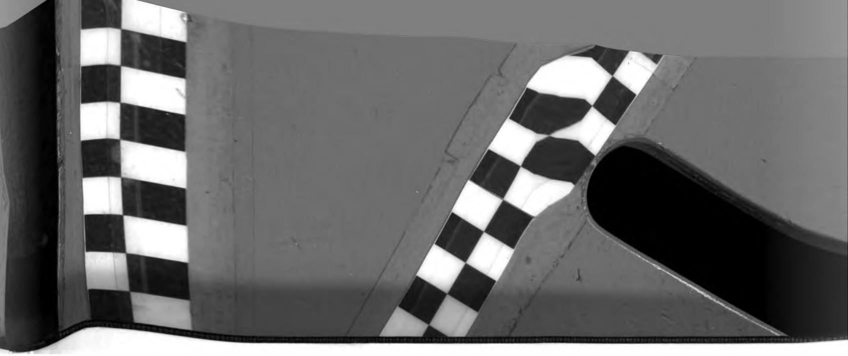
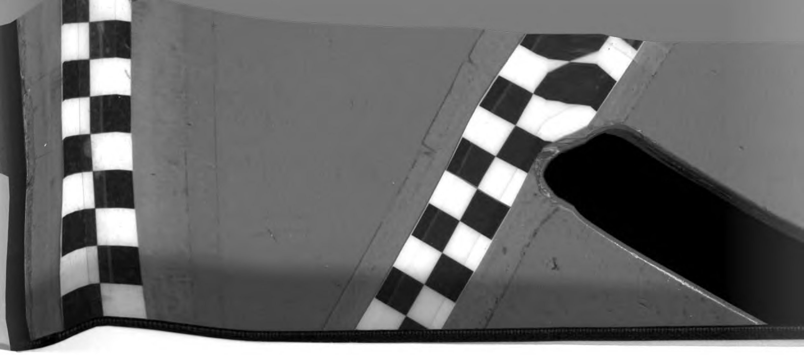
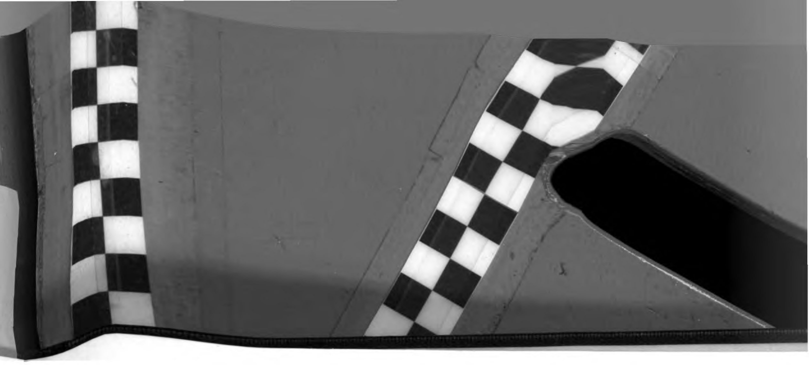






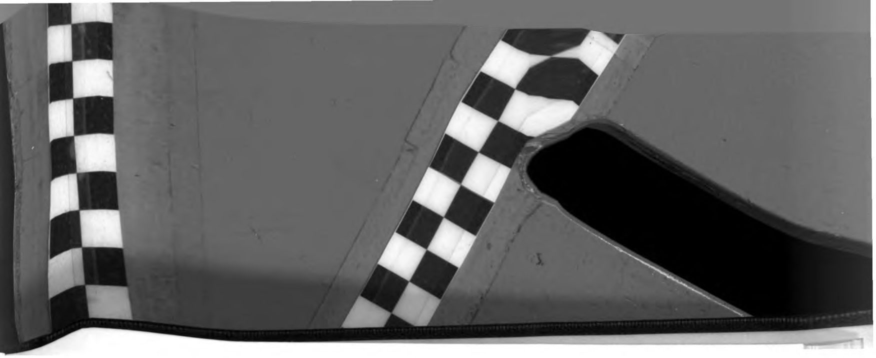
ABSTRACT

PROCESS-REACTIVE SCHIZOPHRENIA: EGO-STRENGTH AND SELECTED PSYCHOSEXUAL DIMENSIONS

by Nick Figetakis

A psychoanalytic rationale was applied to the concept of a process-reactive schizophrenia continuum. Several research hypotheses were derived from theory, pertaining to differences among schizophrenics in levels of personality organization. The specific problem areas selected for investigation were ego-strength, psychosexual drive categories, love-object orientations, and identification process outcomes in process-reactive schizophrenia.

The design of the study involved the differentiation of a sample of hospitalized male schizophrenics in terms of the process-reactive distinction. For this purpose, the Elgin Prognostic Scale was applied to case-history material. The subjects were administered the Barron Ego-Strength Scale, the Draw-A-Person Test, and the Blacky Picture Test as measures of the psychological dimensions constituting the problem focus of the study. The subjects were then compared statistically on several relevant test measures, as a means of determining individual differences in the psychological test variables.



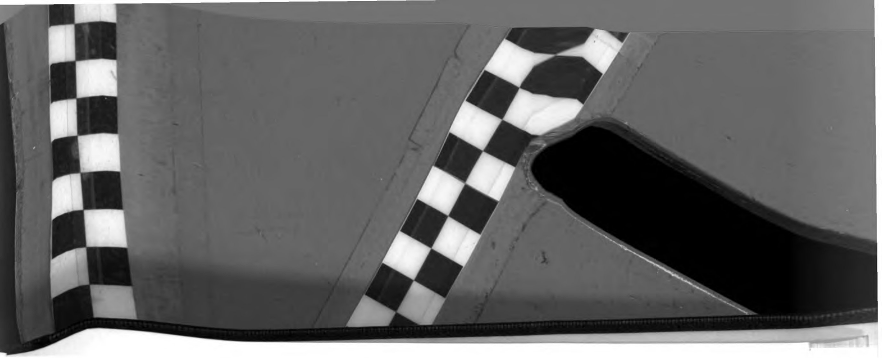
Nick Figetakis

The findings supported the majority of the research hypotheses. To briefly summarize the statistically significant results, it was found that:

A. Barron Ego-Strength Scale scores are negatively correlated with Elgin Prognostic Scale ratings, with subjects rated as reactive schizophrenics tending to produce the larger Barron scores, indicative of higher levels of ego-strength.

B. Draw-A-Person Test sexual differentiation ratings are negatively correlated with Elgin Prognostic Scale ratings, with subjects rated as reactive schizophrenics tending to receive sexual differentiation ratings that correspond to higher genetic-levels of sexual identification development.

C. Blacky Picture Test orality factor scores are positively correlated with Elgin Prognostic Scale ratings, with process Elgin rated subjects tending to produce the larger factor scores reflecting higher levels of oral drive motivation.



D. Blacky Picture Test heterosexual phantasy factor scores are negatively correlated with Elgin Prognostic Scale ratings, with subjects rated as reactive on the Elgin Scale tending to produce the larger factor scores, indicative of higher levels of phantasy involvement with the opposite sex.

E. Blacky Picture Test narcissism factor scores are positively correlated with Elgin Prognostic Scale ratings with subjects rated as process schizophrenics tending to produce the larger factor scores, reflecting higher levels of involvement with self as love-object.

The results did not provide support for the other hypotheses, which dealt with levels of anal and phallic drive motivation, and levels of parental identification among schizophrenics. Definite trends were found, however, in the data, and they were all in the predicted directions. It would appear, therefore, that these latter hypotheses define problem-areas of some promise for future research in process-reactive schizophrenia.

Nick Figetakis

The findings were discussed in terms of psychoanalytic principles of psychopathology. A crucial explanatory role was assigned to the concepts of fixation and regression, in their psychotic forms, as a means of interpreting differences found among these schizophrenic subjects on the psychological tests.

Approved Albert I. Rabin
Major Professor

Date Aug. 26, 1963

PROCESS-REACTIVE SCHIZOPHRENIA: EGO-STRENGTH AND SELECTED PSYCHOSEXUAL DIMENSIONS

By

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N.F.

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INTRODUCTION

PROCESS-REACTIVE SCHIZOPHRENIA

The Process-Reactive Classification

The process-reactive system employs life-history and prognostic variables to classify schizophrenics (Kantor, Wallner, and Winder, 1953). It has enjoyed extensive popularity in the last decade, particularly for research purposes. As Herron (1962) points out, the system's basic appeal stems from its capacity to significantly reduce categories of response variability among schizophrenics. It does this by allowing more homogeneous groupings than can be made with several other methods, such as conventional neuro-psychiatric sub-type diagnoses ("paranoid", hebephrenic", etc.). The process-reactive classification has another advantage for research in schizophrenia. As numerous studies have shown (e.g., Becker, 1956; Farina, 1960; Zigler and Phillips, 1962), the classification has heuristic value as a means of selecting variables that distinguish groups of schizophrenics defined by process-reactive criteria.

Process-Reactive Criteria

Although the definitions of process-reactive schizophrenia differ slightly among investigators, the factors of

pre-morbid social adjustment, the nature of schizophrenic onset, and prognostic outcome typically have been employed to distinguish groups. These variables have been incorporated in several process-reactive rating scales.[1] They provide a quantitative basis for classifying schizophrenics for research purposes. In this study, the Elgin Prognostic Scale (Wittman, 1941) will be used to differentiate schizophrenic subjects.

Zigler and Phillips (1960, 1961, 1961) have been the most vocal spokesmen for the use of pre-psychotic social-sexual adjustment ratings. Other investigators (e.g., Wittman and Steinberg, 1944; Kantor _et al_, 1952) have emphasized more traditional criteria, such as nature of psychotic onset, and typicality or atypicality of presenting symptoms according to Kraeplin's description of dementia praecox, the classic prototype for process schizophrenia. This latter approach has an extensive history, and was inspired by Bleuler (1911). It culminated in a series of prognostic studies defining what are currently called process and reactive schizophrenia (Paskind and Brown, 1940; Chase and Silverman, 1943; Hunt and Appel, 1936; Wittman and Steinberg, 1944; Kant, 1940, 1944).

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[1] Investigators usually give preference to one of three rating scales: Phillips' Pre-Morbid Adjustment Scale (1953); Kantor, Wallner, and Winder's set of criteria (1953); and the Elgin Prognostic Scale (Wittman, 1941; Becker, 1956).

Composite Description of Process-Reactive Schizophrenia

Process schizophrenia generally has the following characteristics: a) grossly inadequate pre-morbid adjustment (Phillips, 1953), b) an insidious and gradual onset of symptoms in the absence of significant environmental stress (Langfeldt, 1937; Kant, 1944) c) presenting symptoms of a kind corresponding to classical descriptions of dementia praecox (Kant, 1940; Kantor et al, 1953), and d) an unfavorable prognosis (Wittman, 1941).

In contrast, reactive schizophrenia has the following characteristics: a) a generally adequate or, perhaps, neurotic pre-morbid adjustment (Phillips, 1953), b) an abrupt schizophrenic onset of a precipitous nature (Kantor et al, 1953), c) some atypical, i.e., non-schizophrenic, kinds of symptoms (Kant, 1944; Chase and Silverman, 1943), and d) a generally favorable prognosis (Phillips, 1953; Wittman and Steinberg, 1944, Langfeldt, 1937).

Continuity - Discontinuity

The process-reactive distinction evolved as a schizophrenic dichotomy. Various terms have received preference, among them "evolutionary-reactive" (Ausubel, 1952), "malignant-benign" (Kant, 1940), "process-schizophreniform psychosis" (Langfeldt, 1937), and "dementia praecox-schizophrenia" (Bellak, 1948). Currently, the term "process-reactive" (Kantor et al, 1953), is

most often employed, along with Phillips' (1953) terms "good" and "poor pre-morbids".

As these rubrics imply, process and reactive syndromes have been considered as discrete in their underlying dimensions. Lately, however, the trend has been to view schizophrenia on a continuum, with process and reactive syndromes as end-points (Becker, 1959; Garmezy and Rodnick, 1959; Kantor and Winder, 1959). This study will similarly assume process-reactive continuity, since such an approach appears to be most compatible with contemporary findings (Becker, 1959) and with current thinking about the nature of the variables subsumed under the concept (Zigler and Phillips, 1962).

Process-Organic Versus Reactive-Psychogenic Issue

Despite the failure to find any somatic etiological factors in schizophrenia (Kety, 1959; Arieti, 1959), persistent efforts have been made to link process schizophrenia with organic factors and reactive schizophrenia with purely psychological disturbance (e.g., Kretschmer, 1925; Langfeldt, 1937; Bellak, 1948, 1958). Addressing themselves to this issue, several contemporary investigators in the process-reactive field have concluded that the process-organic versus reactive-psychogenic hypothesis is untenable (Becker, 1949; Garmezy and Rodnick, 1959; Herron, 1962).[2] As Zigler and Phillips (1962) point out, the

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[2] McDonough (1960) and Jacobs and Figetakis (1963) have conducted laboratory studies on one facet of this issue: organic brain damage as characteristic of process schizophrenics, with negative results. Brackbill and Fine (1956) and Tutko and Spence (1962) investigated the same issue with psychological tests of organicity. Although they obtained positive results, such indirect psychological findings cannot be construed to be definitive evidence of central nervous system dysfunction.

popularity of this notion appears to stem from the belief that process and reactive schizophrenia are discrete types, whose etiology must therefore be different.[3]

Alternative Theoretical Approaches

Several theoretical formulations of process-reactive schizophrenia have appeared recently in the literature. They are summarized below, since each makes a contribution to the theoretical rationale of this study.

Becker's schema (1959), as with the others, posits process-reactive continuity. Process and reactive syndromes define opposite ends of a developmental continuum subsuming levels of personality organization. Genetic-developmental principles are used by Becker to conceptualize differences among such schizophrenics in perceptual-cognitive variables.

Kantor and Winder (1959) have elaborated upon a comprehensive theory of process-reactive schizophrenia. They use Sullivan's concepts to formulate a theory which systematically relates symptom outcomes to antecedent events in five stages of development, as outlined in Sullivan's interpersonal theory.

Fine and Zimet (1959) employ a traditional psychoanalytic approach, as will the present study. They describe differences

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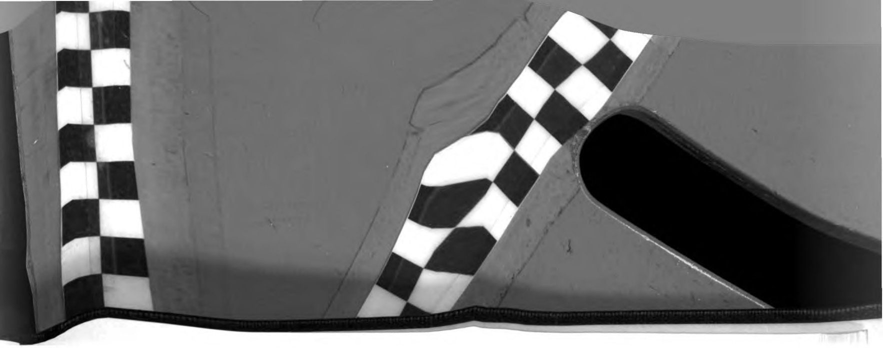
[3] The psychodynamic rationale of this study implies that at least part of the complete etiology of both process and reactive schizophrenia is of a psychogenic nature.

of a theoretical nature in type of psychosexual pathology, and the effects of such instinctual disturbances upon the development of ego-functions.

STATEMENT OF THE THEORETICAL RATIONALE

Theoretical Premises

It is assumed that schizophrenia involves degrees of regression which are more extensive for process than for reactive ends of the continuum. Although not universally accepted (Zigler and Phillips, 1962), this assumption is an indispensable element of all contemporary theoretical proposals (Becker, 1959; Kantor and Winder, 1959; Fine and Zimet, 1959). It is also assumed that during life-development, abnormal integration patterns occur earlier in childhood for process than for reactive schizophrenics. This assumption is also explicit in the above three formulations. The regression assumption cannot be directly substantiated or refuted at the present stage of empirical knowledge on process-reactive schizophrenia. The fixation assumption, however, gains some measure of support from historical material on such schizophrenics, although it is usually of a retrospective kind. At any rate, differential levels and degrees of regressive mechanisms and fixation (developmental arrest) processes will be considered as assumptions rather than facts.



Process-Reactive Ego-Strength

To summarize various psychoanalytic writings on schizophrenia (Freud, 1914, 1921, 1924; Fenichel, 1945; Bellak, 1948, 1958; Federn, 1951), it may be concluded that "ego-strength" (Barron, 1953) disturbance varies with the extensiveness of regressive attempts to solve an internal conflict situation. The severity of regression, in turn, appears as a function of debilitating instinctual fixations. Other events of a psychodynamic nature may contribute to ego-strength impairment in schizophrenia. The central mechanisms and processes, however, that result in pathological alterations in reality-testing, etc., are psychotic regression, and instinctual fixations at infantile levels of psychosexual development.

Assuming that schizophrenics on a process-reactive continuum systematically differ in degree of regression and level of development at which instinctual fixations occur, corresponding degrees of ego-strength impairment may then also by hypothesized. It is proposed, accordingly, that among schizophrenics, the synthetic, integrative functions mediating between internal demands and environmental requirements for adaptive adjustment ("ego-strength") become differentially impaired in degree. The defects are hypothesized to be greatest at the process end and smallest at the reactive end of a process-reactive continuum.

Research Findings

Several studies have evaluated individual functions subsumed under the concept of ego-strength. The various findings are consistent with the rationale elaborated above. Becker (1956) found that process schizophrenics produce "genetic-early" Rorschach responses, and reactives "genetic-late" responses. Process schizophrenics were also found to respond at lower levels of abstraction to the Benjamin Proverbs test than did reactive subjects. Becker concluded from these results that severe perceptual-cognitive immaturity (fixation) is fairly exclusive characteristic of process syndromes. Reactive syndromes represent a higher genetic level of development which in many instances approximates normal adult levels.

Fine and Zimet (1959) replicated Becker's study with the Rorschach, and obtained similar results. They interpreted their findings in a psychoanalytic context, concluding that process schizophrenia mirrors early ego-impoverishment that leads to impulses breaking through more readily than in reactive schizophrenia. More recently, Fine and Zimet (1962) found that in process schizophrenia, "primary process" Rorschach responses predominate over "secondary process" responses, while the reverse situation holds for reactive schizophrenics. They concluded that this finding is consistent with psychoanalytic expectations. They posit drive-dominated percepts in process conditions, and ego-dominated percepts in reactive conditions, due to differential maturational levels of genetic development.

Tutko and Spence (1962) have shown that process and reactive schizophrenia both involve some degree of intellectual deficit. When compared on the number of adequate responses made to the Goldstein-Scheerer Object-Sorting test, the two groups did not differ significantly, and both were inferior to normal controls. Analyzing the errors, however, in terms of an abstract-concrete dichotomy, they found that process subjects tended to make errors of a concrete nature, and reactives tended to make errors involving over-abstraction. The authors conclude that these findings tend to point toward a qualitative but not quantitative difference between process and reactive schizophrenics in cognitive impairment.

Viewed in conjunction with Fine and Zimet's latest study (1962), the Tutko and Spence findings lend support to the notion of differential levels of ego-impairment and maturation in process-reactive schizophrenia, since the concepts "primary-secondary process" and "abstract-concrete attitude" have similar meanings (Hilgard, 1962). Both studies point toward defects in process outcomes that correspond to genetically inferior levels of integration of ego-capabilities. As also found by Becker (1959), these studies suggest that reactive schizophrenics, on the other hand, achieve at higher levels of genetic maturation and/or do not regress to as low levels of integration as do process individuals upon becoming overtly schizophrenic.

Zigler and Phillips (1962) have found that pre-morbid adjustment ratings are significantly correlated with genetic level of presenting symptoms ratings in schizophrenics. Since severity of symptoms may be understood as related to the degree of fixation-regression during overt schizophrenia, (Fenichel, 1945), than these findings are compatible with a psychoanalytic view of process-reactive syndromes.

Process-Reactive Psychosexuality

This summary of the theoretical tenets on instinctual developments in schizophrenia draws from the writings of Freud (1911, 1914) and Fenichel (1945). During overt psychosis, the schizophrenic regresses to "primary narcissisim", the infantile state in which the organism is the exclusive object of instinctual gratification. External objects (people) are of little interest to the schizophrenic, save as means of obtaining self-centered need-satisfactions. Heterosexual interests become secondary to homo-erotic aims.

The major instinctual pre-dispositions for schizophrenia stem from fixations during the oral-receptive stage of psychosexual development. Overt schizophrenia represents a psychotic form of regression to the oral mode of gratification.

Schizophrenic regression may reinstate pre-genital drives other than just oral in nature. Anal and phallic drives may also become manifested, as undefended drive-components, or in symptom forms. Only oral fixations, however, are necessary

schizophrenia. Anal and phallic disturbances are considered incidental components of generalized schizophrenic disorganization.

In the special case of process-reactive schizophrenia, very little of an explicit nature appears in the psychoanalytic literature. Fenichel (1945) and Kasanin and French (1941) do describe, however, some schizophrenic syndromes which they label as reactive in nature. From a theoretical standpoint, these authors speculate that the dynamics of such syndromes may not adhere to the traditional view of schizophrenia, as briefly described above. These authors tentatively propose that reactive schizophrenia may involve neurotic fixation points, i.e., anal and/or phallic disturbances, that are only incidental to typical, i.e., process, schizophrenic outcomes.

This theme has been recently revived by Zimet and Fine (1959), who argue that process schizophrenia reflects early oral deprivation, and reactive schizophrenia instinctual fixations at some later pre-genital stage of psychosexual development. Accordingly, it is hypothesized that oral-anal-phallic disturbance differs in degree along a process-reactive continuum, with process syndromes involving the least and reactive syndromes the most anal-phallic conflict components. In contrast, it is hypothesized that orality is more basic to process than to reactive syndromes.

Additionally, it is hypothesized that the degree of narcissisim in schizophrenia systematically varies along a process-reactive continuum. The process pole identifies individuals whose object-orientation is most self-directed, and non-heterosexual.

Research

No studies appear in the literature on pre-genital drives in process-reactive schizophrenia. A conceptual direction for research in this area, however, is afforded by psychoanalytic theory of schizophrenia. One aim of this study is to explore some notions about psychosexual disturbance in process-reactive schizophrenia, generated from a psychoanalytic interpretation.

Process-Reactive Sex-Role and Parental Identifications

The psychoanalytic literature is nearly silent on the issue of disturbance of the identification process in schizophrenia with the exception of its role in paranoid symptom forms of schizophrenia. The following review, therefore, is necessarily a formulation of sex-role pathology in paranoid schizophrenia only, as described by Freud (1911). Some relevant points made by Fenichel (1945) are also summarized.

Paranoia and paranoid schizophrenia are dynamically related to a homosexual conflict of a latent, i.e., unconscious nature. It becomes manifested in several delusional contents

by denial and projection defense mechanisms. One component of the homosexual configuration may be a reversal of sexual-identifications. That is, the schizophrenic may unconsciously believe himself to have some of the attributes and identity of the opposite sex.

Other forms of schizophrenia do not involve such sexual pathology, unless paranoid delusions are a significant component of the total symptom configuration. As an incidental outcome, minor sexual identification disturbance may appear subsequent to psychotic regression in any schizophrenic disorder, in the forms of sexual confusion, and sex-role ambivalence. Such manifestations, however, are not necessary for schizophrenia in general.

Disregarding the symptom distinctions made by Freud, a theoretical rationale based upon psychoanalytic principles may be generated, for process-reactive schizophrenia, with reference to sexual identification disturbance, as a function of the processes of psychosexual development. If, as it has been previously proposed, process individuals became fixated at earlier levels of psychosexual development than reactive individuals, and in particular if these fixations involve infantile periods that pre-date even the phallic period in which identification resolution usually takes place, conditions are favorable for the development of deviant identification. Even if we were to assume, however, that some adequate degree of identification does take place in process schizophrenia, psychotic regression can be viewed as undoing, to some extent, the identification achievements of childhood, with the process schizophrenic reverting to infantile identification patterns.

If, on the other hand, reactive schizophrenics achieve higher levels of psychosexual maturation than do process individuals, and conversely, if, as described previously, reactive regression is less severe than for process individuals, than they could be expected to more adequately resolve identification problems posed in relationships with parental figures.

It is hypothesized, therefore, that the genetic level of sex-role identifications systematically varies along a process-reactive continuum, with process schizophrenics displaying genetically more primitive sex-role identifications than those of reactive schizophrenics. Furthermore, it is hypothesized that parental identification preferences are more sex-appropriate in reactive than process kinds of schizophrenics. Reactive male schizophrenics are hypothesized to be more strongly identified with the father-figure than are process schizophrenics, who are, additionally, hypothesized to be more strongly identified than reactive schizophrenics with the maternal figure.

Research Findings

Although some studies have been done on sexual pathology in schizophrenia using sub-types (e.g., Aronson, 1953), none appears in the literature dealing with differential sexual identification maladjustment using the process-reactive distinction. In the area of parental identification process, however, two studies have recently appeared, which explore the sex of the dominant parental figure, as objectively determined by direct ratings on parental interactions, and by projective responses of process-reactive schizophrenics.

Farina (1960) observed the spontaneous interactions of parents of good (reactive) and poor (process) pre-morbid schizophrenics, and derived indices of dominance behavior. He obtained ratings done without the knowledge of the parents, who were observed through a one-way mirror, as they were being interviewed by hospital personnel. The parents were also administered the P.A.R.I. Scale, as a further means of comparing the schizophrenic groups with respect to the nature of the parents' child-directed attitudes. Although the P.A.R.I. failed to discriminate between groups with respect to the nature of the parents, Farina did find that the mothers of poor-pre-morbids tended to be dominant over the fathers while the fathers, as presumably the case in our culture, tended to be dominat over the mothers of the good-pre-morbid schizophrenic sons. Farina concluded that the reversal from normal expectations of who is dominant over whom for the poor-pre-morbid group lends some credence to the notion that the identification process in poor-pre-morbids childhood is deviant and contributes to the development of process schizophrenia.

Garmezy (1959) found a complimentary result with good and poor pre-morbids, using a projective task for assessing the sex of the parental figure perceived as dominant by the patient. Good male pre-morbids tended to perceive the father-figure as dominant, while poor pre-morbids perceived the mother-figure as the dominant parent. These results tend to compliment the findings obtained by Farina, since one may not always assume that subjective and objective reality coincide for the individual. Even so, however, these two studies do not constitute a true test of the concept of differential identification disturbance in process and reactive schizophrenics, since the parent who is either judged and/or perceived as dominant may or may not be the object of preferred identification by the individual.

SUMMARY STATEMENT OF THE PROBLEM

Aim of the Study

A psychoanalytic rationale has been applied to the concept of process-reactive schizophrenia. Several problem areas selected for investigation have been discussed from a theoretical standpoint:

A. Ego-strength levels among process and reactive schizophrenics.

B. Genetic-levels of sexual identification development among process and reactive schizophrenics.

C. Levels of identification with parental figures among process and reactive schizophrenics.

D. Categories and levels of love-object preferences among process and reactive schizophrenics, in terms of the concepts of primary narcissism and heterosexuality.

E. Categories and levels of psychosexual motivation among process and reactive schizophrenics, using the concepts of oral, anal, and phallic pregenital drives.

The purpose of the study is to empirically test a set of hypotheses derived from the theoretical rationale pertaining to personality differences among process-reactive schizophrenics. The personality dimensions selected for study are measured with several psychological tests of an objective and projective type. The differentiation of subjects in terms of the process-reactive distinction is based upon case-history ratings of sets of behaviors

relevant to prognosis and pre-morbid social adjustment in adult schizophrenics.

Statement of Operational Definitions

A. The level of ego-strength is defined by that score obtained by a subject on the Barron Ego-Strength Scale (1953). The larger the test score, the higher the assumed level of ego-strength ability.

B. The concepts of levels and qualities of psychosexual motivations are operationally defined by a subject's factor scores on the Blacky Picture Test (Blum, 1950, 1962). It is assumed that larger scores correspond to higher levels of psychosexual motivation.

C. The concept of genetic-level of sexual identification is defined by sexual differentiation ratings yielded by the Draw-A-Person Test (Swenson, 1955). The larger the rating, the higher the assumed genetic-level of sexual identification development.

D. The concept of a process-reactive continuum is operationally defined by the distribution of ratings obtained by the sample on the Elgin Prognostic Scale (Wittman, 1941; Becker, 1956). High Elgin ratings locate the positions on the continuum of subjects with process schizophrenic characteristics. Low Elgin ratings locate subjects with reactive schizophrenic attributes. Intermediate scores locate subjects who are referred to as mixed schizophrenics,

i. e., individuals representing blendings and admixtures of reactive and process characteristics.

RESEARCH HYPOTHESES

Hypothesis 1. Barron Ego-Strength Scale scores and Elgin Prognostic Scale ratings are negatively correlated.

Hypothesis 2. a Blacky Test Factor XI-C scores (Narcissism) and Elgin Prognostic Scale ratings are positively correlated.

2. b Blacky Test Factor XI-B scores (Heterosexual Phantasy) and Elgin Prognostic Scale ratings are negatively correlated.

Hypothesis 3. a Blacky Test Card I and II Factor scores (Oral Conflict) and Elgin Prognostic Scale ratings are positively correlated.

3. b Blacky Test Card III Factor scores (Anal Conflict) and Elgin Prognostic Scale ratings are negatively correlated.

3. c Blacky Test Card IV (Oedipal Conflict) and Card VI (Castration Anxiety) Factor scores, and Elgin Prognostic Scale ratings are negatively correlated.

Hypothesis 4. Draw-A-Person Test sexual differentiation ratings and Elgin Prognostic Scale ratings are negatively correlated.

Hypothesis 5. a Blacky Test Factor VII-A scores (Father Preferred Identification Object) and Elgin

Prognostic Scale ratings are negatively correlated.

5. b Blacky Test Factor VII-B scores (Mother Preferred Identification Object) and Elgin Prognostic Scale ratings are positively correlated.

METHOD

SUBJECTS

The 45 subjects used in this study were obtained from the male, resident population of patients at the Brecksville Veterans Administration Hospital, Brecksville, Ohio.

Psychiatric Treatment

All subjects were receiving chemotherapy at the time this study was done. None of the subjects had received any convulsive treatments in the year prior to testing, although three subjects had received electroshock treatments within the last five years. None of the subjects had ever been subject to lobotomies. All subjects were described as in adequate physical health in the clinical charts.

Diagnostic Criteria

All subjects were officially diagnosed as schizophrenic by the psychiatric staff. The diagnoses had been established in the conventional manner, with the use of the standard A.P.A. nomenclature (1952). No patients were used if doubts were recorded in the psychiatric summaries about whether or not they were in fact schizophrenic at the current time. None of the subjects carried other medical diagnoses of neurological disorders, brain syndromes, or debilitating physical diseases and abnormalities.

SAMPLING PROCEDURES

Sample Selection

Subjects were selected from the pool of schizophrenic patients on twelve hospital wards. All six short-term treatment wards in the hospital and six long-term treatment wards were used to obtain subjects for the study. The use of only these twelve wards was deliberate. In lieu of sampling from all treatment wards in the hospital, subject selection was confined to these wards to increase the probability of obtaining a sample of schizophrenics varying widely in the prognostic factors that comprise the item contents of the Elgin Prognostic Scale.

The ward patient file index was used to identify eligible subjects. The total pool of subjects on the twelve wards was reduced by a process of elimination to a list of the first 45 subjects who met the design criteria (see below).

Sample Sub-Criteria

In addition to a schizophrenic diagnosis, adequate physical health, no shock treatments in the past year and no lobotomies; subjects had to meet the following additional selection requirements.

1. Privileged or open-ward status was required in order to obtain subjects who would be grossly comparable in ability

to cooperate and act upon test instructions.

2. Hospital admission at least one month and no more than one year prior to testing was used as a requirement, so as to very crudely equate subjects on the variable "stage of illness".[4]

3. A subject had to be between twenty-five and forty-five years of age for inclusion in the study. This criterion was invoked so as to decrease the chances of subjects at any range in the Elgin distribution being significantly younger or older than subjects at some other place in the distribution.

4. A subject had to be a new admission for inclusion in the study.[5] This requirement was invoked so as to reduce the expected differences in total institutional time spent in hospitals. It could not be hoped, however, that this ploy would make subjects comparable on this variable, since total institutional time is one effective measure of prognosis in schizophrenia.

5. A subject needed to have completed high school only in order to be selected for use in the study.[6] This criterion

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[4] Higgins and Mednick (1963) have shown that schizophrenic stage of illness is related to at least one variable: reminiscence effect, in a verbal retention task. It is possible, therefore, that stage of illness is also related to test variables such as those used in this study.

[5] This criterion, unfortunately, could not be adhered to in all instances. For practical reasons, four transfer patients from other V.A. hospitals were included. They all fell, not unexpectedly, in the process range of the Elgin distribution.

[6] Ten subjects had either more or less than a high school diploma. They were, however, fairly evenly balanced, as a chance outcome, among the three Elgin groups.

was invoked so as to make it likely that subjects would be comparable in educational level, for design control purposes. It is probable that if left to chance, the extremes of the Elgin distribution might have differed significantly in education, since Benjamin (1963) has shown that process and reactive groups differ in formal schooling, with process schizophrenics tending to lag behind.

Test-Taking Attitude Safeguards

Three subjects were dropped from the study when met for testing, due to negativism, bewilderment, etc. They were replaced by reconsulting the card indexes for three candidates who met the selection criteria described above (new admission status, no organic disease, etc.).

SAMPLE ATTRIBUTES

Table 1 presents statistical measures for the three Elgin groups (process-mixed-reactive) on selected demographic variables. In general, these findings conform to notions about process-reactive schizophrenia held by investigators in the field. Although the variable marital status is implicitly incorporated in one of the twenty Elgin Scale items, the other three variables presented in the table do not enter into any of the Elgin items, explicitly or implicitly. Therefore, these

TABLE 1

MEANS, MEDIANS, AND RANGES FOR SELECTED DEMOGRAPHIC VARIABLES, BY SCHIZOPHRENIC GROUP

Demographic Variable		Process (N-16)	Mixed (N-14)	Reactive (N-15)
No. of Previous	Mean	4.44	2.86	2.40
N-P Hospital	Median	4.00	3.00	2.00
Admissions	Range	1-8	1-6	0-9
Total Time (in	Mean	87.62	30.42	15.00
mos.) Spent in	Median	79.50	34.50	10.00
N-P Hospitals	Range	22-192	2-61	1-84
Chronological	Mean	23.56	25.64	29.00
Age at First	Median	23.00	25.00	25.50
N-P Admission	Range	18-33	21-34	22-45
Marital	Married	0	4	13
Status	Single	16	10	2

variables can be thought of as reasonably independent process-reactive selection criteria. Since they all significantly discriminate at least between extreme groups, i.e., process and reactive, and usually between all three groups, these demographic variables would appear to represent efficient alternative ways of categorizing schizophrenics in terms of the process-reactive distinction.

If one were to think of these variables as four examples of factors that should discriminate Elgin - defined process-reactive groups, then these results focusing on demographic differences among groups could be viewed as criterion measures that provide evidence for the concurrent validity of these Elgin Scale ratings.

As will be presently discussed, the three groups were equivalent in chronological age, so that the differences among Elgin groups in the above demographic variables cannot be attributed to age differences. In summary, it may be concluded that on the average, process schizophrenics tend to be hospitalized at an earlier age and for longer periods of time across hospitalizations than either mixed or reactive classified schizophrenics. The process individual also tends to have more frequent admissions to mental hospitals. Additionally, process schizophrenics are much more likely to be single rather than married, and reactive schizophrenics tend to be married rather than single. In all instances, the differences between process and reactive groups were significant across the four demographic variables. Although the means for the mixed group always were of intermediate value to the extreme group means, the mixed group means sometimes differed significantly from the other groups, and sometimes only from either the process or reactive group.

Control Variables

Table 2 presents mean, median, and range statistical indices for the three schizophrenic group on four control variables. The groups did not differ significantly on chronological age, number of years of formal schooling, race membership (negro versus caucasian), or mental age equivalents.

This equivalence of groups in the variables other than race membership is hypothesized to have resulted from sample selection restrictions. In the general population of process-reactive schizophrenia, it may well be, as suggested by some recent studies, that grade-level achievement (Benjamin, 1963), and current intellectual function (Damankos, 1963), are differentially distributed for process and reactive kinds of schizophrenics.

To reiterate some pertinent sample-selection criteria, a chronological age range criterion of 25 to 45 was invoked, along with the requirement that a subject have a high school

TABLE 2

MEANS, MEDIANS, AND RANGES FOR SELECTED DEMOGRAPHIC VARIABLES

Demographic Variable		Process	Mixed	Reactive
Chronological	Mean	35.50	32.71	36.20
Age (in years)	Median	37.00	32.50	37.00
	Range	27-44	25-42	25-45
No. years of	Mean	10.38	11.86	11.20
schools	Median	10.50	12.00	12.00
	Range	7-14	8-16	8-16
Race Member-	Negroe	3	3	4
ship	Caucasian	13	11	11
Kent E-G-Y M.A. Equivalents	11-14	12	6	10
	+14	4	8	5

diploma. If, therefore, these restrictions had not been instituted, then sampling without such selection criteria would likely have produced samples discrepent in schooling and, probably, mental age, since educational level and mental age are highly correlated variables.

The lack of differences in the proportion of negroes to caucasians in each of the groups was a chance outcome, i.e., no attempt was made to match subjects in sample-selection. As mentioned before, however, chronological age restrictions were put on sample-selection. Since it has been shown that process subjects stay in hospitals much longer across admissions than do reactives, it is possible that if an age requirement had not been invoked, at least these two groups would have differed significantly in chronological age.

ELGIN SCALE RATING PROCEDURES

Description of the Scale

The Elgin Prognostic Scale (Wittman, 1941) is composed of twenty separate sub-scales, each weighted according to prognostic importance. Favorable factors (reactive characteristics) are weighted negatively, i.e., they are assigned low scale-point values. Unfavorable factors (process characteristics) are weighted positively, i.e., given high scale-point values. Each item pits process against reactive characteristics in the form of a bipolar variable dimension.

Included in the scale are three major types of items: 1) evaluations of pre-psychotic personality. 2) nature of onset, and 3) typicality of the psychosis relative to Kraeplin's description. Items A thru O are rated on the basis of case-history material; items P thru T are rated on the basis of the presenting clinical symptoms. A prognostic score is obtained by summing the 20 individual ratings, with high scores associated with process schizophrenia, and low scores with reactive syndromes (See Appendix).

<u>Validity - Reliability</u>

Initial validation of the Elgin Scale (Wittman, 1941) involved 343 schizophrenics receiving electroshock treatment. Wittman and Steinberg (1944) performed a follow-up study on 804 schizophrenics and 156 manic-depressives. The Elgin Scale proved 80-85% effective in both studies in predicting gross outcome to therapy (improved-unimproved).

Two studies have factor-analyzed the Elgin Scale (Lorr, Wittman, and Shanberger, 1951; Becker, 1959). Each has produced equivalent findings, although Lorr <u>et al</u> used oblique rotations, and Becker orthogonal. Two specific factors emerged in the studies. One called "schizophrenic withdrawal" loads on items which involve deficient life-interests, slow onset, introversion, and long duration of psychosis. The other factor that emerges, "reality distortion", loads on hebephrenic symptoms, bizarre h

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delusions, and inadequate affect. Becker has shown that these two factors are highly correlated when pitted against each other in an oblique solution, suggesting a general factor which he calls "severity of illness".

Recently, Solomon and Zlotowski (1963) have shown that highly significant inter-rater agreement can be obtained using the Elgin Scale applied to the case-histories of a group of schizophrenics. Their findings, additionally, indicate that the pre-morbid adjustment items correlate much higher with each other than do the presenting symptom items. Moreover, the pre-morbid items correlate significantly higher with total score than do the symptom items. Correlations between pre-morbid and symptom item ratings were relatively low, although the symptom ratings did significantly differentiate groups when pitted against total scores.

Items M (toxicity), Q (hebephrenic), R (ideas of influence), and J (acedmic) were found by these authors to have little usefulness, as they did not correlate significantly with total score.[7] The remainder of the items, however, significantly correlated with total ratings. Although incidental to this

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[7] Prior to obtaining the Solomon and Zlotowski results, this author conducted a similar analysis using the present study's Elgin data. It was found that the items they concluded are inefficient, were also shown in this sample to lack utility, i.e., they did not significantly discriminate groups when pitted against total score.

study, the authors found that total ratings using the Elgin and the Phillips Pre-morbid Adjustment Scale (1953) were highly correlated, suggesting that process-reactive studies using one or the other rating scale for selecting subjects are fairly comparable.

In summary, the results of the Solomon and Zlotowski study indicate that the pre-morbid items are more efficient and homogeneous than the symptom items in the Elgin Scale. Several of the symptom as well as pre-morbid items appear to lack utility for making process-reactive discriminations. The pre-morbid and symptom items, as their category labels indicate, appear to be measuring different aspects of behavior in schizophrenics. High inter-rater agreement is possible, and studies using either the Elgin or Phillips scale are grossly equivalent.

Rating Procedures

Each subject in this study was independently rated by two judges, using all available case-history material and current clinical charts, exclusive of any psychological reports in the folders that might provide information of a biasing nature. Each subject was rated by this author, and by one of four staff psychologists,[8] depending upon whose ward the subject resided.

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[8] The author would like to express his appreciation to the following psychologists at Brecksville V.A. for acting as Elgin raters: Drs. Carol Bowie, Fred Damankos, John Lowenfeld, and James Madden.

Inter-Rater Agreement

The Spearman coefficient of correlation for the pairs of ratings on the 45 subjects was .97, so it is clear that a very high degree of rater agreement was achieved. This correlation compares favorably with that obtained by Solomon and Zlotowski of .90, with the correlation of .97 reported by Chapman (1951), and an early correlation of .87 reported by Wittman (1941) for the original Elgin Prognostic Scale. In data analysis, the average of the two separate ratings was assigned to each subject, a technique recommended by Berg and Adams (1962) for dealing with multiple ratings on the same subjects.

Distribution of Elgin Ratings

Table 3 presents the distribution of Elgin ratings for the total sample, and for the sample trichotomized into three groups, called the classic process schizophrenic syndrome group, the classic reactive schizophrenic syndrome group, and the intermediate mixed group, involving features of each of the polar opposite pure types. This manner of classification, in lieu of a dichotomy, has been used recently by various authors (e.g., King, 1958; Becker, 1959), and appears most logically compatible with the concept of a process-reactive continuum. It will be used in all data analyses in this study together with correlational procedures. Of course, any classification which

TABLE 3

STATISTICAL INDICES FOR ELGIN DISTRIBUTION, AND NUMBER OF SUBJECTS RECEIVING SUB-TYPE DIAGNOSES

Elgin Scale	Process (N-16)	Mixed N-14)	Reactive (N-15)	Total
Mean	70.63	51.36	29.33	50.87
Median	71.00	52.50	29.00	54.00
Range	64-81	42-60	14-40	14-81
S.D.				18.41
Schizophrenic Sub-Type				
Residual	0	0	1	1
Schizo-Affective	0	0	3	3
Paranoid	6	7	6	19
Undifferentiated	10	7	5	22

demarcates category boundaries on a continuous distribution involves a more or less arbitrary and artificial decision, but in defense of this procedure, it should be pointed out that such an arrangement is convenient for supplementing data analyses. Furthermore, if a wide range of Elgin scores is obtained, as was the case in this study, little if any violence is done to the concept of process-reactive continuity. Lastly, trichotomizing the distribution enables one to conveniently identify the syndrome groups which traditionally have been referred to as "process" and "reactive" schixophrenia, i.e., Elgin subject groupings which reflect qualitatively distinct process and reactive syndrome characteristics, as quantitatively defined by Elgin item scale point scores.

Table 3 also presents the sub-type psychiatric diagnoses received for each group. As can be seen from this table, the three subjects who received "schizo-affective" diagnoses all fall in the reactive group. This finding is consistent with traditional symptom criteria describing classic reactive schizophrenics, as showing manic-depressive features (Kant, 1944). This criterion is also included as part of Item P in the Elgin Scale, as a reactive characteristic describing emotionality during symptomatic psychosis.

With the exception of a single residual type diagnosis and the three schizo-affective diagnoses, the rest of the subjects received either an "undifferentiated" or "paranoid" type diagnosis. The proportion of subjects receiving each of these latter diagnoses was not significantly different across the three groups. This finding lends support to the contention that the process-reactive classification uses criteria other than symptom-clusterings for differentiating subjects and group syndromes. The absence of other traditional diagnostic subtypes in any of the groups (hebephrenic and catatonic), may partly be a function of their current rarity in mental hospital; also, it is possible that such severely disorganized diagnostic types were excluded by such sampling procedures as using only open-ward, i.e., more intact, patients.

DEPENDENT VARIABLE ASSESSMENT PROCEDURE

Tests Administered

The psychological testing involved the administration of the Kent E-G-Y (Kent, 1946), the Draw-A-Person Test (Machover, 1949), the Blacky Picture Test (Blum, 1950), and the Barron Ego-Strength Scale (Barron, 1953), in that order to each subject.

All subjects were tested by this author, after Elgin ratings had been done. The testing was conducted in one session in the office designated for examination purposes on the patients' ward.

Each subject was introduced to this author by his ward psychologist. The subject was told that he was going to be tested as a part of a hospital work-up routinely done on every patient. In all cases, standard instructions were used for the administration of each test. With the exception of the Barron

Scale, the tests were administered by this author. The Barron Scale was self-administered, in this author's presence.

THE BARRON EGO-STRENGTH SCALE

Description of the Scale

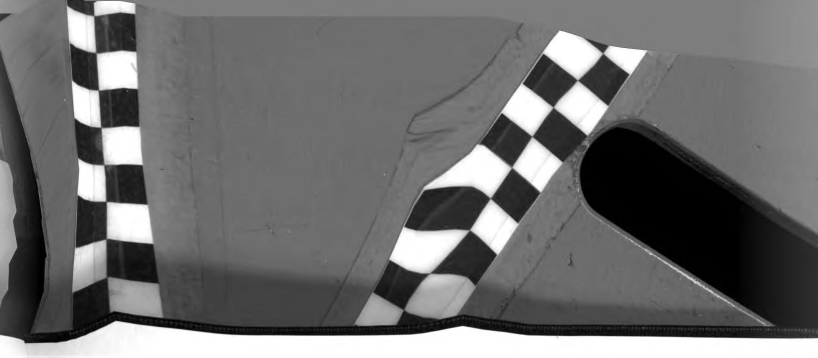
The Barron Scale (Barron, 1953) consists of 68 items from the MMPI, selected from the total pool of 530 items on the basis of significant correlation with rated improvement in out-patient psychotherapy in 33 psychoneurotics. Standard instructions are provided, and raw scores are translated into T-scores by a conversion table developed from three clinic samples.

Barron has item-analyzed the scale into the following clusters:

1. Physical functioning and physiological stability.
2. Psychoasthenia and seclusiveness.
3. Attitude towards religion.
4. Moral posture.
5. Sense of reality.
6. Personal adequacy, ability to cope.
7. Phobias, infantile anxieties.
8. Miscellaneous

Reliability and Validity

The original paper on the scale by Barron (1953) reports respectable reliabilities of .76 (odd-even) for a clinic



population of 126 patients, and .72 (test-retest) after three months in a sample of 30 clinic patients.

As a prognostic tool, the scale has little utility for predicting individual therapy outcome (improved-unimproved), but it predicts outcome as effectively as other comparable psychological tests. On cross-validation with three separate samples of psychotherapy patients, low but significant correlations of .42, .54, and .38 are reported, between Barron scores and outcome.

Barron (1953) has shown that scale scores are significantly related to a number of variables, such as intelligence, self-confidence, breadth of interest, ethnic tolerance and prejudice. He presents these results as evidence for the construct validity of the Barron Scale, as a measure of ego-strength.

BLACKY PICTURE TEST

Description of the Test

The Blacky Test consists of eleven cartoon drawings which portray the experiences of a dog named Blacky in relation to a mother and a father dog and a sibling, Tippy. (Blum, 1950). Each of the cartoons ...."is designed to depict either a stage of psychosexual development or a type of object relationship within that development."

The subject is asked to make up a story about each cartoon; this is followed by a series of multiple-choice inquiry items, usually involving six alternative answers. Two of the

cards (III and XI) are designed to tap separate phases of development within a psychosexual dimension, resulting in 13 scorable psychological dimensions.

The Blacky Test stems directly from psychoanalytic theory in its rationale, and interpretation of themes and inquiry choices is made in terms of psychoanalytic personality concepts. The test assumes that the subject reacts to the drawings in terms of the kinds of psychosexual conflict situations implied by the cartoons.

Reliability and Validity

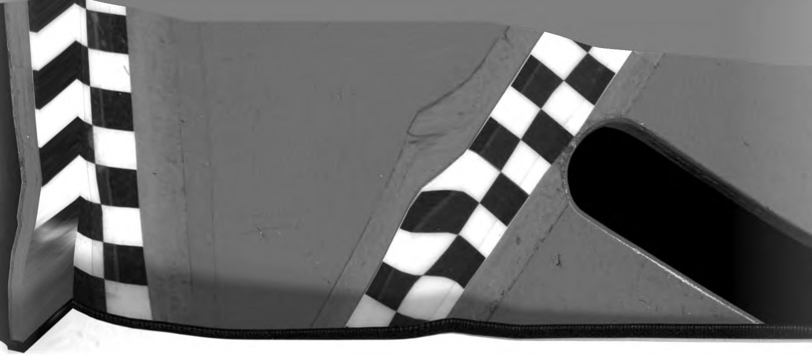
Although some attempts have been made to determine Blacky reliability from the standpoint of traditional psychometric criteria, (e.g., Charon, 1956; Granick et al, 1958), the usual case has been to emphasize the techniques validity, and thus assume or imply reliability.

Blum (1950) and Blum and Hunt (1952) describe a variety of studies of a construct validity nature. They point to the clinical utility of the technique as one source of validating evidence. A series of formal studies by these same authors (1952) bolster the claims of Blacky supporters. As an example, it has been shown that therapists can choose the Blacky protocols of their patients on a better than chance basis, and clinicians can successfully predict the presence or absence of disturbance on each of the Blacky dimensions with better than chance accuracy.

Studies employing the Blacky to test hypotheses based upon psychoanalytic theory may be considered a source of evidence for evaluating Blacky validity. In this regard, Rabin (1958) has shown that the Blacky discriminates between Kibbutz and non-Kibbutz Israeli boys on several psychosexual dimensions. In this same category of Blacky validation studies, Lindler (1958) found that the Blacky was an effective indicator of psychosexual deviation in a selected population by discriminating on nine of the thirteen variables between a sexually deviant and normal control group.

An alternative to these validation approaches is factor-analysis. From this standpoint, Newman and Salvator (1958) found six specific factors, using a male college population. More recently, Blum (1962) has published the results of a large scale factor-analytic construct validity study, employing a large sample of undergraduate males. Thirty fairly orthogonal factors emerged from the intercorrelations of all sources of responses to the Blacky, with each cartoon having two or three factor dimensions.

The 30 factors were related to a host of criterion variables, to ascertain the factors' construct validity. Blum describes a number of significant correlations between factor scores and such variables as defense preference, demographic family characteristics, physical complaints, interpersonal mechanisms, and social perception.



These factors comprise a guide for scoring the Blacky for research use. The scoring system has a high degree of objectivity inherent to it, and would appear to have partially resolved scoring problems frequently used as a major criticism against the Blacky as a research instrument. The system was used as a guide for scoring the Blacky data obtained in this study, using only the inquiry items, scored in the manner outlined in the manual (1962).

DRAW-A-PERSON TEST

The Validity of the D-A-P as a Measure of Sexual Differentiation

Among the various test measures that may be obtained from figure drawings is that of sexual differentiation, i.e., the degree to which the male and female pictures portray sex-appropriate characteristics (physical and cultural artifacts). According to Machover (1949), the particular type of treatment accorded the pair of figures may be associated with the nature and degree of the subjects' own internalized sex-role identifications. In other words, the differential drawing treatments are thought to represent projection of the individual's body and self image, with respect to maleness or femaleness, on a continuum.

Swenson's Scale (1955) is a device for rating the degree of sexual differentiation accorded the drawings, whose meaning is said to correspond to the above-described rationale. Drawings of Veterans Administration patients were used in developing the t

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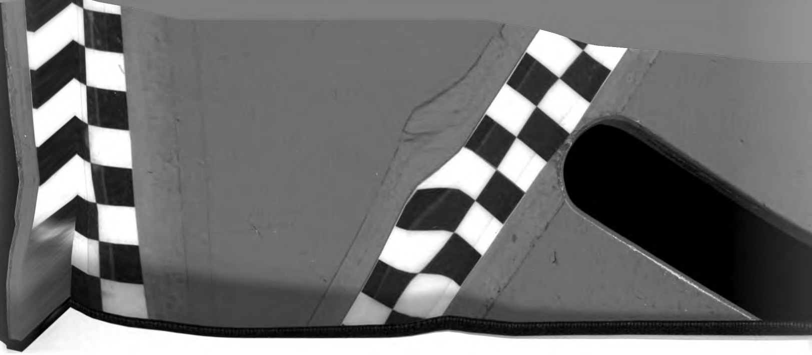


scale. Swenson obtained significant discriminations between a neurotic population and psychotic group. Using the female drawing only, Fisher and Fisher (1950) found some significant relationships between figure-drawing indices of femininity and sexual maladjustment in a sample of female psychiatric patients. Several studies using the Swenson Scale and the Haworth Sexual Differentiation Scale support the notion that the way a child renders male and female drawings relates to the nature of his internal sex-role identifications (Swenson and Newton, 1955; Limuaco, 1959; Normington, 1960). Although suggestive, these latter studies, however, cannot be considered directly relevant tests of Machover's claims, since they involve empirical tests of the normal rather than pathological implications of the concept of sexual identification. Several other studies, however, using the Swenson Scale with psychiatric groups, produced negative, inconclusive or ambiguous results (Cutter, 1956; Sipprelle and Swenson, 1956).

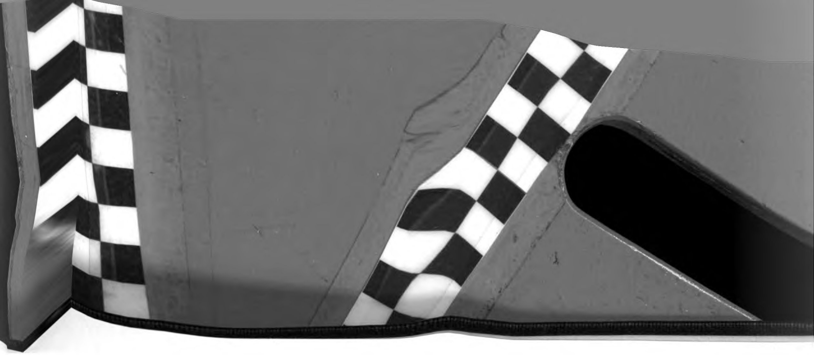
Critics of the sexual differentiation scale usually point to the questions of the effects of intelligence and drawing skill upon sexual differentiation scores. For example, Nichols and Strumpfer (1962), found that the major portion of common variance in a number of D-A-P score variables, including sexual differentiation ratings, is attributable to a single major factor, drawing ability. In particular when used with children, critics point out that many purported sexual differentiation criteria are identical with score factors used to estimate intelligence in the original Goodenough scale (1926).

In rebuttal, Machover (1949) points out the wide discrepancy frequently found between the drawings of the male and female, suggestive of a lack of a relationship between drawing ability and sex differentiation treatment. Swenson (1955) found that sexual differentiation scores and Bender-Gestalt scores, as an alternative measure of visual-motor drawing capacity, do not correlate significantly. Murphy (1957) found no differences between sexes on the drawings scored by the Goodenough method for intelligence. When rescored, however, for sexual differentiation, the male and female samples did differ significantly on the variable, as would be expected from developmental theory of identification. Finally, Rabin and Limuaco (1959), parcelled out the variance attributable to I.Q. differences in sex differentiation scores of children from two cultures, and found that the results for both groups remained constant.

Administration

The D-A-P was administered using standard instructions adapted from those suggested by Machover (1949).

> I would like you to draw me a picture of a person. Take all the time you like and be sure to draw a whole person.



Each subject was provided with a pencil and plain white bond paper 8" X 10½". After the drawing was completed, the subject was required to draw a picture of the sex opposite to the first drawn picture.

Scoring Procedure

The pair of drawings were scored for degree of sexual differentiation between the male and female pictures, using the Swenson nine point rating scale (1955). Each of the scale points is accompanied by scoring criteria, in the form of verbal as well as pictorial illustrations to guide the rater in making scale judgements.

Three clinical psychologists on the staff at Brecksville Veterans Administration Hospital[9] were used to independently rate the drawings for sexual differentiation. The protocols were submitted to them without identifying data of any kind, so as to eliminate any biasing affects. Although two of the D-A-P raters had also acted as Elgin raters, contamination of D-A-P ratings by knowledge of Elgin scores was not possible, since there was no way for these two judges to identify a subject's drawing. As with the Elgin, the average of the three separate ratings on each subject was used as the formal score in data analyses.

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[9] The author is indebted to Drs. Carol Bowie, John Lowenfeld and Rowland Shepard for serving as raters.

Inter-Rater Scoring Agreement

The coefficient of concordance (W) for the three sets of 45 sexual differentiation ratings, was .82, corrected for tied ranks, which is significant at better than the .05 level, for a two-tail test (x^2= 108.24, df - 44). The degree of agreement obtained in this study compares favorably with Swenson's ratio of .84 (1955), although two rather than three judges were involved in that study.

RESULTS

Statistical Note

Each psychological test variable has been correlated with the Elgin Prognostic Scale ratings for the total sample. Correlations are also presented in the Appendix for the three Elgin groups (process, mixed, and reactive), and each of the test variables, to illustrate score trends for individuals within each Elgin category. Additionally, the psychological test results are presented in the form of various group averages, as a means of pointing out general trends among Elgin groups.

The statistical procedures are drawn from the texts by Walker and Lev (1953) and Siegel (1956). Spearman rank order correlations are used exclusively in the study, and all correlations incorporate the correction factor for tied ranks. The Mann-Whitney U-test for two independent samples is employed for all group comparisons. Only two-tailed significance tests are used in the study, and alpha level is .05 or less.

Statistical data on the Elgin distribution obtained in this study is contained in the Method chapter. Detailed information regarding the Blacky Test factors and scoring procedures may be found in the publication by Blum (1962).

Negative correlations indicate that high psychological test scores are associated with low Elgin ratings, i.e., reactive schizophrenia. In such a negative correlation, low psychological test scores would, therefore, be associated with high Elgin

ratings, i.e., process schizophrenia. If the correlation is reported as positive, then the reverse holds: process schizophrenia is associated with high and reactive schizophrenia with low psychological test scores.

The interpretation of the size of a test score varies with the particular test. Increasing Blacky factor scores are said by Blum (1962) to reflect increasing levels of psychosexual conflict. According to Barron (1953), increasing Barron Scale scores indicate increasing ego-strength levels.

In reference to adult populations, Swenson's findings (1955) indicate that sexual differentiation ratings in the upper three categories of the Swenson Sexual Differentiation Scale coincide with the typical ratings expected from normal adult males. Although no normative standard is readily obtainable from the research literature, ratings in the lower three Swenson Scale categories may be viewed as grossly deviant for an adult population.

BARRON EGO-STRENGTH SCALE FINDINGS

Table 4 presents the total sample correlation between Elgin Prognostic Scale ratings of pre-morbid social behavior, and the Barron test results. The correlation of -.31 was significant (t=2.139), and negative in value, in keeping with the research hypothesis. The correlation indicates a weak trend for lower Elgin Scale ratings (reactive schizophrenia) to be associated with higher Barron Ego-Strength Scale score levels. Conversely,

TABLE 4

CORRELATION BETWEEN ELGIN AND BARRON SCALES,
AND BARRON SCALE GROUP AVERAGES

Group	Mean	Median	Range	r
Process	44.9	44 **	32-62	
Mixed	47.8	48.5	36-58	
Reactive	52.0	55 **	30-62	
Total	48.2	50	30-62	-.31 *

* Significant at .05 level.

** Difference between process and reactive groups significant at .02 level.

the negative correlation indicates that higher Elgin Scale ratings (process schizophrenia) tend to be associated with lower Barron Ego-Strength Scale score levels.

Table 4 also presents averages for the three Elgin groups, called process, mixed, and reactive. The difference between extreme Elgin groups only, i.e., process and reactive, was statistically significant (U=61), with the reactive group, as expected, receiving the highest average score. The ordering of means for the three groups, additionally, was correct, with the process group receiving the smalles average score, the reactive group the largest score, and the mixed group the intermediate average Barron score.

DRAW-A-PERSON TEST SEXUAL DIFFERENTIATION RESULTS

Table 5 presents the total sample correlation between Swenson Scale sexual differentiation ratings obtained from subjects' drawings of the male and female human figures, and the Elgin Prognostic Scale life-history ratings. As may be seen from the table, a significant (t=2.620) correlation of -.37 was obtained between process-reactive ratings and D-A-P sexual differentiation ratings on a nine-point scale. The negative sign of the correlation indicates that there is a trend for lower sexual differentiation ratings to be associated with process Elgin Scale ratings. Conversely, the negative correlation indicates that reactive schizophrenia Elgin ratings tend to be

TABLE 5

CORRELATION BETWEEN ELGIN AND SEXUAL DIFFERENTIATION SCALES, AND SEXUAL DIFFERENTIATION SCALE GROUP AVERAGES

Group	Mean	Median	Range	r
Process	3.9	3.3 ** ***	2-7.7	
Mixed	5.6	6.3 ***	1.7-9.0	
Reactive	5.8	6.0 **	2.3-8.0	
Total	5.1	4.9	1.7-9.0	-.37 *

* Significant at .02 level.

** Difference between process and reactive groups significant at .01 level.

*** Difference between process and mixed groups significant at .05 level.

associated with higher levels of figure-drawing sexual differentiation ratings.

Table 5 also presents average sexual differentiation ratings for each Elgin group. The mean scores are correctly ordered for the three groups, with the reactive group, as hypothesized, having the highest average rating. The process groups' drawings received the lowest average rating for sexual differentiation, and the mixed group tended to be rated in the middle.

The difference between process and reactive groups in sexual differentiation scores was statistically significant (U=47). Also, the difference between process and mixed groups was significant (U=59).

BLACKY PICTURE TEST RESULTS

Cards I and II (Oral Eroticism and Oral Sadism)

Table 6 presents the total sample correlation between Elgin ratings and pooled scores received by each subject on four factors involving Cards I and II of the Blacky Picture Test. According to Blum (1962), these four factors are test measures of oral conflict dimensions. The higher the score, the higher is the test level of oral conflict for the individual.

A significant (Z=2.98) correlation of .45 was obtained between process-reactive ratings and orality factor test scores. The positive sign of the correlation indicates that process schizophrenia is associated with high orality factor scores, and reactive schizophrenia with low orality factor score levels.

TABLE 6

CORRELATION BETWEEN ELGIN SCALE AND BLACKY PICTURE TEST CARD I PLUS II FACTOR SCORES (ORAL CONFLICT), AND CARD I PLUS II GROUP AVERAGES

Group	Mean	Mode	Range	r
Process	4.9 **	6	0-8	
Mixed	3.9	3,4,5,6	1-6	
Reactive	3.4 **	4	1-6	
Total				.45 *

* Significant at .002 level.

** Difference between process and reactive groups significant at .02 level.

In terms of group averages, it may be seen from Table 6 that the three Elgin groups produced a correct ordering of mean factor scores. The process group received the highest mean orality factor score, the mixed group received the intermediate average score, and the reactive group received the lowest mean orality score. The difference between process and reactive groups only was statistically significant (U=56).

Card III (Anal-Sadism)

Card III of the Blacky Picture Test has yielded two factors said to measure levels of conflict associated with anal motivations (Blum, 1962). Table 7 presents the correlation between pooled Card III factor scores and Elgin Prognostic Scale ratings for the total sample. Also, the table presents mean Card III factor scores for each Elgin group.

The total sample correlation of .14 between Card III factor scores and Elgin Prognostic Scale ratings for the total sample was not statistically significant. None of the group comparisons, additionally, was significant. These findings indicate, therefore, that no systematic relationship exists between Elgin ratings and Card III scores for this sample of subjects.

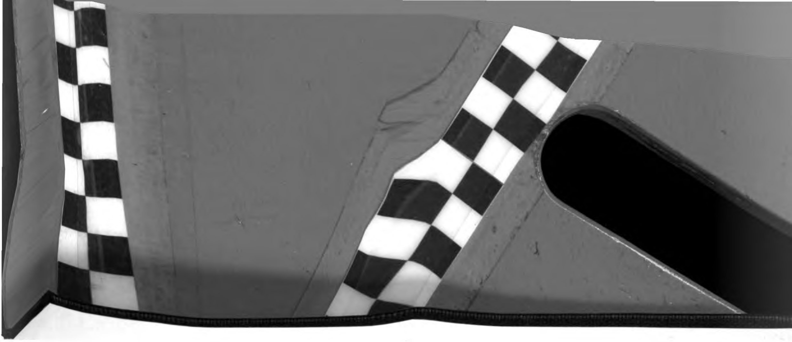
Cards IV and VI (Oedipal Complex and Castration Anxiety)

Cards IV and VI of the Blacky Test have yielded four factors whose psychological labels closely parallel the original names given the cards by Blum (1962). A single score was obtained by pooling the four separate factor scores obtained by each subject on these two cards. The score index was assigned the psychological

TABLE 7

CORRELATION BETWEEN ELGIN SCALE AND BLACKY PICTURE TEST CARD III FACTOR SCORES (ANAL CONFLICT), AND CARD III GROUP AVERAGES

Group	Mean	Range	r
Process	1.6	0-4	
Mixed	1.1	0-3	
Reactive	1.1	0-3	
Total			.13



label "phallic sexual conflict", since oedipal conflicts and castration anxiety are said to be components of internal conflict associated with the phallic stage of psychosexual development (Fenichel, 1945).

TABLE 8

CORRELATION BETWEEN ELGIN SCALE AND BLACKY
PICTURE TEST CARD IV PLUS VI FACTOR
SCORES (PHALLIC SEX CONFLICT),
AND CARD IV PLUS VI GROUP
AVERAGES

Group	Mean	Range	r
Process	4.7	2-7	
Mixed	4.4 *	2-6	
Reactive	5.5 *	2-8	
Total			-.27

* Difference between mixed and reactive groups significant at .05 level

Table 8 presents the correlation between Elgin Prognostic Scale ratings and pooled Card IV and VI factor scores. A correlation of -.27 was obtained between these two variables. Although indicating that a weak relationship exists between

Elgin ratings and Blacky scores, in the predicted direction, the correlation was not statistically significant.

Among the group comparisons, the difference between mixed and reactive groups was significant (Z_u=2.00). The reactive group received the highest average phallic sex test score, but the test variable did not significantly discriminate between process and mixed, and process and reactive Elgin groups.

<u>Card VII (Identification Process)</u>

Card VII of the Blacky Picture Test has yielded two orthogonal factors said to reflect levels or the degree of identification with the attributes of Blacky Test mother and father parental-figures (Blum, 1962). The two factors are called "Father as the Preferred Identification Object" (VIII-a), and "Mother as the Preferred Identification Object (VII-B)".

Table 9 presents the correlations between the Elgin Prognostic Scale process-reactive ratings, and each Card VII test variable, for the total sample. The correlation of -.29 between Elgin ratings and Factor VII-A (Father as Preferred Identification Object) scores was not statistically significant. However, Factor VII-A significantly discriminated process and reactive groups (U=69.5), but none of the other pairs.

A non-significant correlation of .17 was obtained between Factor VII-B factor scores (Mother Preferred Identification Object), and Elgin Scale ratings of process-reactive schizophrenia. As may also be seen from Table 9, the differences in average scores for each group were negligible. None of the group

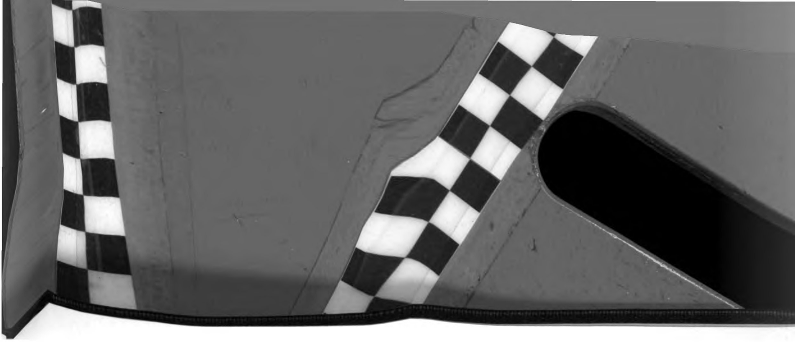
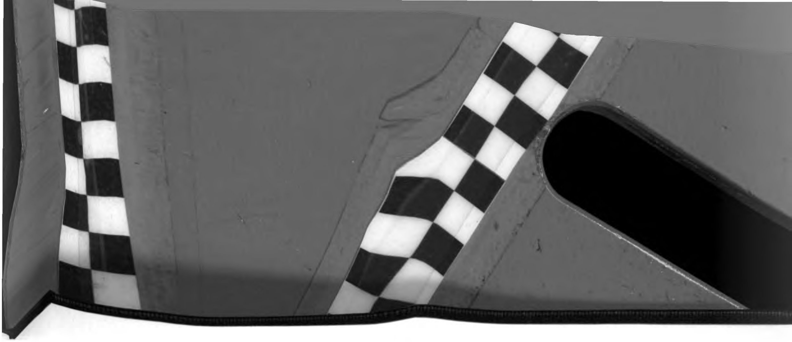


TABLE 9

CORRELATIONS BETWEEN BLACKY PICTURE TEST CARD VII FACTOR SCORES (IDENTIFICATION PROCESS) AND ELGIN SCALE RATINGS, AND CARD VII GROUP AVERAGE FACTOR SCORES

Factor		Process	Mixed	Reactive	Total
VII-A	Mean	1.8 *	2.5	2.9 *	
(Father	Mode	1	2	2 and 5	
Preferred	Range	0-5	0-5	0-5	
Identifi-	r				-.29
cation Object)					
VII-B	Mean	1.5	1.7	1.2	
(Mother	Mode	0	0	0	
Preferred	Range	0-5	0-4	0-4	
Identifi-	r				.16
cation Object)					

* Difference between process and reactive groups significant at .05 level.



significance tests, accordingly, exceeded chance expectations.

Card XI

Card XI is entitled "Love Object" by Blum (1950). The recent factor-analytic study upon which the scoring system is based has isolated the two factors used in this part of the present study. Factor XI-B (Heterosexual Phantasy) is described by Blum as a test measure of the subjects romantic interests at the phantasy level of behavior with the opposite sex. The larger the factor score, the more extensive is the test level of heterosexual phantasy activity. Factor XI-C (Narcissism) is a test measure of the extent to which the object is pre-occupid at the phantasy level with self-centered need-gratification strivings.

Table 10 presents the correlations between Elgin ratings and each Card XI variable. As may be seen from the table, each of the total sample correlations was statistically significant, and the sign of the correlation in each case was as hypothesized in the studies rationale. The significant correlation of -.37 (Z=2.457) between Elgin ratings and Factor XI-B scores indicates that reactive schizophrenia tends to be associated with high levels of test measured heterosexual phantasy activity and process schizophrenia with low levels of such heterosexual phantasy activity. Factor XI-B, additionally, significantly discriminated the process group from both mixed (U=59.5) and reactive Z_u=1.97).

TABLE 10

CORRELATIONS BETWEEN BLACKY PICTURE TEST CARD XI FACTOR SCORES (LOVE-OBJECT), AND CARD XI GROUP AVERAGES

Factor	Process	Mixed	Reactive	Total r
XI - B				
Mean	1.4 ***	2.3 ***	2.1 ***	
Mode	1	3	3 and 2	
Range	0-3	0-4	0-3	
r				-.37 *
XI - C				
Mean	2.1 ***	.7 ****	.5 ****	
Mode	1	0	0	
Range	0-5	0-3	0-2	
r				.71 **

* Significant at .05 level.

** Significant at .001 level.

*** Difference between process and mixed; and process and reactive groups significant at .05 level.

**** Difference between process and mixed; and process and reactive groups significant at .02 level.

The significant correlation of .71 (Z=4.70) between Factor XI-C Blacky Test scores and Elgin ratings indicates that high test levels of narcissistic phantasy activity are associated with process Elgin scores, and low test levels of narcissistic phantasy activity with reactive Elgin scores. The Narcissism Test variable, additionally, significantly discriminated between the process and both other groups. Although the reactive and mixed groups did not differ significantly, the ordering of the three means was corredt, from the standpoint of the study's rationale.

Group Correlations

The major discussion of results described total sample correlational findings, in keeping with the concept of process-reactive continuity. Appendix B presents the correlations between the various test variables and each Elgin group to illustrate individual trends within separate Elgin categories. The group correlations were for the most part statistically not significant and quite small in magnitude in contrast to the generally significant and often fairly large total sample correlations.

The groups were each two-thirds smaller in number of subjects than the total sample. For this reason, several group correlations which were as large or larger in magnitude than the significant total sample correlation for the same test variable were statistically not significant.

The group correlations were generally much smaller than the total sample correlations for the same test variable. In part, the group correlations might have been lowered by the reduction in range of Elgin scores resulting from the division of the total Elgin distribution into three sub-distributions. Also, the corresponding psychological test score ranges for the groups tended to be smaller than for the total sample, and this factor may have further influenced the smaller group correlational outcomes.

DISCUSSION

Process-Reactive Ego-Strength

The Barron Scale results of this study supported the research hypothesis. As predicted, the data indicate degress and levels of ego-strength capabilities in this sample of schizophrenics, which vary with some degree of predictability along a process-reactive continuum. As a general rule, the data show that schizophrenics classified as reactive tend to function at higher levels of ego-strength than either mixed or process schizophrenics. As expected, the process group tended to receive test scores reflecting the lowest levels of ego-strength among the three schizophrenic groups.

These findings are compatible with results obtained by Becker (1956), Fine and Zimet (1959, 1962), and Tutko and Spence (1962). As shown by these studies, some individual functions that are often subsumed under the more general concept of ego-strength are differentially structured in process and reactive kinds of schizophrenic outcomes. For example, Fine and Zimet (1962) have demonstrated that reality-testing is more adequately developed in reactive schizophrenics than it is in process schizophrenics.

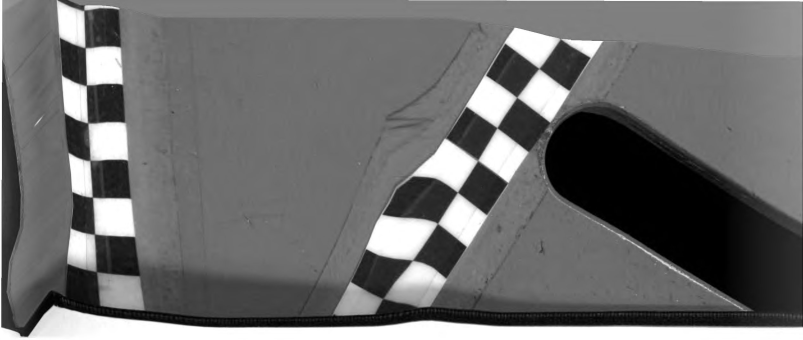
Process-Reactive Sexual Identification

The figure-drawing sexual differentiation results supported the research hypothesis. Reactive schizophrenics tended to produce the drawings rated as most adequately differentiated

in sexual characteristics, and process subjects tended to produce the most poorly differentiated male and female drawings. It is contended that these results are evidence of differences among these schizophrenics in genetic-level of maturation in the area of psychosexual identification. The data, accordingly, permit the inference that the male reactive schizophrenics are more advanced developmentally than are the male process schizophrenics in the degree to which their psychosexual identifications are appropriate to their actual physical sex and cultural role-prescriptions.

Process-Reactive Parental Identifications

The Blacky Picture Test results provided equivocal support for the research hypothesis regarding projective test levels of identification with father-figure parental attributes. Factor VII-A findings (father identification) indicated that there is no significant relationship between process-reactive ratings as a whole, and degree of father-identification. However, when only the extreme groups are considered, i.e., process and reactive, the results show a significant average difference. This finding, accordingly, points towards a gross difference between process and reactive schizophrenics in the level or degree of identification with the male parental-figure, with reactive subjects tending to identify at higher levels than do process schizophrenics.



The results for Factor VII-B (mother-identification) were entirely negative and, accordingly, did not provide support for the research hypothesis regarding degree of identification with the female parent. In the Blacky Test situation, no significant differences were found in group response patterns, and the total sample correlation was also not statistically significant.

Farina (1960) has obtained results regarding dominance patterns among parents of schizophrenics suggestive of basic differences between process and reactive individuals in parental identifications. The results of this study, which focused upon current assessment of parental identification levels in process-reactive schizophrenics, provides only slight support for such a contention. It would appear tenable to conclude that reactive schizophrenics are more strongly identified than are process schizophrenics with the male parent. The difference, however, is of a gross nature, as far as these results are concerned. The lack of any differences on the Blacky with respect to the mother-figure test results, additionally, further weakens such an argument.

Process-Reactive Pregenital Psychosexuality

The research hypotheses pertaining to psychosexual organization in process-reactive schizophrenia were only partially supported by the findings. As hypothesized, oral drives and needs were found to be more pronounced in schizophrenics located on the process end of the continuum than on the reactive

end of the continuum. It may be concluded, therefore, as held by several theoreticians in the field (e.g., Fine and Zimet, 1949; Fenichel, 1945), that oral drive components would appear to be more basic to the personality of process than reactive schizophrenics.

The findings with respect to anal and phallic drive organization in process-reactive schizophrenia, on the other hand, did not support the research hypotheses. From these results, it would appear tenable to assume that anal and phallic needs and conflicts are no more pronounced in one schizophrenic group than the other.

Process-Reactive Love-Object Preferences

The Blacky Card XI findings supported the research hypotheses pertaining to heterosexual and narcissistic object-interests and orientations in process-reactive schizophrenia. It may be concluded, accordingly, that schizophrenics on the reactive end of the process-reactive continuum are more involved, at least at the phantasy level of behavior, with the opposite sex than are schizophrenics on the process end of the continuum. In terms of a self versus other orientation, the data support the hypothesis that process schizophrenics are more dominated by self-interests, and conversely, less interested in other people for their own sake, than reactive schizophrenics.

General Considerations

The results of this study can be interpreted as reflecting psychological differences among process-reactive schizophrenics

in levels of personality integration, as a dual function of regression-fixation processes in development. In general, the findings supported the view held by many investigators in the field (e.g., Becker, 1956; Fine and Zimet, 1962; Kantor and Winder, 1959) regarding levels of personality integration in process-reactive schizophrenia. Consistent with these formulations, the results of this study indicated that reactive schizophrenics function at higher levels than do process schizophrenics. Since the present study did not utilize a normal reference group, it is not possible to specify from these results how process and reactive schizophrenics compare to normals in levels of personality integration. It would appear likely, however, that at least the process group would show a departure from normals, in the direction of genetically inferior levels of personality integration.

Although merely suggestive, these results provide some indirect support for the contention that both process and reactive schizophrenia have a common basis in psychological disturbance. Even so, the possibilities are not negated by these results that both process and reactive schizophrenia, or process schizophrenia only, involve organic factors as well.

If one were to consider the Elgin Scale as the criterion measure for process-reactive differentiation, these results indicate that the Barron scale is "not very" useful as a substitute for individual Elgin ratings. From the standpoint, however, of gross classification, the Barron scale has been

shown in this study to efficiently discriminate Elgin groups. Since the Elgin scale uses case-history ratings, and the Barron scale self-report data, then it could be argued that discrepant results should be expected when using these instruments on a particular schizophrenic or group of schizophrenics. Such discrepancies, furthermore, might well have a lawful basis, that bears systematic relationships to prognostic outcome, etc.

The results of this study suggest that the psychological tests might be useful for classifying schizophrenics in terms of the severity of illness and for prediction of prognosis. For specific individuals, the tests alone would appear to have limited efficiency, for the above purposes. However, for gross group classification, the results of this study indicate that the tests have a relatively high degree of discriminating power.

The study has shown that some areas of conflict, e.g., orality, are more basic to one schizophrenic group than the other. Accordingly, the tests might profitably be used to provide cues regarding differential areas of psychological conflict, and for assessment of adjustive potentials among schizophrenics. In the clinical setting, such knowledge might be helpful in the psychotherapuetic management and treatment of schizophrenics.

SUMMARY AND CONCLUSIONS

A psychoanalytic rationale was applied to the concept of a process-reactive schizophrenia continuum. Several research hypotheses were derived from theory, pertaining to differences among schizophrenics in levels of personality organization. The specific problem areas selected for investigation were ego-strength, psychosexual drive categories, love-object orientations, and identification process outcomes in process-reactive schizophrenia.

The design of the study involved the differentiation of a sample of hospitalized male schizophrenics in terms of the process-reactive distinction. For this purpose, the Elgin Prognostic Scale was applied to case-history material. The subjects were administered the Barron Ego-Strength Scale, the Draw-A-Person Test, and the Blacky Picture Test as measures of the psychological dimensions constituting the problem focus of the study. The subjects were then compared statistically on several relevant test measures, as a means of determining individual differences in the psychological test variables.

The findings supported the majority of the research hypotheses. To briefly summarize the statistically significant results, it was found that:

A. Barron Ego-Strength Scale scores are negatively correlated with Elgin Prognostic Scale ratings, with subjects rated as

reactive schizophrenics tending to produce the larger Barron scores, indicative of higher levels of ego-strength.

B. Draw-A-Person Test sexual differentiation ratings are negatively correlated with Elgin Prognostic Scale ratings, with subjects rated as reactive schizophrenics tending to receive sexual differentiation ratings that correspond to higher genetic-levels of sexual identification development.

C. Blacky Picture Test orality factor scores are positively correlated with Elgin Prognostic Scale ratings, with process Elgin rated subjects tending to produce the larger factor scores reflecting higher levels of oral drive motivation.

D. Blacky Picture Test heterosexual phantasy factor scores are negatively correlated with Elgin Prognostic Scale ratings, with subjects rated as reactive on the Elgin Scale tending to produce the larger factor scores, indicative of higher levels of phantasy involvement with the opposite sex.

E. Blacky Picture Test narcissism factor scores are positively correlated with Elgin Prognostic Scale ratings, with subjects rated as process schizophrenics tending to produce the larger factor scores, reflecting higher levels of involvement with self as love-object.

The results did not provide support for the other hypotheses, which dealt with levels of anal and phallic drive motivation, and levels of parental identification among schizophrenics. Definite trends were found, however, in the data, and they were all in the predicted directions. It would appear, therefore, that these latter hypotheses define problem-areas of some promise for future research in process-reactive schizophrenia.

The findings were discussed in terms of psychoanalytic principles of psychopathology. A crucial explanatory role was assigned to the concepts of fixation and regression, in their psychotic forms, as a means of interpreting differences found among these schizophrenic subjects on the psychological tests.

The generally positive results suggested that psychoanalytic theory has heuristic value for articulating personality dimensions that distinguish schizophrenic individuals along a process-reactive continuum. Additionally, the significant findings would appear to have contributed some empirical support for the construct validity of the psychological tests. Finally, it was concluded that the tests might be of some value for diagnosing severity of illness in schizophrenia, for

predicting prognosis in schizophrenia, and for obtaining cues as to some differential areas of psychological conflict pertinent to the therapuetic management of schizophrenics.

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APPENDIX A

THE BECKER REVISION OF THE ELGIN PROGNOSTIC SCALE

Items A thru O are rated on the basis of case history data. Items P thru T are rated on the basis of the presenting clinical symptoms.

A. Defects of interest versus definite display of interest.

   0. Keen ambition and interest in some of the following: Love, family, friends, work, sports, arts, pets, gardening, social activities, music, dramatics.

   2. Moderate degree in social activities including social gatherings, sports, music, opposite sex, etc.

   4. Mild interest in a few things such as job, family, quiet social gatherings. The interest is barely sustaining.

   6. Withdrawn and indifferent toward life interests of average individual. No deep interests of any sort.

B. Insidious versus acute onset.

   0. Development over a period of 0-1 months, with sudden dramatic divorcement from more or less commonplace living.

   1. Development over a period of 2-4 months with marked personality changes from relatively commonplace living.

   2. Development over a period of 5-7 months with moderate personality changes. May be some accenting of previous trends, but change also.

   3. Changes have taken place over a period of 8-12 months with noticeable personality modifications, but primarily on accenting of existing trends.

   4. Slow development of symptoms, but possible to detect personality change in 2 years prior to onset.

6. Very slow development of symptoms so that final disorder appears as an exaggeration of already strongly accentuated personality traits. Indications even prior to adolescence.

C. Shut-in personality

General: The psychotic condition is simply an exaggeration of the peculiar type of personality shown all thru childhood. Stormy childhood often with over-protection and anxiety, a difficult adolescence, characterized by inability to get along with, and mix with other children. Constitutional apparently, rather than the product of specific environment.

5. Very much as described above.

3. Moderately the picture described above.

1. Only mildly this way, but some resemblance to pattern.

0. Apparently normal childhood, little evidence of shyness, unusual difficulty, or else unusual behavior is attributable to environmental factors.

D. Schizothymic versus syntonic personality

0. Very sociable, fond of people and social gatherings; many friends, active in groups and sports, participates in life of his community.

2. Moderately sociable, likes people and social gatherings, but doesn't go far out of the way to meet people.

3. Mildly shy, mildly sociable. Will interact when the situation presents itself. Prefers association in family groups, as a rule.

4. Moderately shy, retiring, etc. More concerned with ideas than people.

6. Very seclusive, shy, retiring, mixes little with others. Few, if any, close friends. Interested in ideas rather than people. Passive, an onlooker at life, rather than an active participant. Poor "bite on life".

E. Range of interests

0. Wide and varied interests, keen "bite on life" and its opportunities, forward and interested in making adaptation to daily life in many spheres.

2. Moderate breadth of interest, interested in making adaptation to daily life, but does not go out of way to seek new opportunities.

4. Moderate restriction of interests. Narrow goals, but some detectable variety of interests within a narrow orientation.

6. Inadequate interest in varied problems of life, rigid, narrow goals or interests, circumscribed activities because of narrow range of interests.

F. Constitutional bias

0. A healthy, strong, energetic physical and mental make-up that makes the interplay between heredity and environmental influence during childhood a satisfactory one.

2. Suggestion of defects in physical and mental stamina occasionally observed. Not at all marked. Perhaps proneness to repeated illnesses in childhood.

4. Regarded from early childhood as different, queer or odd; perhaps associated with some real defect or handicap - physical, such as deformity, or speech defect, but more often only an imaginary defect of personality.

G. Low energy tone

0. Very strong drive, keen, active and alert interest and ambition shown in school, social and work spheres. Good grasp on life, liked life and had energy enough to enjoy it. Outgoing and adequate in meeting life.

2. Moderately adequate drive, interest and energy as described above.

4. Moderately inadequate energy tone. Tends toward submissive, passive reactions. Shows some potential to face life's problems, but would rather avoid them than expend the necessary energy.

6. Submissive, inadequate passive reactions, weak grasp on life, does not go out to meet life's problems, does not participate actively, but passively; accepts his lot without having the energy to help himself.

H. Asthenic build

0. Large, barrel-shaped trunk with relatively short legs and arms; shield-shaped face, short, broad head upon a thick neck, set well down between shoulders.

2. Athletic build. Balanced weight, good masculative head shape, etc. intermediate to 0 and 4.

4. Long, slender extremities with relatively small, narrow trunk. Egg-shaped face; elongated, narrow head on a tall, slender neck.

I. Heterosexual contact

0. Purposefully contacts the other sex, dates frequently, makes successful efforts to be attractive in manner, dress, accessories, etc. so as to be popular with girls (boys).

2. Dates when situation affords. Maybe marries, but tends to have difficulties in compatibility. Wants to interact with other sex, has some techniques, but not completely successful.

3. If marries, apt to divorce or separate. Generally, this is rated as a middle-point between 2 and 4.

4. Moderate lack of heterosexual contacts. Tends to avoid dates, dances, but has, on occasion, participated in same. Might think (he) she would like to marry some day, but little enthusiasm for it.

6. No association with the opposite sex. Never had any dates. Avoids dances and social gatherings which require the intermingling of boys and girls.

J. Marked academic interests versus active interest in sports.

0. An active interest in sports, participates in baseball, basketball, tennis, football, or other sports. A solitary sport such as swimming, or golf is not so important, unless the patient plays or swims with others rather than self.

1. Moderate interests in sports and other interests.

2. Mild interest in sports, mild interest in study.

3. Moderate interest in study -- without other interest.

4. Fond of study, worked diligently at school and excells in this field, associated with inadequacy in sports and social field; a grind without the ambition or drive in work and play to equal his achievements as a student.

K. Careless, indifferent versus worrying, self-conscious type.

   0. Subjectively sensitive, critical of self, preoccupied with own conflicts, but shows little of the extreme, bizarre, unusual, mysterious or socially unacceptable behavior.

   2. Some concern and pre-occupation with difficulties - a moderate position to 0-4.

   4. Withdrawal and disinterest in social surroundings, careless of social requirements, given to day-dreaming, and eccentricity, dirty, disheveled appearance, profane language, unacceptable habits.

L. Exclusive stubborn traits versus insecurity and inferiority feelings.

   0. Timid, lacks self-confidence, feels insecure and inferior. Very sensitive and critical of self, feels certain problems in life but participates and does not accept his lot passively or without regret and struggle.

   1. Moderately like 0, neither timid nor stubborn.

   2. Moderately stubborn.

   3. Complete withdrawal from surroundings and interest.

   4. Inadequate in meeting life, but stubborn and opinionated, refuses to change, even if suggested, to achieve a more adequate adjustment. Opinionated and egocentric.

M. Toxicity or exhaustion.

   0. History of illness, disease or exhaustion closely associated with the onset of psychotic symptoms.

   1. Illness present, not severe, but related to onset. Less severe exhaustion.

   2. Poor health - but not requiring bed.

   3. Fair health - a little run down.

   4. Excellent health history. Health in no sense an etiological factor in the development of psychosis.

N. Precipitating conditions (Situational reaction).

   0. A strong relationship between onset of symptoms and situational problems that would require definite and continued effort to adjust satisfactorily; i.e., death, failure, loss, interpersonal strife. The average person would definitely try to flee such a situation than attempt to change it.

   1. Marked stresses related to onset, such as financial problems, interpersonal discord, etc., which would cause considerable worry to the average individual.

   3. Mild stresses that the average person would react to in some way, but which would not usually lead to a breakdown.

   4. Onset of psychotic symptoms not related to any disturbance or difficulty in the patient's situation -- or a disturbance of such a trivial nature that it would be ignored or quickly forgotten by the average person.

O. Duration of psychosis

   0. Under two months

   1. 2-4 months

   2. 4-6 months

   3. 6-8 months

   4. 10-12 months

   5. 1-2 years

   6. 2-3 years

   7. Over 3 years

The following scales are rated from the presenting clinical picture:

P. Inadequate affect versus emotional instability of appropriate effect.

0. Adequate or overly-demonstrative affective expression. This includes appropriate expression and manic-depressive aspects in which there is a facile display of emotion.

2. Moderately inadequate affect. Tends to be rigid, dull, or slightly inappropriate. Only moderate responsiveness to emotional stimulation.

4. Markedly inadequate, inappropriate, rigid or dull affect. Emotional life expressed is at odds with behavior or strikingly inappropriate. Little reaction to stimulation of any strength.

Q. Hebephrenic symptoms: extreme indifference, complete divorce between ideas and affect; extreme carelessness in appearance and reaction with untidyness in some cases, silly behavior, often silly laughter without appropriate stimulation.

0. Not as above

1. Mildly as above

3. Markedly as above

4. Very markedly as above

R. Ideas of influence: Patient feels that someone or something is directing his actions, thoughts or speech. Some outside influence forces him to do things even against his own will.

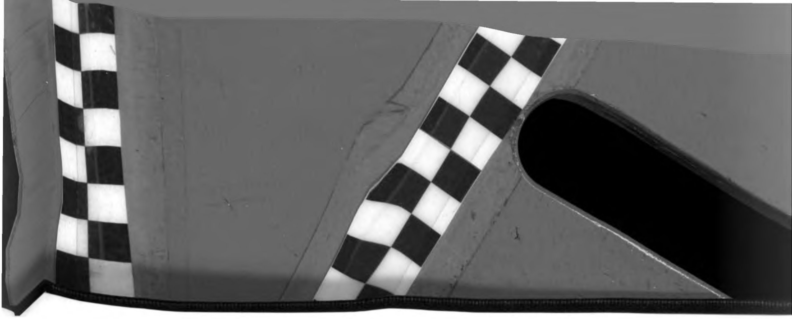
(Rate 0-4 as in Scale Q)

S. Physical interpretation of delusions. The patient has certain feelings (possible hallucinations) that are linked up with definite delusional ideas; for instance, that there is a snake in his stomach; that food passes right thru his body; that someone is passing electrical currents thru his body; that the food he eats is poisoned; etc.

(Rate 0-4 as on Scale Q)

T. **Atypical symptoms:** Manic or depressive features, mixed with the schizophrenic picture. Display of appropriate affect, over-talkative, distractive, facetious, display of interest in other patients, desire to help in humanity in general, depression, feeling of sin or guilt, psychomotor retardation, anxiety, crying.

0. Very markedly atypical picture, shows many of the above features with considerable strength of affect.
1. Markedly atypical picture.
2. Moderately atypical picture, less intensity of features shown.
3. Mildly atypical picture, unusual features are minimal or lacking in intensity.
4. Lacking atypical features.



APPENDIX B

GROUP CORRELATIONS BETWEEN ELGIN PROGNOSTIC SCALE AND PSYCHOLOGICAL TESTS

Test	Schizophrenic Group Process	 Mixed	 Reactive
Barron Scale	.14	-.02	.4
D-A-P (Sexual Differentiation)	-.48	.10	-.08
Blacky (Cards I plus II)	-.08	.34	.45
Blacky (Card III)	-.31	.56 *	-.44
Blacky (Cards IV plus VI	-.03	.31	-.20
Blacky (VII-A)	.37	.16	-.09
Blacky (XI-A)	.32	.44	-.55 *
Blacky (XI-B)	.34	-.02	.57 *

* Significant at .05 level, two-tailed test.