ratios now becomes a matrix of differences, which makes the solution for the scale values arithmetically simple. Moreover, the logarithms of the judgments tend to have more nearly equal errors of measurement for extreme and nonextreme judgments than the raw judgments and tend to be more linearly related to other variables as will be discussed below.

TABLE 1

A MATRIX OF JUDGMENTS

Stimulus	A	B	C
A	$\frac{A}{A}$	$\frac{B}{A}$	$\frac{C}{A}$
B	$\frac{A}{B}$	$\frac{B}{B}$	$\frac{C}{B}$
C	$\frac{A}{C}$	$\frac{B}{C}$	$\frac{C}{C}$

TABLE 2

AN ILLUSTRATIVE COMPLETE MATRIX

Stimulus	A	B	C
A	1.00	1.67	2.08
B	.60	1.00	1.25
C	.48	.80	1.00

Those who are familiar with scaling techniques will recognize that the data analysis to be described is similar to that for Thurstone's well-known Case V of the Method of Paired Comparisons (Guilford, 1954, pp. 154–178; Mosteller, 1951). In Thurstone's Case V, the entries in the matrix are obtained by taking the normal deviate corresponding to the percentage of times one stimulus is seen as greater than another in a large number of trials; in the present technique, the entries in the matrix are obtained by taking the logarithm of the ratio obtained from a single judgment. Beyond that point, the computations are identical.

This computational procedure and its logic may be best understood by examining Tables 3 and 4. In Table 3, the logs of the ratios are substituted for the ratios in Table 1. It will be recalled that the log of a ratio is numerically identical with the difference between the logarithms of the numerator and of the denominator. As seen in Table 3, if the entries in a column are averaged, the log scale value of that column stimulus can be determined as a deviation from the average log scale value of all the stimuli. Since the zero point of the log scale (i.e., the unit of measurement of the original scale) is arbitrary, one may set the mean log scale value at zero, in which case the result simplifies to the log scale value being the average of the column. This is a least-squares solution for a complete data matrix (all possible pairs compared), and is algebraically identical (but not experimentally identical) with Mosteller's (1951) derivation for Thurstone's Case V. Numerically, this is illustrated by Table 4, where the logs of the entries in Table 2 are entered and the scale values computed.

A complete comparison of all possible pairs requires $n(n - 1)/2$ comparisons, where n is the number of stimuli. However, $n - 1$ comparisons are sufficient to determine the scale and $2(n - 1)$ comparisons, as used in this study, provide sufficient data to test internal consistency.

A more general least-squares solution, for both complete and incomplete data matrices, may readily

TABLE 3

MATRIX OF LOGARITHMS OF JUDGMENTS

Stimulus	A	B	C
A	$\log A - \log A$	$\log B - \log A$	$\log C - \log A$
B	$\log A - \log B$	$\log B - \log B$	$\log C - \log B$
C	$\log A - \log C$	$\log B - \log C$	$\log C - \log C$
Sum	$3 \log A - (\log A + \log B + \log C)$	$3 \log B - (\log A + \log B + \log C)$	$3 \log C - (\log A + \log B + \log C)$
Average	$\log A - \left(\frac{\log A + \log B + \log C}{3}\right)$	$\log B - \left(\frac{\log A + \log B + \log C}{3}\right)$	$\log C - \left(\frac{\log A + \log B + \log C}{3}\right)$

Note.—If the average log scale value $\left(\frac{\log A + \log B + \log C}{3}\right)$ is defined as equal to 0, then the column averages simplify to log A, log B, and log C, respectively.

be calculated as follows. For any one stimulus j, a least-squares solution for L_j (the logarithm of the scale value of j) is given by the following equation:

$$L_j = \frac{1}{N_{i^*}} \sum_{i^*} D_{ji^*} + \frac{1}{N_{i^*}} \sum_{i^*} L_i \qquad [1]$$

where D_{ji} is the logarithm of an observed ratio of stimulus j to stimulus i, that is, D_{ji} is an empirical estimate of $L_j - L_i$; and i^* is a value of i for which the comparison D_{ji} was observed. It should be noted that for these purposes, if D_{ji} was observed, D_{ij} is considered to have been observed since it is determined by the same judgment and equals $-D_{ji}$.

A little algebra will readily generate the solution for the complete data matrix from Equation 1. In any incomplete matrix in which a whole column (and row, obviously) is determined, the value for the stimulus is determinate. That is, as with the complete data matrix, the mean of the column of log observation is the log scale value if the mean log scale value is set at zero. If, however, the column is not complete, the solution seems indeterminate at first glance. However, one may compute an iterative solution using any trial values of L_j to compute the next approximations. The solution rapidly converges. In the empirical examples, 4 to 12 iterations sufficed. To make the procedure more explicit:

1. Sum the columns of observations (after transforming to logarithms).
2. Divide by the number of observations in that column.
3. Sum the trial values of L_j for all stimuli with which that stimulus j (the column stimulus) was compared.
4. Divide by the number of observations (same number as in Step 2).
5. Add the results of Steps 2 and 4 to obtain the next estimate of L_j.
6. Do this for all stimuli (i.e., all columns of the matrix).

TABLE 4

LOGARITHMS CORRESPONDING TO THE ENTRIES IN TABLE 3

Stimulus	A	B	C
A	0	.22185	.31876
B	9.77815 − 10(= −.22185)	0	.09691
C	9.68124 − 10(= −.31876)	9.90309 − 10(= −.09691)	0
Sum	−.54061	.12494	.41567
Log scale value (column average)	−.18020	.04165	.13856
Anti-log scale value	.66	1.11	1.38

7. Repeat Steps 3 through 6, using the new values of L_j.
8. Stop when the values of L_j do not change appreciably.

One may use any trial values of the L_j to begin with, such as all $L_j = 0$. Some iterations can be saved by using better initial trial values determined by using $n - 1$ of the comparisons. But no matter what the trial values, the solution will converge.

It should be noted that one of the scale values is arbitrary (as in paired-comparison scaling) so that one may set the average L_j or the value of one particular L_j as equal to zero to suit one's convenience. For most incomplete data matrices, it tends to be time saving to set one of the L_j equal to zero.

These computations yield the logarithm of the scale values. Intrarater reliability for the logarithmic values may be estimated by a method similar to that described by Gulliksen and Tukey (1957) for assessing the reliability of the Thurstone paired-comparison technique. The total sum of squares (the sum of the squares of the observations over half the matrix, either above or below the diagonal) may be divided by the total degrees of freedom (the number of independent observations) to determine T, an estimate of the total variance.

Using the scale values computed by a scaling method, one can derive a theoretical value of what each observation ought to be, if the scale values were correct and if the scaling method worked exactly. If one subtracts the theoretical value of an observation from its empirically observed counterpart, one obtains a residual or discrepancy. By squaring these errors and summing over half of the matrix (either above or below the diagonal), one obtains the discrepancy sum of squares. Thus, the total sum of squares can be divided into two parts: the discrepancy sum of squares and the sum of squares accounted for by the scale values.

The total degrees of freedom may be secondarily partitioned. Since $n - 1$ scale values were computed from the data, $n - 1$ degrees of freedom were used in calculating the scale values. The total degrees of freedom (the number of independent observations) minus the number of scale values determined from the data $(n - 1)$ yields the degrees of freedom for the error or discrepancy variance.

The discrepancy sum of squares divided by the discrepancy degrees of freedom yields D, the discrepancy variance. Internal consistency, R_{ss} may now be computed as follows:

$$R_{ss} = \frac{T - D}{T} \qquad [2]$$

It should be noted that all failures of the scaling method, inaccuracies of judgment, unreliability of the judges, and lack of unidimensionality increase D and decrease R_{ss}.

Intrajudge reliability and validity may be determined using the ordinary product-moment correlation between the log scale values of two raters or between the log scale values and an external criterion.

Data for the present study were taken from the pretreatment and follow-up evaluations of patients in the Michigan State Psychotherapy Project (Karon & O'Grady, 1969). The patients were administered a battery of tests of intellectual functioning at each evaluation as well as the Rorschach, TAT, and CSI. These data were gathered for research purposes. Hence, the psychiatric interviewer, testers, and raters were personnel not connected with the inpatient service or the treatment of patients. They did not know the patients before evaluation, and did not know the course of treatment. The data were stored outside the hospital. Hence, the results of these examinations were not part of the ward staff's basis for determining the course of treatment or discharge.

RESULTS

The data to be presented in this section can be subsumed under three categories. The categories will be (*a*) evidence for intrajudge reliability, (*b*) evidence for interjudge reliability, and finally (*c*) some evidence for the validity of the scaling procedure.

The first rater using the clinical status interview had an internal consistency of .83, while the second rater had the surprisingly low internal consistency of .37. The two TAT raters had an internal consistency of .86 and .81, while on the Rorschach they had .96 and .92.

One advantage of the R_{ss} coefficient is that it immediately reveals whether a judge's ratings are consistent and unidimensional. If R_{ss} is not satisfactory, one can search for and remedy the cause of the inconsistency.

The low internal consistency of one rater led us to question his data. This rater was blind, and had to depend on someone else to transcribe and label his judgments. An error or errors of transcription seemed likely. Since scale values can be determined from $n - 1$ judgments, and since the raters carried out two sets of $n - 1$ judgments, scale values were determined from his first set of judgments and from his second set of judgments independently. He was asked if the rankings of these scale values were reasonable. Those determined from the first $n - 1$ were meaningful to him. Those determined from the second $n - 1$ were meaningless to him, so he was asked to redo those judgments. After redoing them, his internal consistency was .79.

The traditional mode of assessing reliabil-

ity in rating situations by correlating the scale values between the two raters was examined. Scatter plots of the logarithms of the scale values seemed to be more nearly linear in their relationship to each other and to external criterion than the scale values. More generally, the use of log scale values, rather than anti-log, for statistical analyses seems indicated by these data. The interjudge reliability between the clinical status raters was .82, using the initial judgments, despite the low internal consistency of one rater. The interjudge reliability on the TAT and Rorschach was .94 and .95, respectively. Both of these latter figures are considerably higher than would normally be expected on a rating task. The first correlation of .82 might be expected to go even higher if the intrajudge reliability of the first rater were raised. Indeed, this was the case; when the second half of the ratings was redone by the rater who had the original negative internal consistency, the resulting interjudge reliability was found to be .87.

For each instrument (CSI, Rorschach, and TAT), the 35 log scale values obtained by averaging the ratings of the two raters were then correlated with various independent criteria to get a measure of their validity. First, among themselves, the three scales correlate moderately highly. The interview ratings correlate .44 with the Rorschach ratings, and .55 with the TAT ratings. The TAT correlates .64 with the Rorschach.

Inasmuch as the patients were psychotic at the beginning of the project, much of the variation in Porteus Maze scores and WAIS scores represented degree of functional impairment at the time of testing rather than intelligence. The patients had also been examined on the Drasgow-Feldman Visual-Verbal Test (VVT), a concept formation task that is designed to be specifically vulnerable to the schizophrenic thought disorder. The Porteus Maze correlated .57 with the interview ratings, .47 with the Rorschach ratings, and .44 with the TAT ratings. The Wechsler correlated .43, .58, and .55 with the 35 patients' scale values on the three assessment procedures. The number of errors on the VVT correlated −.50, −.49, and −.41 with the three ratings.

Finally, the number of days spent in the hospital during the following six months was used as one appropriate predictive criterion measure with which to correlate the three scales obtained from initial clinical status material. The TAT correlated −.63 with days hospitalized, while the Rorschach correlated −.58. The clinical status interview correlated −.71.

Surprisingly enough, when the new, more internally consistent, ratings for the second rater of the clinical status interview were substituted, the correlations of the interview ratings with the various criteria were essentially the same, that is, with the TAT, .57; with the Rorschach, .41; with the Porteus Maze, .60; with the WAIS, .40; with days hospitalized in the next six months, −.71.

Thus, even when R_{ss} is relatively low, the least-squares scale values still yield high interrater reliability and high validities. They are thus robust with respect to inconsistent or nonunidimensional judgments.

The procedure was replicated with the interview, protocol ratings, and test data obtained from the examinations of the same patients after six months of treatment. R_{ss} for all ratings was .78 or better, and interrater reliabilities were .82 for the CSI, .81 for the Rorschach and TAT. The CSI correlated .55 with the Rorschach and .57 with the TAT, and the two projective ratings correlated .80. Validity coefficients against the intellectual tests were (in the order CSI, Rorschach, TAT) .35, .47, and .45 for the Porteus Mazes; .46, .74, and .65 for the Wechsler-Bellevue II; and −.57, −.81, and −.74 for the VVT. Correlations with days hospitalized in the six months subsequent to this evaluation (i.e., sixth to twelfth month of treatment) were −.64 for the CSI; −.49 for the Rorschach; and −.64 for the TAT.

DISCUSSION

The method yields high intrajudge and interjudge reliabilities and high validities for global clinical ratings of all three types of material.

Surprisingly, the inclusion of some internally inconsistent judgments in the ratings of one judge did not affect the scale values sufficiently to lower interrater reliability or valid-

ly appreciably. Similarly, using approximate solutions for the scale values, such as one similar to that suggested by Guilford (1954) for Thurstone's Case V or as described in O'Grady and Karon (1968), was found to yield considerably lower intrajudge reliabilities, but the approximate scale values were highly correlated ($r = .87$ or better) with the least-squares scale values, and the validities were reduced only slightly. Nonetheless, the least-squares solution is sufficiently easy to compute that we would recommend its use.

Of some interest are the raters' reports that the constant stimulus judgments were easier to make than the adjacent comparisons for the clinical status interviews, but that comparisons of adjacent stimuli were easier for the Rorschach and the TAT. This difference probably is due to the fact that the interviews were recorded on tape and presented a more formidable problem of recall than the written projective protocols. This task was simplified if one of the stimuli was repeated again and again, and hence was more firmly committed to memory.

This scaling procedure may be contrasted with other scaling procedures. The simplest kind of rating procedure, the method of absolute judgments, has two drawbacks: it requires the judge to have an internalized scale with end points and units before judgment can be made meaningfully, and the judgment itself is experienced as very difficult by the judge. The technique used by the authors, however, requires the judge to have neither an explicit end point nor unit, but simply to compare one human being's functioning with another's, using one of the persons as the unit. This concrete judgment is experienced by the judge as much simpler. Moreover, internal consistency and degree of unidimensionality may be examined empirically, when judgments are made on pair-wise comparisons.

Thurstone's paired-comparison technique, while requiring only a "which is greater?" judgment, has the fatal drawback that it requires each pair of stimuli to be compared by a large number of judges (50 or more) or by the same judge a large number of times. But if clinically sophisticated judges are required, one cannot for practical purposes obtain a large number of them, nor will one sophisticated judge cooperate in making the same judgment a great many times.

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(Received February 25, 1969)

APPENDIX 2

APPENDIX 2

A DEVELOPMENTAL ANALYSIS OF THE CONCEPT OF THE OBJECT ON THE RORSCHACH

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TABLE OF CONTENTS

a. Fusion of object and action

b. Incongruent integration of object and action

c. Nonspecific integration of object and action

d. Congruent integration of object and action

3. Integration of interaction with another object

a. Nature of interaction

1. Active - passive

2. Active - reactive

3. Active - active

b. Content of interaction

1. Malevolent

2. Benevolent

The importance of the human response on the Rorschach has been noted often in a variety of contexts, but generally with a minimum of theoretical elaboration. Aspects of these responses may have particular relevance for the study of the development of the concept of the object and its impairment in psychopathology. This scoring system is an attempt to apply developmental principles of differentiation, articulation, and integration (Werner, 1948; Werner & Kaplan, 1963) to the study of human responses given to the Rorschach.

Differentiation is defined as the nature of the response with human content; Articulation is defined as the degree to which the response was elaborated, and Integration is defined as the way the concept of the object is integrated into a context of action and interaction with other objects. Within each of these areas, categories were established along a continuum based on developmental levels. Within each category, ratings ranged from developmentally lower to developmentally higher levels.

CATEGORIES OF ANALYSIS AND SCORING PROCEDURES

SELECTION OF RESPONSES

A. Human and quasi-human responses.

All human and quasi human [H and (H)] responses are scored. Human and quasihuman details are scored if they 1) involve human activity, (e.g., talking, pointing, struggling) or 2) involve a substantial portion of the card and are not just a small rare or edge detail and 3) contain some description of explicit human or humanoid characteristics. Thus, independent of their location, the following responses would be scored:

"the face...of an old man with wisps of hair on the side"

" a man with sunglasses on"

"a girl's head"

"a baby's face"

"baby's hands with mittens on"

"face with a large hooked nose"

"faces of 2 angels"

B. Animal Responses

In some rare instances, animal responses are classified as quasi-human if the animal is explicitly given qualities that only a human could have. The exceptional quality of this classification must be emphasized. It is not meant to include all responses scored Animal Movement FM. Though the following responses might be scored FM, they would not be included as a human or quasi-human response:

1. Human-like actions which could be achieved as the result of special training and which might, therefore, be expected in the context of a circus act.
2. Activities which humans perform, but which can also be performed by animals (e.g., rubbing noses). The human content must be explicit. If, for example, "Bugs Bunny" is given as a response, it is scored only if Bugs Bunny is engaged in a clearly human action. Thus, Bugs Bunny crying or talking would be scored as a quasi-human [(H)] response.

Applying these criteria, the following animal response would be scored as quasi-human:

"a hookah smoking caterpillar...from Alice in Wonderland."

"two drunken penguins leaning on a lamp-post...they're definitely sloshed."

"two lobsters coming out of a saloon...and they kind of have their arms around one another."

"sea gull...laughing, making fun of somebody."

"two frogs...tete-a-tete...two angry frogs, their mouths are downcast."

"spiders (at an insect ball) eating spareribs."

II. SCORING PROCEDURES

A. Accuracy of the response. Responses are classified as perceptually accurate or inaccurate (F+, F±, F∓, F-). F+ or F± responses are classified as accurate and F- responses and F∓ responses are classified as inaccurate (Rapaport, Gill & Schafer, 1945; Allison, Blatt & Zimet, 1968).

B. Differentiation

Here responses are classified according to types of figures perceived; whether the figure or subject of the action are quasi-human details (Hd), human details Hd; full quasi-human figures (H); and full human figures, H.

1. Human Responses. To be classified as a human response, the figure must be whole and clearly human. Examples:

"People"

"Men"

"Baby"

"African natives"

2. Quasi-human responses. Here the figures are whole but less than human or not definitely specified as human. Examples:

"Witches"

"Dwarfs"

"Two opposing forces, sticking out arms and hands. Opposing forces, pitted against each other... looking at each other. With complicated...of talons, appendages, arms raised in combat...Person maybe...standing there, being very offensive and attacking."

3. Human details. Here only part of a human figure is specified. Examples:

"hands strangling"

"faces staring at each other"

4. Quasi-human details. Here only part of a quasi-human figure is specified. Examples:

"angel's face"

"witch's head"

"devil's face"

C. Articulation.

Here responses are scored on the basis of types of attributes ascribed to the figures. A total of seven types of attributes are considered. These types of attributes were selected because they seem to provide information about human or quasi-human figures. The analyses are not concerned with the sheer detailing of features or with inappropriate articulation. The analyses are only concerned with articulations that enrich a human or quasi-human response, that enlarge a listener's knowledge about qualities which are appropriate to the figures represented. For example, a response which states that a man has a head, hands, and feet does not enlarge the listeners'

knowledge about the man. Possession of these features is presupposed by the initial response, "man." An articulation such as "a man with wings" is not scored as an articulation because it is an elaboration which does not add to the specifications of the human or quasi human features of the figure.

There are two general types of articulation: the articulation of 1) perceptual and 2) functional attributes.

1. Perceptual characteristics.

a. Size or physical structure. For this aspect to be scored as articulated, descriptions of the figure must have adjective status. Thus, no credit is given in a response where an examinee only says that a man has feet or that a hand has fingers. Size or structure is only scored as articulated if there is a qualitative description of aspects of body parts or the whole body. Descriptions of bodies or body parts as "funny" or "strange" are not scored as indicating articulation of body structure.

Certain aspects of facial expression can be scored as articulations of size or structure. Included in this category are responses like "eyes closed" or "mouth open" in which the description of facial expression amounts to something more than just a description of physical appearance.

Applying these criteria, the following responses would be scored as articulations of size or physical structure:

"slim man"

"big feet"

"the top of the body is sort of heavy and her legs are real, real teeny"

"slanted eyes"

"chins protruding down from the face"

"eyes closed"

"mouths open"

"tongue was sticking out"

By contrast, the following responses are not scored as articulations of size or structure:

"women with breasts"

"they're shaped like people"

"eyes, nose, mouth"

"woman doesn't have a head"

"a pervert with bunny ears"

"person with wings instead of arms"

b. Clothing or hairstyle. For this aspect to be scored as articulated, there has to be a qualitative description of some aspect of either clothing or hairstyle. It must enrich the description of the figure. Simple mention of items of clothing implied by the response does not enrich one's understanding of the figure and is, therefore, not scored as an articulation. Using these criteria, the following responses are scorable as articulations of clothing or hairstyle.

"some kind of moustache..right above its mouth"

"girls with ponytails"

"hair and the things sticking out of them, feathers"

"their pants would have to be skintight and when they lean down, their jackets go pointing out, makes it look like a very tight jacket."

"a couple of witches with red hats"

"wearing a black coat and a homburg hat. Black coat is sort of billowing behind him..."

"...a full-tailed coat"

"two little girls, all dressed up in their mother's things"

"Gay 90's type women...Both wearing a long bustle and feathers in hair."

"An American Indian in some ceremonial costume with wings and paraphernalia."

"a man...with sunglasses on."

By contrast, the following responses would not be scored as articulations of clothing or hairstyle:

"Two women with skirts on."

"shoes on"

e. Posture Posture is scored if the response contains: a) a description of body posture which is separate from the verb describing the activity of the figure, or b) a description of facial expression that goes beyond mere articulation of the physical appearance of features in that it contains a sense of movement or feeling. Posture is not scored if body posture is implied in the verb rather than being separately articulated or if it is simply a description of a figure's position in space (e.g., facing outward).

Thus, the following responses are scored as articulations of posture:

"arms flung wide"

"head tilted"

"standing with legs spread apart"

"leaning on a lamp post"

"shoulders hunched"

"somebody hanging...dangling down, drooped,
formless, shapeless"

"eyes look piercing"

"gritting teeth"

"smiling"

The following responses are <u>not</u> considered articulations of posture:

"sitting"

"standing"

"doing a high dive"

"back to back"

"facing outward"

"mouth closed"

2. <u>Functional characteristics.</u>

a. <u>Sex</u>. For sex to be scored there either has to be a specific mention of sex of the figure or an assignment to an occupational category which clearly implies a particular sexual identity. If the final sexual identity is not decided but alternatives are precisely considered, sex is scored as articulated. If, however, the indecision is based upon a vague characterization of the figures with an emphasis upon the sexual nature of the figure as a whole, sex is <u>not</u> considered articulated. In the following responses, sex is scored as articulated:

"Man"

"Girl"

"Witch"

"Mother"

"Priest"

"either an old man or an ugly woman"

"2 boys putting on a disguise kit or a girl with her makeup kit"

By contrast, sex is <u>not</u> scored as articulated in these responses:

"Well, these look like two human figures. I think when you look at the breasts there, they're girls. Then down here could look like phalluses. I don't know. It's rather ambiguous, confusing...protrusions from the thorax, you know."

"Looks like two people. Could be a woman or a man. I debated this for a minute. (mean?) Well, this form could be women or the costuming of man. (?) Well, I guess it would be tights and sort of loose shirt. I don't know exactly."

"Two people beating drums in a way like both might be women. In another way, like men. Doesn't seem to be any real indication whether they are male or female. The rather extended chests seem to represent breast of women and protuberance on bottom seems to be leg. In these respects it has a bisexual appearance. There is something barbaric about the figures. Seems to be something of a representation of gods or something like that. They seem to be wearing high heel shoes. Both of the figures seem to be very awkward and look as though they're doing some clumsy movements in beating the drums. The heads also don't look human--look as though they're some kind of bird's heads."

b. Age. For this aspect to be scored, specific reference must be made to some age category to which the figure belongs. Thus, age is assumed to be delineated in the following responses:

"child"

"baby"

"old woman"

"young girl"

"little boys"

"teenagers"

By contrast, although some indication of age is implied in the following responses, the references are not specific. Thus, age is not scored in these responses:

"man"

"girls"

"boys"

"priest"

c. Role. When figures are human, a clear reference to the work a figure does (occupation) is scored as an articulation of role. With regard to quasi-human figures, role is scored if the manner in which the figure is represented implies that it would engage in certain activities rather than others. Thus, role is assumed to be articulated in the following responses:

"soldier"

"priest"[1]

[1] When sexual identity is clearly indicated in a role designation, both sex and role are scored as articulated. Such a situation exists in the following responses: "mother," "witch," "priest."

"Spanish dancer"

"ballet dancer"

"Princess"

"mother"

"witch"

"devil"

"elves"

Role is not scored in the following responses because there is no clear indication that they refer to occupation rather than a momentary activity.

"dancer"

"singers"

d. Specific identity. Here a figure must be named as a specific character in history, literature, etc.[2] Examples:

"Charles DeGaulle"

"Theodore Roosevelt"

3. Degree of articulation.

This is the simple enumeration of the total number of types of features articulated. In the preceding section, seven types of attribution were described (size, clothing or hairstyle, posture, sex, age, role and specific identity). Thus, for any single Rorschach response, a total of seven types of features could be articulated. The average number of features taken into account in each human or quasi-human response constitutes the score for the degree of articulation of individual figures. If, for example, a subject gave four human responses

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2 To the degree that age, sex, and occupation are clearly indicated in the specific identity, these features are also scored as articulated. Thus, in the response, "Charles DeGaulle," sex and occupation are specified. Such is not the case in the response, "piglet."

and attributed a total of ten types of attributes to them, his score for degree of articulation is 2.5.

D. Integration

Integration of the response was scored in three ways: a) the degree of internality of the motivation of the action (unmotivated, reactive, and intentional), b) the degree of integration of the object and its action (fused, incongruent, nonspecific, and congruent), and c) the integration of the interaction with another object (malevolent-benevolent and active-passive, active-reactive, and active-active). These analyses can only be applied to figures engaged in human activity.

1. Motivation of action.

The articulation of action in terms of motive implies a developmentally advanced perception of action as differentiated from but related to the subject. Moreover, motive can be ascribed in two ways: as reactive or as intention. Reactive explanations involve a focus on past events and behavior is explained in terms of causal factors; one assumes that, for certain prior reasons, an individual had to do a certain thing. By contrast, intentionality is proactive and implies an orientation toward the present or future. The individual chooses to do something to attain a certain end or goal. The ability to choose between motives and to purposively undertake an activity implies a greater differentiation between subject and action than is the case when an individual is impelled to take an action because of past occurrences. For this reason, the analysis of action will consider whether or not a motive was provided and whether the motivation was reactive (causal) or intentional.

a. Unmotivated activity.

Here action is described with no explanation of why it occurs. Examples:

"Two people kissing each other."

"Women looking at each other."

"Men leaning against a hillside."

b. Reactive motivation.

Here perceived activity is described as having been caused by a prior situation (internal or external) and the subject is seen as having little choice in his reaction. Examples:

"A German soldier on guard duty. I think he sees something and points his gun at it."

"Arabs recoiling from an Israeli bomb."

"A person afraid of a snake, standing on a rocky cliff with arms upraised as if he's going to hit it with something."

"Two women struggling over ownership of a garment."

c. Intentional motivation.

For motivation to be scored as intentional the action must be directed toward some future moment and the subject must be seen as, in some sense, choosing his action rather than having to react. Examples:

"Halloween witches, making incantations over the fire, in preparation for all hallows' eve."

"An orchestra conductor, his arms raised, about ready to begin."

2. Object-action integration.

In this analysis, four levels of integration of the object with its action are distinguished (fused, incongruent, nonspecific, and congruent).

a. Fusion of object and action. For a response to be included within this category, the object must be amorphous and only the activity articulated. In such situations, object and action are fused. The object possesses no separate qualities of its own. It is defined only in terms of its activity. This type of response is exemplified below. In both instances, nothing is known about the object except what it is doing. Examples:

"Two opposing forces, sticking out arms and hands. Opposing forces, pitted against each other...looking at each other. With complicated...of talons, appendages, arms raised in combat...Person maybe...standing there, being very offensive and attacking."

"Figure there with hands, standing with legs spread apart, reaching out with hands as if trying to grab something."

b. Incongruent integration of object and action.

For a response to be included within this category, there should be some separate articulation of object and action. Something must be known about the object apart from its activity. Nevertheless, the activity is incongruous, unrelated to the defined nature of the object. The articulation of action detracts from, rather than enriches, the articulation of the

object. Examples:

"A great big moth, dancing ballet."

"Two figures, one half human and one half animal holding two sponges."

"A little baby throwing a bucket of water."

"A satyr-thing bowling."

"Two sphinxes pulling a decapitated woman apart."

"Two beetles playing a flute."

c. Nonspecific integration of object and action.

Inclusion within this category also requires some separate articulation of object and action. However, the relationship between the two elements is nonspecific. The figures, as defined, can engage in the activity described but there is no special fit between object and action. Many other kinds of objects could engage in the activity described. Thus, while the articulation of action does not detract from the articulation of the object, neither does it enrich it.

Examples:

"One big person standing with arms raised."

"A knight, standing ready to do his job."

"Cavemen leaning against a hillside."

"Two figures dancing."

"Two older women trying to pull something away from each other."

"Two men fighting."

"A man running away."

"A person, sort of a girl, standing on her toes."

d. Congruent integration of object and action.

For a response to be assigned to this category, the nature of the object and the nature of the action must be articulated separately. In addition, the action must be particularly suited to the defined nature of the object. By way of contrast with the preceding category, the action must not only be something the object might do; it must be something that the object would be especially likely to do. There is an integrated and particularly well-suited relationship between the object and the specified action. Moreover, the articulation of the action enriches the image of the object.[3]

3. Integration of interaction with another object.

a. Nature of interaction.

This analysis applies to all responses involving at least two human or quasi-human figures. In addition this analysis can also pertain to situations where a second figure is not directly perceived, but its presence is necessarily implied by the nature of the action.

1. Active-passive interaction.

Two figures can involve a representation of one figure acting upon another figure in an active-passive inter-

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3 In situations where the role definition of the object amounts to nothing more than a literal restatement of the action, object and action are not considered integrated. Responses like "dancer's dancing," or "singer's singing" are scored as nonspecific (level 3) relationships. However, responses such as "ballerina dancing" or "character from a Rudolph Falls opera, singing" are classified as a congruent (level 4) relationship.

action. One figure is active and the other entirely passive so while acted upon, it does not respond in any way.

2. Active-reactive interaction.

In another type of interaction the figures may be unequal. One figure is definitely the agent of the activity, acting upon another figure. The second figure is reactive or responsive only to the action of the other. This is defined as an active-reactive interaction.

3. Active-active interaction.

In a third type of interaction, both figures contribute equally to the activity, and the interaction is mutual.

b. Content of interaction[4]

1. Malevolent: The interaction is aggressive or destructive or the results of the activity implies destruction or harm or fear of harm.

2. Benevolent: The activity is not destructive, harmful or aggressive. It may be neutral or it may reflect a warm positive relationship between objects.

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[4] Attached are examples for scoring both the nature and content of interactions. Notations in the left hand margin indicate scoring for the nature of the interaction. [Active-Passive (A-P), Active-Reactive (A-R), and Active-Active (A-A)]. Notations in the right hand margin indicate the scoring for the content of the interaction [Malevolent (M) and Benevolent (B)].

Integration of Interaction

Nature of Interaction		Content of Interaction
A-P	A couple of undertakers lowering babies into the pit.	M
A-P	A prostitute rolling a drunk.	M
A-P	Crucified man.	M
A-P	A mother holding out her arm and telling her kid never to come back.	M
A-P	Two sphinxs pulling a decapitated woman apart.	M
A-P	Two people kneeling down with hands extended toward and touching other people.	B
A-R	African natives beating a drum, Martians applaud..	B
A-R	Eve being tempted by a snake (snake seen on card)	M
A-R	Two people with hands up as if trying to ward off the two people coming to get them. Two guys with black capes... coming in to get the other people...	M
A-R	German soldier - think he sees something and points gun at it.	M
A-R	An orchestra conductor, arms raised, just about to begin.	B
A-R	A man running away.	M
A-R	A woman crying out for something...two forces pulling her apart, one is depression, one is suicide.	M
A-R	A man trying to kill a little girl, who's running away.	M
A-A	A woman with a child looking up at her.	B
A-A	Someone having intercourse, a man child and a woman child, trying to make love but not knowing how.	B
A-A	One person there is pointing and the other is listening.	B
A-A	Two people and two martians fighting.	M

106

Integration of Interaction

Nature of Interaction		Content of Interaction
A-A	Two women having a fight, calling each other names.	M
A-A	Two gremlins ready to hit each other.	M
A-A	People pledging hands together - like victors, walking along like that.	B

Scoring Outline

Categories of Analysis

I. Accuracy of response (F+ or F-)

II. Differentiation (Types of figures perceived)

(1) Human

(2) Quasi-human

(3) Human detail

(4) Quasi-human detail

III. Articulation

(a) Perceptual attributes

(1) Size or physical structure

(2) Clothing or hairstyle

(3) Posture

(b) Functional attributes

(1) Sex

(2) Age

(3) Role

(4) Specific identity

(c) Degree of articulation (# features articulated/ # responses)

IV. Integration

(a) Motivation of action

(1) Unmotivated

(2) Reactive

(3) Intentional

(b) The integration of object and action

(1) Fusion of object and action

(2) Incongruent action

(3) Non-Specific action

(4) Congruent action

(c) Integration of the interaction with another object

(1) Nature of interaction

(a) Active-passive

(b) Active-reactive

(c) Active-active

(2) Content of interaction

(a) Malevolent

(b) Benevolent

Summary: Structural Object Representations Scoring Outline

Categories of Analysis	Scores
I. Accuracy of response	F+ or F-
II. Differentiation	(1-4), total, subcategory
(1) Human	(4)
(2) Quasi-human	(3)
(3) Human detail	(2)
(4) Quasi-human detail	(1)
III. Articulation	(0-7), total, subcategory
(a) Perceptual attributes	
(1) Size or physical structure	(0-1)
(2) Clothing or hairstyle	(0-1)
(3) Posture	(0-1)
(b) Functional attributes	
(1) Sex	(0-1)
(2) Age	(0-1)
(3) Role	(0-1)
(4) Specific identity	(0-1)
IV. Integration	(0-12), total, subcategory
No action	(0, on all integration scores)
(a) Motivation of action	
(1) Unmotivated	(1)
(2) Reactive	(2)
(3) Intentional	(3)
(b) The integration of object and action	
(1) Fusion of object and action	(1)
(2) Incongruent action	(2)

(3) Non-specific action (3)

(4) Congruent action (4)

(c) Integration of the interaction with another object

(1) Nature of interaction

(a) Active-passive (1)

(b) Active-reactive (2)

(c) Active-active (3)

(2) Content of interaction

(a) Malevolent (1)

(b) Benevolent (2)

Total (1-23)

APPENDIX 3

APPENDIX 3

111

Alan Krohn, PhD

OBJECT-REPRESENTATION SCALE FOR DREAMS*

GENERAL INSTRUCTIONS:

First, read over the scale.

This scale attempts to register the sense the subject has of objects in his world - how primitive, shadowy, malevolent, anonymous, stereotyped, or one-dimensional they are on the one hand, or how full, defined, feeling and in general human and complete they are on the other. Your task is to infer this overall quality of the patient's inner object world from his dreams. Let the dream wash over you, let your clinical "feel" tell you how human, how real, how whole, and how mature are the people as the dreamer experiences them. The scale rests on your global sense of the dream and therefore I would like to encourage you to use your intuition and empathy in any way you can.

Each point on the scale is defined in three ways: a global description of the nature of the object world, some typical characteristics to look for in the dream, and a sample dream. I would like you to rely most heavily on the global description of the scale points and the sample dream that illustrates that description. The typical characteristics are features of the dreams that tended to correlate with each of the global descriptions. The criteria should be used as aids to your intuition and are not intended to be used instead of your overall sense of the dream. Indeed, if you have a clear sense of the dream's location on the scale and the dream does not contain any of the characteristics, simply ignore the typical characteristics. These characteristics are intended to be signposts to supplement your intuition, not constrict it.

SPECIAL SCORING NOTES:

1. Many dreams contain several characters. If a dream contains even one character that clearly meets the criteria in categories 2, 3 or 4, give particular weight to that.

2. If the dream seems to have two almost equally important portions with very different kinds of characters in each, give a score for what seems to be the more salient quality of the dream and then a supplementary code for the quality of the object in the secondary portion of the dream.

3. Dreams that contain no people (other than dreamer) in them present some special difficulties. Handle them as follows: first, indicate that there are no objects explicitly represented in them by the code NO, then try to code on the object representation scale by asking yourself if some inanimate object or animal in the dream seems to have human qualities. If something seems to represent, with some subtlety, a person, then score the dream in category 6. The final code would then be NO 6. These non-human elements which stand for objects may be buildings, the overall setting, animals or even place names. If nothing in the dream seems to represent an object, try to capture the overall object quality of the subject from the global descriptions in the scale and assign a code from categories 1-5.

* As well, the scale has been applied to the Early Memories Test and Rorschach Test productions and by therapists to their long-term psychotherapy patients (Krohn, A. and Mayman, M., Bulletin of the Menninger Clinic, 1974).

SCALE POINTS:

1. The subject's world seems to be completely lifeless, vacant, alien, strange; it is a world essentially without people; he experiences the world as very stark and static or very fluid and formless; in short, the world for him is an unpredictable, desolate, often strange and bizarre place that he only rarely understands.

For Example:
1. The dream is virtually devoid of people or human-like figures; if people are present as dream figures at all, they are unnamed, extremely vague, and incidental to the action of the dream.
2. The dream setting is either very fluid or almost frozen (or both).
3. As the dream is read it may give you a distinctly "other-worldly," unsettling feeling.

Sample Dreams:
I dreamt that I was walking into a forest, the birds were singing and the sun was out, then all of a sudden the trees, rocks and bushes began to melt, all run together with the ground, just everything all combining. Then the animals came running out of different places and coming after me and they too sort of started to dissolve into each other, to melt together.

I'm walking underwater and kind of half swimming and half walking through the water, it's all around me, this fluid maybe a little thicker than water, and there are large, whale-like things, but smaller than whales - someone I told the dream to said they seemed like they were like sperm, and as I walked through the water they part, just ahead of me. There may be more but that's all I remember of the dream.

2. The subject's internal world includes people, but not really alive, human, benevolent. People are insubstantial figures, prone to seem malevolent, brutal, murderous, extremely cold, mechanical, less than human. The subject's sense of people seems bizarre and distorted. More specifically, it seems that under the pressure of morbid, sadistic, murderous impulses and fantasies, people become transformed into malevolent, animalistic figures. There is no internal experience of real interaction among people, for others are experienced as little more than the subject's own primitive impulses incarnate.

For Example:
1. A figure in the dream is half animal, half human; animal turns into a person, or vice versa.
2. A dream character is dead, dying, about to die, or killed - each in either a bizarre, brutal, very explicit or morbid fashion.
3. A dream character or the dreamer is doing something which is bizarre, morbid or terribly brutal.
4. A person appears in the dream who is labeled a witch, devil, robot (a malevolent, cold, though not necessarily bizarre, humanoid figure).

Sample Dreams:
I was living in a big old house, with other people in it. B. from the library was there. Others came over, they were sloppy and asked if they could use the living room to study in. I didn't want them to but for some reason I consented. They were ugly people. One girl looked like a man. She had a mustache and short, blond hair. They just took over the place, assuming they could stay. I said no. N. came; I was afraid she would say they could stay. They were just about leaving. Then G. came - beautiful G. She was a little girl. I knew she was dead already. Her body was simply wrapped - being taken to her grave. She kissed me goodbye and

trotted out in a little gray coat. She didn't know it but she was going to her grave. I remember thinking whether they would make her lie down in the casket and just close it or would somehow put her to sleep first.

I was with a group of people in the front yard of a big white house. We were just sitting around talking about how nice the weather was. I don't remember how, but all of the people began to look like animals. My friends were some of the animals, I could tell by their voices who they were, there was a gorilla, (my boy friend), a zebra (a good girlfriend of mine) and various other people that I know. I didn't know all of them though, but they were all animals. I remember thinking that they were going to kill me, but they hadn't made any attempts or anything. I ran away into a child's playground and was playing on things there and I was coming down a slide and when I reached the bottom there were two animals whom I thought were waiting to "get" me, so I ran and I saw a construction site on the side of the road so I jumped into this big hole which had a big pile of dirt right next to it. I remember right after I jumped into the hole I thought that if I stayed in the hole and "if they" found me they would bury me alive. I climbed out of the hole and ran again; this time I ran back to the house where it all began. I rushed upstairs into a bedroom and sat frozen on the bed. I remember hearing some voices coming from downstairs so I opened the door when I heard "them" coming up the stairs. I ran to the stairway leading to the part of the house where they were at and the animals were people again. They had long knives in each hand and my boyfriend was leading the group. I ran back to the door and ran outside. It was raining, the sun was shining brilliantly and these little animals were climbing all over me, clawing at my face and scratching my arms and I tried to get them off me, but every time I knocked one off there was another to take its place.

3. People are experienced as insubstanial, fluid, more or less interchangeable, but are not experienced as malevolent as in #2. Though people do not seem bizarre or aggress against one another as in previous categories, the subject experiences others in a vague, fluid and undefined fashion. The subject cannot really articulate what someone means to him, because he has such an undifferentiated concept of what other people want, feel or do. Such subjects may be unsure who did what to whom, for his internal representations of other people are so unstable, diminshed and distorted and because his sense of his own boundaries and the boundaries of other people is so poor. This category is very similar to #2 but different in important ways too: the subject experiences others as confusing, fluid and without any enduring characteristics he can bank on, but not pervasively malevolent, weird, mysterious or strange. Listening to this kind of subject describe an interaction, one would continually hear rather flagrant contradictions in the way other people are depicted. This arises out of the subject's limited capacity to form a meaningful "gestalt" of another person, leaving him with a set of moment-to-moment impressions that fail to capture what is enduring and salient about other people.

For Example:

1. A person changes into another person, comes to resemble another, is a combination of two people.
2. Some aspect of a dream character changes in an unreal way in the dream.
3. A dream character is a combination of two innocuous, stereotyped, fictional or distant public figures - elves, gremlins, actors.
4. An animal metamorphoses in some way.
5. A person is dead or killed, but in non-bizarre ways, in inexplicit ways - usually not in front of the dreamer, usually not including gory details.

Sample Dream:

I dreamed I was coming here to see my therapist and I walked in and he was sitting there as he usually does, but he was different because he was just like he usually is up to his shoulders and neck, but from his neck up he looked like a dwarf, as if his head were very small.

4. The subject's experience of people is to a very great extent fashioned around the need they can quite directly gratify in the subject and/or around the needs the subject can directly gratify in the other. In this sense people are experienced in a very incomplete way: aspects of the other that do not bear directly on the exchange of gratification are only partially perceived and understood. Put another way, the tremendous importance of other people as gratifiers leads the subject to be only vaguely aware of qualities of the other that exist apart from its need-gratifying function.

For Example:

1. Very minimal interaction of a dream character with the dreamer, and what interaction there is involves the dream character satisfying emotional (instinctual) needs of the dreamer and/or the converse situation.

2. People interact predominantly on a feeling level with the dreamer, without much explicit interaction.

3. Dreamer is involved in self-directed activity exclusively - preening, admiring own body, practising something - with others watching or absent.

Sample Dreams:

My girlfriend B. and I are at the carnival at night with another couple. We are walking down this dark alley and I now notice how really sexy this other girl is. As if by my silent command she walks over to me and embraces me. She is rubbing her beautiful legs up and down on mine as we stood there in the dark. I looked up to see what Becky would do and this other guy came over to her and started to seduce her Bob, Ted, Carol and Alice-style. I got very mad and started punching this other girl; the dream ended there.

The second dream was about a young girl in the hospital. The hospital beds were very comfortable and the food was good. The girl did not seem to be suffering much. The girl's mother was very kind and very concerned while the girl was in the hospital. When she left the hospital the warm feelings faded. The mother and daughter went to the pier and there was a lot of noise and confusion. The mother was being "tempted" by a man offering her perfume. The girl kept thinking how happy she was at the hospital with the clean covers and the pretty, colorful bedspreads.

5. The subject's world is experienced as populated with other people who are neither fluid nor massively distorted by poorly integrated affects, but who do not have real identity. There is a sense that people are more or less interchangeable for the subject. People either seem very shadowy and their motives are unclear to the dreamer, or else they are experienced in stereotyped ways. People do not really make sense to the subject: for example, he hears them but is often unsure of how they are meaning what they are saying; he is either deaf to what is implicit in what they are saying or reads a great deal of implication and hidden messages into what they are saying. There is no real depth, specificity or uniqueness to the people in the subject's world. His world seems to be populated with "passers-by," so to speak, who either differ little from one another or who fall into one of several rigid, superficial categories. These subjects may try to use highly intellectualized, at times "symbolic" notions of people.

For Example:

1. If people known to the dreamer appear in the dream, they are involved in no thought, feeling or intention; they may be doing things, but with no sense of goal or intent; there is no explicit interaction with the dreamer; people may even talk to the dreamer or minimally interact with him, but the interaction or conversation is really only part of some action in the dream.
2. All the people in the dream are anonymous or nearly so.
3. Much said and done by others in the dream seems unclear, vague, nonsensical, "implicit" to the dreamer or highly symbolic.
4. People in the dream are described as innocuous stereotypes ("lazy men," "lumberjack types").

Sample Dreams:

I was walking or driving down a street that seemed like C. road (near where I grew up). The houses were very ordinary. I especially noticed many men standing around (I was alone). The men all seemed to be wearing blue denim pants and shirts and cowboy hats. They all seemed like truck driver types. Soon I was with someone (I think), probably my friend E. (female), and we were driving away from them, but we still saw some along the way. We drove on a winding country road - sunset. It was hilly and green. Although the guys didn't bother us we were fearful (or I was) of them.

A male person (I think it's me) is captive by a group of other males, all wearing white coats. There is a discussion of when to ask for ransom. Someone said at night, because newspapers work faster at night. Then they decide to execute. Someone says it would be too obvious if the whole group did, because everyone could tell who did it by the white coats, so one person is chosen to do it on his own. Someone says to do it in the day because "at the newspapers, the work lights shone brightest at midnight." Then someone else said, "But it's only 4:30 in Algeria."

* * * * * *

In the categories that follow the subject has a much richer experience of people, is more tuned into their needs, motives and individual differences. People become more defined and therefore more unique and individual for the subject. Fantasies, fears, needs, guilts and conflicts among them all have an impact on the subject's feelings towards others, but others always maintain a basic humanness and wholeness within the subject. Categories 6-8 try to tap differences in the amount and quality of internal commerce with objects. Beyond feeling whole and human, how much range does there seem to be in the subject's inner repertoire of objects? How much and how readily does the subject consider the feelings and implicit aims of those around him? In general, how subtle and differentiated is his experience of others?

6. The subject has a firm hold on objects and generally conforms to the description above. However, he does not readily, whether for defensive or characterological reasons, try to understand the inner experience of other people - their feelings, thoughts, wishes, etc. Due to neurotic preconceptions and preoccupations, people do not feel to the subject to be able to interact in easy, mutual fashion. Neurotic conflicts lead the subject to want to be with people, but in a parallel activity or at a safe distance from others. This type of subject is dealing with his conflicts by steering clear of others, avoiding the more intense involvements particularly, that bring his conflicts to the fore and cause him discomfort. This subject might be little aware of any intense conflicts, being only in touch with an overall sense that his life is not as full as he wants it to be.

For Example:

1. As you read the dream you get a sense that someone specific is being represented in the dream, far less interchangeable than in lower categories. The dream characters are, in a global sense, believable. There is, however, very little explicit interaction of the characters in the dream and virtually no account of the thoughts, feelings or wishes of the dream characters.

2. When people do interact in the dream it is fundamentally parallel activity (everyone painting, walking, etc.) rather than much mutual, complementary interaction.

3. There will be some dreams in this category in which no people appear, but in which some inanimate object will have object-like properties. Or, something about the setting (its detail, degree of differentiation, the presence of things done by people or made by them, etc.) which contains or implies this level of object representation capacity.

Sample Dreams:

I was in an apartment where apparently I lived. I lived there with several people but J. is the only one I can remember. We had a fight. He decided that he would move out. He took all of his stuff, and all of his books, many of which were mine. I was so relieved that I didn't even notice about the books till later. He had a small electric saber saw that he was cutting up the bookshelves with. Then he left; and I got an electric skillsaw, a considerably bigger one, and did the same thing. Someone asked me why I did this, and I said that it was because the saw J. had used was not big enough.

(The following dream is particularly illustrative of Criteria 3.) The dream concerns the nursery school I went to when I was 3 and 4 years old. I am coming back to it as an adult. I real life I have a violin and a classical guitar. Dream scene is at the nursery school and I am trading my violin with someone for a better one. I then play the instrument - much better than in real life. I then pick up my guitar and play it beautifully, though I don't know how to play it in real life and am afraid to try. Then I see myself in the house of the nursery school. I note the nice children's toys on the shelves. The house has many connecting rooms (as in real life) and the wood of the walls and floors is very interesting because it forms patterns. Very thin planks of wood. There are objects covered with tarpaulin. Someone says the school is closed up now. The little children don't come there anymore. I think about the planks - how beautifully they decorate the place.

7. The subject experiences people with a good deal of sensitivity and acuity. They are unique, varied and rather well defined for him. He is aware of important, subtle differences among people, both in terms of changes in moment-to-moment and day-to-day moods and attitudes, as well as overall differences in character of those around him. People seem to be central to the subject's inner life, even if neurotic conflicts lead him to experience them in childish, transference-dominated ways. He seems to be "in touch" with people affectively.

For Example:

1. Dream characters explicitly interact with each other or with the dreamer. The thoughts and feelings of at least one character besides the dreamer are noted.

2. You get the sense that the dream characters are defined sufficiently well that you might recognize one or more of them in another dream (besides than by their names).

3. The dreams in this category as well as those in #8 are very vivid, and the relationships among the dream characters, though peppered with the absurdity

of dream consciousness, is generally cogent and believable.

Sample Dreams:

I was in a large department store with my father, mother and youngest daughter. My daughter and mother had separated from dad and I, and we were just walking around, talking, and looking at various items in the store. We must have been in the hardware section, because I remember looking at certain tools, etc. My dad looked over a wheelbarrow which he felt he needed. I remember thinking that he was too old to be purchasing a wheelbarrow, as well as the fact that he probably wouldn't be using it that much. We also looked and priced bathroom facilities, because he was thinking of adding another bathroom to his house. For some reason we did not meet my mother and daughter until we returned home (my parents'). I remember coming into the house and looking for them. My mother was in bed complaining of a backache or something, and my daughter was standing nearby. I felt that this was a way of telling me that she did not enjoy looking after my daughter in the store and that it had "got her down."

I dreamed I was getting married to a guy I know (but not all that well) named A. I know we went through the ceremony, which is rather vague to me now. What is vivid is the wedding celebration. It was a sit down dinner held in a large room of some building (probably a hotel). There were a lot of people. Before the dinner I remember throwing my bouquet to the single girls over my shoulder and yelling "byork." My sister Debbie caught it. It didn't fly far, only to her. She was in front of the group. It was a white bouquet of flowers and I was wearing a beautiful white wedding gown that made me feel beautiful and happy. I threw the flowers to the girls who were surrounded by other people and also the orchestra....The next part was dancing (the next item on the agenda of a wedding reception). A. and I were to go in and "start the dancing." I picked my skirt up, gathered it together and we started walking towards the room. I then looked at A. in a quizzical fashion, asking him if I ever danced with him before, and then said, oh, yes, that one time at Margie's wedding (a real incident that did occur). I remember feeling sort of shy about the whole thing. Then we were at the entrance of the social hall and my parents were at the other side of the long hall that you had to come down before you got to the room. They were telling us to first wait for them before we began dancing. It was exciting and typically Jewish. I woke up somewhere around here....also I didn't know anyone at the reception. Not that they were strangers, just that they were "people."

8. The subject lives in a lively world of fully human objects. There is a sense of rapport with people and a well-developed understanding of their thoughts, feelings and conflicts. There is a well-articulated internal model of people being involved with each other, including an understanding of why they form relationships, why they get out of them, and what interferes with them. Others' behavior and personal characteristics are considered in perspective, remain open to reinterpretation, etc. There is a good deal of self and interpersonal awareness, indeed, a psychological-mindedness. Relationships are, for the most part, not neurotically conceived.

For Example:

1. A reflective comment is made in the dream report about what the dream is saying, or the self in the dream reflects during the dream on some aspect of his feelings toward another dream character, or on some aspect of that character's conflicts. More than reporting the feelings or wishes of a dream character, the subject spells out an awareness of some conflict(s) in the character, himself or their relationship.

2. There is a creative use of humor in the dream, particularly centering around the human characters in the dream.

3. There is something particularly distinctive and subtle about a dream character noted by the subject.

4. The dream characters and their interactions seem only minimally directed by neurotic concerns. There is a maturity about the dream characters.

Sample Dream:

I dreamt I was with L., my teacher in the math section I'm in. In the dream he had this rather absurd hat on, it reminded me in the dream of something I'd seen in the circus. He came up to me and someone else who was with me, but who isn't clear, and suddenly started to deliver this serious speech about the terrible state of the economy, and then about the importance of ecology and threw in, for some reason, something about the price of clover in Britain. I asked him why he was telling me all this and he asked me if I wasn't interested and I said no, I'm not, and that he seemed not to be either, that he seemed to be trying to be a clown and serious at the same time, like he wants to clown around but is always pulling himself back to being so serious, as if he thinks it isn't right to clown around (this is something I've begun to think about this guy in real life). He seemed to hear me in the dream, but changed the subject, as if he didn't like what I'd said to him.

APPENDIX 4

Examples of Changed Human Percepts

Intake	20 Months
This looks like maybe birds with hearts and blood flying around. Heart's on table and there's bone in their hearts. (Card 3, Subject #11, Group Psychotherapy plus Medication [PM])	This looks like two men standing there and objects flying around.
Two men and butterflies and blood spots. Very abstract . . . (Card 3, #7, Group Psychotherapy Only [PO])	Two guys pulling on something.
Something dancing--like a cartoon in a way, of a person, like people dancing, floating through the sky . . . a person bent. (Card 3, Subject #25, Group PM)	Two natives dancing over a pot.
Two people, two Martians or two girls--red and black, tits, head, body, dong . . . ding dong. (Card 3, Subject #23, Group PM)	Two women pulling on something, bust, back-end and high-heel shoes, head.

FOOTNOTES

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[1]Hans Strupp (1978) has characterized the challenge facing psychotherapy researchers as one of demonstrating that psychotherapy is not a "unitary process." Patient variables, he states, must be selected according to their fit with other process and outcome variables. Moreover, he states that researchers frequently fail to take seriously the role of values in outcome research. Clearly, the present study has focused on a system of values that favors the patient's experience as a most important outcome measure. But even within the context of "measuring" the patient's experience, the present study imposes the values for "maturity" as more or less dictated by object relations theory.

[2]Interestingly, the study in which Schwager and Spear (1981) failed to find changes in traditional Rorschach indices of ego functioning was conducted at the Menninger Institute. As in the present study, the investigators were examining very disturbed patients who were being treated with exploratory psychotherapy.

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