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TIMELESSNESS AND PROCESS - REACTIVE SCHIZOPHRENIA

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THESIS

ABSTRACT

TIMELESSNESS AND PROCESS REACTIVE SCHIZOPHRENIA

By

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Reviews of the nature of time perception and of the process-reactive dichotomy in schizophrenia led to the concludion that the two areas are related. Based on this understanding, the predictions that reactive schizophrenics will evaluate timelessness more positively than process schizophrenics and than non-psychotic controls and will evaluate time-bound concepts more negatively than the controls were made. This is in keeping with the conceptualization that escape from reality serves a far greater function for the "reactives" than for the other two groups. Timelessness, as an important mode of this escape, would therefore be positively evaluated.

Five timeless and five time-bound concepts were rated by means of six evaluative semantic differential scales by 35 process schizophrenics, 35 reactive schizophrenics, and 23 controls (general hospital patients). Analysis of the ratings revealed that:

1. "reactives" rated timeless words more positively than process schizophrenics;

2. no significant differences in the ratings of time-bound words for the two groups were obtained;
3. "reactives" tended to evaluate timeless words more positively than controls, while the opposite was true with respect to the time-bound words.

The results were interpreted as confirming the hypothesized relationship between schizophrenia and temporality.

TIMELESSNESS AND PROCESS-REACTIVE SCHIZOPHRENIA

By

Don J. Brand

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To Peninah, who was always there when I needed her, ever sensitive to the ways in which I needed her, whose very existence makes each day a little more beautiful

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INTRODUCTION

THEORIES OF SCHIZOPHRENIA

The multiplicity of schizophrenic symptoms (Bleuler, 1950) has presented special problems in defining a necessary common cause for the syndrome. This variety, in fact, led to Bleuler's title description of "Dementia Praecox" as "the Group of Schizophrenias."

In general, Freud described psychoses as resulting from "severe frustration by reality of a wish, a frustration which seemed too unendurable to be borne" (1924a) which is handled by the ego withdrawing from reality (1924b) and giving up object cathexes, drawing the libido back into the ego (1915). The way this is done is by regressing to the fixated auto-erotic (schizophrenic) or the narcissistic (paranoid, paranoid schizophrenic) stage of development (1911). Hallucinations and delusions are ways of restitutionally regaining the world and reestablishing substitute object relations of a sort (1914).

This conceptualization of schizophrenia as a direct regression of the ego to the narcissistic stage and subsequent restitutional attempts is adhered to by

Fenichel (1945), who shows how this process, in concert with defenses against the regression, results in the specific etiologies of the particular symptom complexes.

Though Arieti (1955), like Freud and Fenichel, recognizes the cause of schizophrenia as environmental frustration leading to regression, he does not view this regression as an automatic retreat to a previously fixated level (though he does agree that the groundwork for the schizophrenogenic weakness is laid in early childhood). Rather, the regression is teleological; it is a retreat to a level of development characterized by a less stressful, more satisfactory integration of both self and the self-in-the-world in order to regain this more satisfactory state. However, since the individual has since irreversibly advanced beyond this point and integrated himself at a higher developmental stage, his sudden regression is further dis-integrating, which causes additional anxiety, inciting further regression, to the point of losing touch with the world, as we know it. Regression then is, at least in part, a way of dealing with the environment-conflict rather than an escape from it.

This evolved understanding of regression is further detailed by Bion (1957) and Rosenfeld (1952a and 1952b), who premise their thinking on M. Klein's concepts of splitting and projective identification. They describe schizophrenia as a revival of these infantile

methods of dealing with the anxiety-producing child-mother symbiosis. In the process, the modes through which the individual experiences and learns the universe are curtailed. Not only are "contaminated" sections of the self split off, projected outward, and later internalized, leading to self-other confusion (Rosenfeld, 1952b), but also there exists a splitting and destruction of those functions which would result in awareness of the dangerous external and internal reality (Bion, 1957).

These theorists, as do others with similar orientation (Jacobson, 1967; Karon, 1963) quite clearly stress the reactive nature of the schizophrenic process. They view it as an approach adopted in order to deal with environmental difficulties. Others, however, have approached the schizophrenic phenomenon as an evolving disorder (rather than a reactive act) growing out of basic intrapsychic weaknesses and/or defeats.

Jung, in his later work on schizophrenia (1939) saw it simply as a massive overwhelming of the conscious mind by the primitive unconscious, destroying the unity of the personality. This may be caused by the retention of "abundant archaic material" which remains intact and does not adapt with the rest of the individual, creating a latent conflict between the increasingly separating conscious mind and the unconscious. When, in stress, the "consciousness should draw upon its unconscious instinctive resources, the conflict becomes manifest; and the hitherto

latent primitive mind suddenly bursts forth with contents that are too incomprehensible and strange for assimilation to be possible" (p. 172). Alternately it is possible "that the consciousness is just weak and... unable to contain" the unconscious press.

Federn (1953), too, views schizophrenia as a massive defeat, not by the collective unconscious, however, but by the vicissitudes of life. In contrast to Freud, he views schizophrenia as the resultant loss of the ability to differentiate between the subjective internal world and the external universe (loss of ego and ego-boundary cathexis). The individual is left with no phenomenological integrated "me" feel, nor can he clearly distinguish what is inside his ego (hence thoughts and "unreal") from what is outside it (the "real" external world). Interestingly, both regression and the over-powerful unconscious/underpowerful conscious play roles in Federn's conceptualizations, but with significant changes. The regression is simply an infantilization of attitudes and concepts and the UCS-CS conflict is seen as an interesting side issue.

This attention to the area of interaction between the person and the world is similar to the emphasis placed upon it by Hartmann (1953), who accords the economic aspects of this nexus a more clearly central role. The schizophrenic is viewed as someone who has had an early

deficiency in the neutralization of his libidinal cathexes and aggressive energies. Thus his object relations and defense mechanisms, depending as they do upon what should have been neutralized energy, are of an unstable nature. Des Laurier (1962) further notes the pain and fear inherent in object relations in which the energy used has not been desexualized and neutralized. In the normal course of events, therefore, this early deficiency has little chance of ever being corrected.

These explanations represent not merely theoretical hypotheses grounded in philosophical differences. Since they are, rather, the findings and discoveries emerging from actual analyses of actual schizophrenics they have an empirical validity of their own. This is a view which is adopted throughout this paper.

Two themes seem to emerge from this review. Schizophrenic loss of reality is seen by the first group as a defensive reaction to a distressing world, a way to deal with the anxiety-causing world. To the second group, however, it is a fundamental manifestation of the basic weakness, and not a method of handling it. To this latter group, separation from the world is not invoked as a way to escape anxieties, rather it is the essential malfunction in itself.

THEORIES OF TIME PERCEPTION

Freud (1911b, 1921, 1036) recognized that reality orientation is based on the delay in gratification of the infant's wishes, the frustration caused by time. Sachs, as translated by Orgel (1965) stated more clearly that, "Time is the representative of realistic necessity. The awareness of time arises when the pleasurable, in other words timeless, satiation of the infant, is interrupted by the first 'need' through the feeling of hunger." (p. 103). Yates (1935) echoed this idea while emphasizing the learning of time-as-process by pointing to both the hunger-satiation-hunger-satiation pattern and the body rhythms the child senses at the mother's breast. While successfully passing through this stage is necessary for a time sense to develop (Bergler and Roheim, 1946; Orgel, 1965) it is by no means sufficient. Time is learned in process through adolescence, and a "sense of time" is not solidified until after puberty when one has presumably left the purely subjective world of the child (Bonaparte, 1940; Schneider, 1948). This conceptualization of time as progressively learned has been generally empirically corroborated (Ames, 1946; Springer, 1952; Friedman, 1943, 1944).

When the all-important first stage of time-learning is too fraught with delay-anxiety, time, which has caused this anxiety, is at least partially denied and concommitantly, ego ties with the world are weakened (Orgel, 1965). Yates (1935), in the extreme case of schizophrenia, ascribed this dual process (time denial and the resulting weakening of ego-world ties) to the exhaustion produced feeling of annihilation of self and world, experienced by the child whose rage is consistently increased by time-caused frustration. If this is frequently experienced, anything will be attempted in order to prevent its recurrence, including a break of all contact and pulling oneself out of time and the world. (The terms "outside of time," "loss [or "lack"] of time," "impaired time orientation" and "timeless" as they will be used throughout the paper should be taken to mean a divorce of one's own actions and perceptions from the generally adhered to chronometric standards.) Essentially time-learning is a vehicle through which reality learning takes place. The universe and the time through which it is experienced are a unified gestalt to the experiencing individual.

Recent research can serve to illustrate these analytically discovered connections between time, reality, and the world.

Research on Temporal Orientation

Goldrich (1967) found that those students who mentioned the future most often on selected TAT cards showed more awareness of the continuity of events in time, were most efficient working on Ph.D.'s and were not as extreme in their avowed recall of past details as those students who mentioned the future less often. Apparently, ease in conceptually dealing with the future implies a capacity to use and control situations and time capably while an emphasis on the past, (and, as Goldrich points out, an extreme denial of the past is an emphasis on it) resulting from a contrasting preference to deal more with what was, the concrete and immutable, corresponds to an inability to handle the world adequately.

Eppley and Ricks (1963) showed that an attention to the past rather than the future on the TAT (retrospective subjects) characterized those Harvard students who were narcissistic, sensitively imaginative and open to experiencing (viewable as narcissistic-passive characters) as opposed to those with high academic achievement, low anxiety and high empathic involvement. As previously mentioned, comfort with handling the future can be conceptualized as the ability to deal easily with time and reality as they exist in process and flow while dwelling on the past indicates a contrasting deficit in this area. The greater narcissistic passive traits of

the time-weak retrospectives follows from the previous analytic conceptualizations. Since, for adults, narcissistic-passivity represents a maladjustment at the very earliest stages of development, it is understandable that the time sense, with its formative roots in this period, would be similarly impaired.

Further corroboration of this point was given by the findings of Calabresi and Cohen (1968) when they factor analyzed the ratings of clinic patients, hospital patients and students on 45 personal experience statements and 46 time pertinent statements. They found that the highest correlations were between "Time Anxiety" and "Restless Dysphoria" (also describable as "Depersonalization and Isolation"), "Time Anxiety" and "Tense Dependency" (or, more aptly, "Need for Stability") and "Time Anxiety" and "Time Possessiveness." These four factors also form the strongest constellation. The correlation of the characteristic of anxiety with that of time possessiveness again points to the intimate connection between narcissistically-based maladjustments (depersonalization and a need for stable supports) and axiety in dealing with time.

Schizophrenia, Depersonalization, and Time

The more severe depersonalization and lack of object relations of the schizophrenic should similarly be mirrored in his non-reality oriented relations with time. "Time must in some way form an integral part of the

objective world which we perceive," since "a sense of reality and a sense of time appear simultaneously" (Bonaparte, 1940, p. 427), and, in Schilder's view, the loss of libido from the changing experience concerning the outside and inside world is paralleled by a loss of sense of time. Every change in libidinous situation changes the time experience (Schilder, 1936). Minkowski (1926) described the loss of the sense of time to the schizophrenic more poetically as the loss of the "harmonious sentiment of life." (p. 565). Binswanger's "The Case of Ellen West" (1958) allows the reader an intense phenomenological feel of this time-reality-libido loss. One's relationship with the world then, is through and with time. The correspondence between time and the world is exemplified by the fourteen-year-old schizophrenic who, when a metronome was ticking too fast, was terrified that time would run out resulting in the world's destruction. (Cott, 1969). It must be remembered that all time-sense learning is viewed as critically premised on the first stage of one's life and loss of reality. The anxiety that many theorists ascribe to the schizophrenic's early life, and the depersonalization that marks his existence should therefore be mirrored in a loss of time sense.

This connection between schizophrenic maladjustment and time-sense maladjustment has been, indeed,

experimentally verified many times. Wallace (1956) found that schizophrenics were inferior to normals on the coherence of ordering future events and had shorter extension of TAT stories through time, a result later corroborated by Shybut (1968). Rabin (1957) found that on judgments of intervals from 25 minutes to 160 minutes, schizophrenics were significantly poorer than non-psychotics. Lanzkron and Wolfson (1958) found that chronic schizophrenics generally reported their age as being within seven months after admission to the hospital. Their responses to questions about the name of the present president, the price of a new Chevrolet and the cost of cigarettes reflected this temporal arrest. Dilling and Rabin (1967) compared normals, depressives, and schizophrenics on their coherence of ordering future events in time, their extension in range of future events, time estimation of 14 and 31 minute median periods and the time orientation of TAT responses. The schizophrenics were significantly inferior to even the depressives on coherence and were inferior to the normals on the other measures. Braley and Freed (1971) found that outpatients, half of who were diagnosed schizophrenic, when compared to normals, showed far less future temporal orientation, far greater disparity between actual and ideal future orientation on a Q-sort, and far shorter time span covered on the open-events test. This difference between "normals" and schizophrenics does not appear to be

simply describable as a greater disorientation of the schizophrenics. This finding additionally corroborates and extends the aforementioned finding that cognizance of the future is a measure of one's mastery over time and the environment.

The specific process with which schizophrenia imposes a loss of time sense upon the individual was described by Schneider (1948) as the "return of the repressed." When the UCS overwhelms the conscious, its own sense of time, its "timeless" "relativistic" "time-space" orientation, its "timelessness," becomes the dominant mode. Bonaparte (1940) expressed a similar concept more clearly by describing schizophrenia as "the collapse and breach of the barriers which maintain the UCS in a state of repression" and the timeless UCS floods the realistic CS. In contrast to this loss of temporality as a corollary of the overwhelmed ego, Eisler (1952) found the loss of temporality to be a method of escape from the world. Indeed, this latter conceptualization might have experimental corroboration of sorts, for Pearl and Berg (1963) found that schizophrenics showed the greatest time-span distortion when a scene involving their judged area of major conflict (sex, dependency, or aggression) was flashed by means of tachistoscope. Though this seems to fit Eisler's conceptualization most aptly, since the individual is suddenly threatened and responds

by losing touch with time, the findings could also be explained as resulting from an increase of unconscious press or a weakening of the ego precipitated by the dangerous percept.

Conceptualizations which, though not explicit, can be derived from Dooley's (1941) explanation of time adjustment can be used to focus the Esiler/Schneider, Bonaparte contrast. The loss of temporality is either due to weakness in the integrity of the ego which can therefore not handle realistic time (Schneider and Bonaparte) or is a method used to pull onself away from the world (Eisler).

This is strongly reminiscent of the divergent views on the fundamental principle of schizophrenia.

PROCESS AND REACTIVE SCHIZOPHRENIA

The conceptualization of process schizophrenia as contrasted to reactive schizophrenia has been aptly summarized by Normington (1964). Process schizophrenia "is viewed as a behavioral disturbance of gradual and insidious onset often beginning in early childhood with a lack of clearly discernible stress factors. Prognosis is poor in contrast to the more positive outlook for those at the other end of the continuum, the reactive schizophrenics. Reactive schizophrenics are considered to have a relatively normal prepsychotic personality adjustment and to have experienced a sudden onset of psychosis in the presence of precipitating factors." (p. 10).

Research on the process-reactive continuum has been comprehensively reviewed by Kantor and Herron (1966) and, more recently, by Higgins (1969). It may be generalized that process schizophrenics have lower developmental level personality organizations, (Kantor and Herron, 1966; Lerner, 1968; Ullman and Eck, 1965) generally show greater deficit in intellectual functioning (Belmont, Birch, Klein, and Pollack, 1964; Heath, Albee and Love, 1965; Schwartz, 1968) and have a poorer prognosis (Kantor

and Herron, 1966, Gittelman-Klein and Klein, 1969). Some recent studies do not replicate the degree of significance figures found in these studies. Nevertheless, as Higgins points out, "Given the host of sources of error variance which continue to plague process-reactive research... it is not particularly surprising that many investigators have been unable to reject the null." And after all "while non-supportive studies are many, contradictory studies are few." (1969, p. 466). The scales used to determine the process-reactive dimensions in these studies have been shown to correlate with each other sufficiently highly for essential similarity to be suggested (Johannsen, Friedman, Lietschuh, and Ammons, 1963; Johnson and Reis, 1967; Solomon and Zlotowski, 1964; McInnis and Ullman, 1967; Ullman and Giovannoni, 1964; Watson and Logue, 1969).

Under closer investigation, some very consistent differences between "processes" and "reactives" are revealed in their object relationships. Though no differential sensitivity to non-social forms of reinforcement were evidenced in maximizing rewards based on probability (McInnis and Ullman, 1967) negative feedback caused "reactives" to improve their abstractions of proverbs while "processes" deteriorated (Meichenbaum, 1966). "Reactives," then, can effectively deal with feedback from the environment while "processes" panic and/or become

hostile (Meichenbaum) when faced with possibly bad consequences. This inadequate learning from, and reaction to, information about interpersonal relationships is exemplified in Nathanson's study (1967) in which "processes" showed far less differentiation on the semantic differential between rejecting and punitive parental attributes. Furthermore, in response to pictures, "processes" "had considerably greater difficulty in discriminating the warm and loving parent figures" from harsh rejecting figures on semantic differential dimensions. These "processes" apparently could not experience the gradations of human interactions as well as the "reactives." This point is emphatically corroborated by Buck and Kates (1963) who discovered that, on films of moving rectangles whose movement was found to suggest love and anger, the "processes" could not perceive the connotations of high love or high anger as well as the "reactives."

The process end of the schizophrenic continuum, then, is marked by a far greater inadequacy in experiencing the world than is the reactive end; in fact, the "reactive" deals with the world and learns from it while the "process" cannot. Thus one can justifiably extend ones conceptualization beyond the classic descriptions of reactive schizophrenia as resulting from a sudden overpowering strain, and process schizophrenia as the end result of a gradual abnormal development. On the basis of the studies just discussed one may hypothesize that

two separate and consistent styles of functioning characterize the two extremes of the process-reactive continuum; the paradigmatic "reactive" deals with and grasps reality and reacts to the environment, sometimes escaping from it by denying its existence, while the paradigmatic "process" suffers from the incapacity to initially grasp and perceive reality. The degree of an individual schizophrenic's "reactive"-ness or "process"-ness would therefore be reflected in whether, and to what extent, the escape motive or the straightforward incapacity is dominant in producing the individual's dissociation from the concensually validated world. This conceptualization could explain Pearl's (1962) conclusion that "poor premorbids ["processes"] with a long history of morbidity are functioning in a state of reduced stimulus input," while "acute patients are responsive to numerous environmental and internal stimuli... Their behavior... would show greater variability and lack of focus than would the chronic or poor premorbid patients." (p. 77). The meaning of schizophrenia for each of the two groups and their respective etiologies would reflect this differentiation. The ideal "process" is schizophrenic and not reality-oriented in that he is unable to truly perceive or interact with the world; the ideal "reactive" is schizophrenic in that he does perceive the world and reacts to its perceived dangerousness by denying it. More descriptively,

the "reactive," facing an overwhelmingly frustrating reality, can react to it and "solves" his crisis by eliminating the so exasperating real world. The "process," on the other hand, never really perceives reality accurately; separation from reality is, for him, not a solution but a fact of existence. This would explain De Wolfe's (1971) findings that while "processes" produced looser associations, "reactives" had significantly more blocking reactions. In the broader context of developmental theory the "process" has endured a massive disturbance of reality testing as an infant and subsequent development could not successfully overcome this sufficiently to enable him to learn to grasp the environment. The "reactive," too, presumably suffered at this stage (for the ability to so catastrophically leave reality indicates an uncovered basic flaw in the reality relationship) but it was not so massive as to forestall future development; when all else fails, however, denial of the world is still a possibility. Since an individual is process or reactive to the degree that his early reality relationship was massively disturbed, "process," "reactive," and "normal" are relative descriptions and can be arranged on a continuum.

This understanding allows a resolution of the previously noted conflicting analytic findings on schizophrenia. The existence of two contrasting schizophrenic

styles and etiologies with some common ground, allowed the analytic investigator to focus on one and unknowingly extend his conclusions to the other.

The Process-Reactive Differentiation and Time

This understanding would lead to the hypothesis that schizophrenics on opposite extremes of the process-reactive continuum would find themselves reacting to time (which is, as was stressed, identifiable with the world) in the same way, but for the previously discussed contrasting reasons. For the "reactive," loss of time, like the loss of reality, is a divorce from the anxiety-causing world, while for the "process" it is a basic inability to perceive or confine himself in terms of time.

STATEMENT OF THE PROBLEM

The present study is designed to test the implications of the previous discussion. It was suggested that the process-reactive distinction indicates two characteristic styles and sources of maladjustment in schizophrenia. The hypothesized difference is that reactive schizophrenics divorce themselves from the world, while the process schizophrenics never truly perceived it or interacted with it. If, as was further suggested, the relationship one has with the world is reflected in one's relationship with time, this hypothesized difference should be evidenced in contrasting attitudes of the two groups toward time.

STATEMENT OF HYPOTHESES AND OPERATIONAL PREDICTIONS

The parallel between relations with time and relations with the world provides a method to test the previously-discussed thesis of the fundamental difference between process and reactive schizophrenics. The "reactive's" disassociation with time, and, therefore, with the world, would be viewed by him as the solution of a crisis situation, and would consequently have pleasurable connotations. For the "process," whose separations from time and the world has no solution component, the disassociation should also lack pleasant connotation. The "reactive," then, should see timelessness as a very positive situation, while the "process" would have no reason to.

> Hypothesis I: Reactive schizophrenics have a more positive evaluation of timelessness than process schizophrenics.

Furthermore, since reactive schizophrenics differ from normals in that they characteristically resort to radical withdrawal from the world as a solution, they should differ from normals in viewing timelessness, with its connotation of withdrawal, as more pleasant than contending with time.

> Hypothesis II: Reactive schizophrenics have a more positive evaluation of timelessness than non-psychotic individuals.

OPERATIONAL PREDICTIONS

I. On a forced choice semantic differential measure the differences in evaluation of timeless and time-bound words by reactive and process schizophrenics will reveal a more positive regard for timeless words by the reactive schizophrenics than by the process schizophrenics.

II. On a forced choice semantic differential measure the differences in evaluation of timeless and time-bound words will reveal a more positive regard for timeless words when compared to time-bound words by reactive schizophrenic patients than by non-psychiatric patients.

METHOD

Subjects

The 70 schizophrenic subjects were volunteers from the male patient population of the Battle Creek Veteran's Administration Neuropsychiatric Hospital, Battle Creek, Michigan. The normal subjects were non-psychiatric male patient volunteers from a general hospital serving a similar population.

Selection of the Schizophrenic Subjects

The clinical histories of male patients chosen by their ward staffs to go through group therapy programs were examined. Those who fulfilled the criteria of being diagnosed schizophrenic, below forty-five years of age, and having no history of brain damage or evidence of mental deficiency were selected. The patients chosen by the ward staffs were generally in best contact, least chronic, and most interested in cooperating with the hospital staff. Of this group, those who agreed voluntarily to take part in the research made up the schizophrenic sample.

Classification of Schizophrenic Subjects

The schizophrenic subjects who were included in the study on the basis of the above criteria were classified by means of the Ullman and Giovannoni Self-Report Inventory (1964) (SRI), which was administered together with the semantic differential and the vocabulary test. Of the 70 schizophrenics in the sample 35 scored 12 or below and were thus classified as process schizophrenics, and 35 scored 13 or more and were classified as reactive schizophrenics.

CHARACTERISTICS OF THE SAMPLES

SCHIZOPHRENIC SAMPLE

The schizophrenic group consisted of ambulatory mental hospital patients; 42 were diagnosed paranoid-type, ten were diagnosed chronic undifferentiated type, ten were diagnosed schizoaffective type, four were diagnosed catatonic, two were diagnosed as simple, and two were diagnosed hebephrenic. Only six of the patients were on closed wards, and these had cards allowing them free ground privileges. All the patients were heavily sedated, receiving a minimum phenothiazine dose equivalent to 400 mgs. of Thorazine a day. Their ages ranged from 20 to 45 with a mean of 30.600 and a S.D. of 8.727.

Process Group

This group, consisting of the 35 subjects with the lowest scores on the SRI, had an average vocabulary score of 8.848 with a S.D. of 2.884.

Reactive Group

This group, consisting of the 35 subjects with the highest scores on the SRI, had an average vocabulary score of 8.558 with a S.D. of 2.893.

NON-PSYCHIATRIC GROUP

The normal group consisted of 23 ambulatory non-psychiatric patient volunteers from a general hospital serving the same type of military veteran population. Their ages ranged from 19 to 45 with a mean of 34.913 and a S.D. of 8.903. Their mean vocabulary score was 9.285 with a S.D.of 1.764. The experimenter was advised not to ask if the patients had ever sought or been referred for psychiatric care, as this might be construed as an invasion of privacy. The opinion of both the staff members and the experimenter was that many of the patients in this group were not clearly non-psychotic.

CHRONICITY

To the self-report statements "I have had to stay in a mental hospital for more than one year at a time," and "Within the last five years I have spent more than

half the time in a mental hospital," three process schizophrenics (8.6%) answered "true" to both, three (8.6%) answered "true" only to the first, and two (5.7%) answered "true" only to the second. Of the reactive schizophrenics, three (8.6%) answered "true" to both questions, three (8.6%) answered "true" only to the first, and none answered "true" only to the second. Of the non-psychotic group, for whom the word "mental" was removed from both questions, three (8.6%) answered "true" to both, and none answered "true" to only one of these questions.

A summary table of the subject variables appears in the appendix.

INSTRUMENTS

I. The Semantic Differential Measure

The standard seven-space semantic differential format (Osgood, Suci, Tannenbaum, 1957) was altered to make it a forced-choice measure by eliminating the middle space. The following words: Forever, Schedule, Timeless, Calendar, Whenever, Timetable, Eternity, Minute, Everlasting, and Hourly, were rated on the semantic differentials. The adjectival polarities (good-bad, etc.) were all rated highly loaded in the evaluative dimension (Osgood). Each word and the semantic differential on which it was to be scored was on a separate page. The order of the adjectival polarities were rearranged with

each word, as were the right-left positions of the adjectives. Each semantic differential had half the positive and half the negative adjectives on each side. No more than two adjectives of the same evaluation (positive or negative) followed each other on any semantic differential.

The actual form of the semantic differential may be found in the appendix.

II. The Ullman and Giovannoni Self-Report Inventory (1964) is an accepted measure of the degree of reactive schizophrenia and is highly correlated with other process-reactive measures (McInnis and Ullman, 1967; Ullman and Giovannoni, 1964; Watson and Logue, 1969) and has been suggested as the most appropriate operational measure (Watson and Logue, 1969). It is a self-report true-false questionnaire consisting of 24 statements such as, "When I leave the hopsital I will live with my wife," and "I have paid regularly to buy a house." The complete inventory may be found in the appendix.

III. The Thorndike Vocabulary Test, developed by Thorndike (1942) consists of twenty words to be defined by checking one of five multiple choice alternatives for each. As has been found of other vocabulary tests (Cancro, 1968; Meichenbaum, 1966), socres on the Thorndike Vocabulary Test are not related to the process-reactive dimension (Normington, 1964). The entire vocabulary test may be found in the appendix.

PROCEDURE

The research instruments were distributed at the beginning of the group session, and the participants were asked to participate anonymously in a research project about what words mean to them. Patients were assured that their decision to fill out or refuse to fill out the instruments and the results of the questionnaires would in no way influence their course in the hospital. The fact that their names would not be on the forms to be filled out was stressed.

The schizophrenics were tested in groups of between five and twelve. Each individual in the experimental group was handed the semantic differential with each concept-grid on a separate page, the Ullman and Giovannoni Self-Report Inventory, and the Thorndike Vocabulary Test (1942) stapled together (see appendix). The author read all the instructions aloud. Those patients not selected for the experimental group were handed another type of word questionnaire.

In addition, the patients were told, "Writing that you feel bad about words doesn't make you bad, and writing that you feel good about words doesn't make you good... Since we are trying to find the differences between words please don't try to make all the words the same." The patients were then asked to look at the first word, "Forever," and were told, "For example, here the

word is 'forever' and you should ask yourself, 'Forever, is that a bad or good thought, how bad or good? Very bad, generally bad, slightly bad, slightly good, generally good, or very good?' Then you ask yourself the next description, 'Is it beautiful or ugly? How beautiful or ugly?' and so on for all the feelings for each word." All the concept-words were then read off with the word "Minute" pronounced "minit," in order to clarify the intent of the word, and the patients were asked if there were any words they had difficulty with in understanding, or if they had any questions about the instructions. All such questions were answered. Definitions offered were from Funk and Wagnall's Standard College Dictionary (1973). The questions dealing with clarification of instructions were answered. The non-psychiatric subjects were given the Semantic Differential (with the same definitions) and the Vocabulary Test.

TREATMENT OF DATA

Each time-related word was scored on six adjectival polarities with six spaces between the individual polarities. Each space marked by the subjects on each of the polarities was scored from one (extreme negative evaluation) to six (extreme positive evaluation). The sum of the six scores obtained for each word is the total score for that word. The scores of all the timeless words (Forever, Timeless, Eternity, Everlasting, Whenever), when added together, represent the degree of positive evaluation for timeless words, ranging from a possible low of 30 (extreme negative evaluation of all five timeless words on all six scales) to a high of 180 (extreme positive evaluation of all timeless words on all scales). Similarly, the scores of all the time-bound words (Schedule, Calendar, Timetable, Minute, Hourly), when added together, represent the degree of positive evaluation of time-bound words, ranging from a possible low of 30 to a possible high of 180. When these summed scores of time-bound words are subtracted from the summed scores of timeless words for an individual, the resulting difference represents the extent to which the individual evaluated timeless words more positively than time-bound

words. This score was called his "index of positive timelessness." Since this resulted in indices lower than zero (negative numbers), the difference between zero and the lowest index was added to all indices of all groups for statistical analysis.

Post-testing verbalization during the pilot study revealed that extraneous reasons ("People who call things good are good." "I love everything.") were predominant when eight or more time-related words received the maximum positive evaluation. All 27 such forms were eliminated, as were nine on which time-related words or adjectival polarities were not scored, and those on which the individual did not appear to understand the instructions or words even after full explanations were given (an indeterminate number). This last criterion was applied if this was the experimenter's impression before the subject completed the form. The final total sample consisted of 70 schizophrenics, 35 process and 35 reactive.

STATISTICAL ANALYSIS

The hypotheses were tested by *t*-tests comparing the mean index of positive timelessness of reactive schizophrenics to that of process schizophrenics and the mean index of positive timelessness of reactive schizophrenics to that of non-psychiatric patients. In the former comparison, since both N's were above 30, the

results of statistical calculation were compared to the Z distribution (Hays, 1963).

The significance of the differences between the means of the groups on each of the words was tested by multiple t-tests.

RESULTS

Hypothesis I

It was predicted that the reactive schizophrenics would respond more positively to timeless words than the process schizophrenics. A *t*-test was performed on the difference between the mean "index of positive timelessness" of reactive schizophrenics and process schizophrenics, and it was found significant in the expected direction (table 1). In addition, multiple *t*-tests were performed on the differences between the groups for each of the timeless and time-bound words (table 2). Each of the timeless words except "whenever" (the last timeless word) differentiated significantly between the two groups in the predicted direction. In contrast, none of the time-bound words, for which there were no predictions, differentiated significantly between the groups.

Table 1. Mean Index of Positive Timelessness of Process Schizophrenics, Reactive Schizophrenics, and Control Group (Non-Psychiatric Patients), and *t*-Tests of the Differences.

	Mean Index	t
Process	0.086	
		1.65[a]
Reactive	8.857	
		0.89[b]
Control	2.347	

[a] $p < .05$ (one-tailed test.)

[b] $p < .20$ (one-tailed test.)

Table 2. Mean Scores on Each of the Timeless and Time-Bound Words for Process and Reactive Schizophrenics, and *t*-Tests of the Differences Between Groups.

	Process	Reactive	*t*
Timeless			
Forever	4.357	5.138	2.297[a]
Timeless	3.667	4.443	2.027[b]
Eternity	4.324	5.114	2.211[a]
Everlasting	4.619	5.229	2.004[b]
Whenever	3.833	4.171	0.984
Time-bound			
Schedule	4.129	4.438	0.882
Minute	4.291	4.395	0.326
Timetable	4.062	4.351	0.866
Calendar	4.362	4.605	0.783
Hourly	4.048	4.281	0.693

[a] $p < .015$ (one-tailed test.)

[b] $p < .025$ (one-tailed test.)

Thus, both statistical approaches reveal the data to be clearly consonant with the hypothesis.

Hypothesis II

This hypothesis predicted that the reactive schizophrenics would respond more positively to timeless words when compared to time-bound words than would the control group. The difference between the Index of Positive Timelessness of the two groups revealed a tendency in this direction (table 1). Analysis of the mean scores of the individual words (table 2) reveals that "whenever" (the only one of the timeless words which did not differentiate significantly between "reactives" and "processes" in Hypothesis I) was the only word to which the responses were not consonant with Hypothesis II and thus appears to be the major cause of the non-significance of the index finding. Of the rest, two of the timeless words showed tendencies to differentiate between the "reactives" and the controls, with "reactives" responding more positively. Moreover, three of the time-bound words showed tendencies to differentiate between the two groups, with the reactive group responding less positively. This follows the expected pattern and contrasts with both the "reactive"-"process" (table 2) and the control-"process" (table 4) comparisons, in each of which one group scored both time-bound and timeless words more positively than the other group.

Table 3. Mean Scores on Each of the Timeless and Time-bound Words of Reactive Schizophrenics and Controls and *t*-Tests of the Differences Between Groups.

	Reactive	Control	*t*[a]
Timeless			
Forever	5.138	5.159	-0.063
Timeless	4.443	3.949	1.043[b]
Eternity	5.114	5.101	0.035
Everlasting	5.229	4.870	1.032[b]
Whenever	4.171	4.783	-1.719
Time-bound			
Schedule	4.438	4.935	-1.304[c]
Minute	4.395	4.884	-1.408[c]
Timetable	4.351	4.341	0.040
Calendar	4.605	4.949	-1.039[b]
Hourly	4.281	4.370	0.794

[a] A minus (-) indicates that the controls scored the word more positively.

[b] $p < .16$

[c] $p < .10$

Additional Results

Both reactive schizophrenics and non-psychiatric patients evaluated all the words more positively than did the process schizophrenics (tables 2 and 4).

Table 4. Mean Scores on Each of the Timeless and Time-bound Words for Process Schizophrenics and the Control Group and *t*-Tests of the Differences between Groups.

	Process	Control	*t*
Forever	4.357	5.159	2.061
Timeless	3.617	3.949	0.601
Eternity	4.324	5.101	1.849
Everlasting	4.619	4.869	0.618
Whenever	3.833	4.782	2.619
Schedule	4.129	4.934	2.137
Minute	4.290	4.884	1.699
Timetable	4.062	4.341	0.697
Calender	4.362	4.949	1.826
Hourly	4.048	4.370	0.799

Neither the timeless nor the time-bound words seemd to differentiate more clearly or more consistently between the groups.

DISCUSSION

The findings, especially those resulting from comparisons between the actual scores, were consistent with the hypotheses and their theoretical underpinnings. Reactive schizophrenics evaluated timeless words, when compared to time-bound words, more positively than did the process schizophrenics (table 1). An analysis of the scores of the individual words reveals that each of the timeless words (except "whenever") significantly differentiates between the two groups, in that "reactives" scored timeless words more positively, while no contrast between the two groups could be found on the time-bound words (table 2). If this is an indication of the degree of preference the two groups have toward timelessness, it appears that reactive schizophrenics have a greater preference for timelessness than do process schizophrenics. This was the expected result, since it was hypothesized that timelessness represents an escape from oppressive reality for reactive schizophrenics, while it does not have this implication for process schizophrenics.

There was a tendency for the reactive schizophrenics to evaluate timeless words, when compared to time-bound words, more positively than the process

schizophrenics did (table 1). Closer analysis of the individual words points to a pattern that differentiates the two groups (table 3). Non-psychiatric patients tend to assess time-bound words more positively than reactive schizophrenics, who, in contrast, tend to assess timeless words more positively than the non-psychiatric patients.

The contrasting evaluative patterns of the reactive schizophrenics and the non-psychiatric patients across time and timeless words indicate , as hypothesized, that the positive assessment of timelessness by reactive schizophrenics is mirrored by a greater dislike of time-boundedness than that experienced by more "normal" individuals. This suggests that the "reactives'" high evaluation of timelessness is related to a dislike of being time-bound. Indeed, the theoretical discussion in the first section emphasized the desire for timelessness by the "reactives" as an escape from the unpleasant time-bound world.

In contrast to the reactive-non-psychiatric pattern of differential evaluation, the process group evaluated both timeless and time-bound words less positively than the non-psychiatric group; neither type of word differentiated more significantly than the other between the two groups (table 4). Apparently, then, the process schizophrenics and the non-psychiatric patients

did not differ as a function of timelessness, but rather in that the process schizophrenics viewed all the words more negatively than the non-psychiatric group. This conforms to the conceptualization of the process schizophrenic as an individual whose reality-testing and interaction with the world are characterized by an unhappy inadequacy, with no method of escape.

The picture of process and reactive schizophrenics that emerges is consonant with the theoretical discussion of the first section. The process schizophrenic has never learned to perceive or deal adequately with the environment. Timelessness does not provide him with an escape route. Hence timelessness is not more positively evaluated than time-bound concepts (table 1). In fact, his perceptions of both time-boundedness and timelessness are less positive than those of either reactive schizophrenics or non-psychiatric patients. Reactive schizophrenics have learned to deal with reality, they therefore evaluate both time-bound and timeless words more positively than process schizophrenics. But the presence of a disturbance in this relationship to reality results in a less positive evaluation of time-boundedness than that of the non-psychiatric patients. When the anxiety of this relationship mounts, escape from reality and time is a solution-option (shown by the greater positive evaluation of timeless words relative

to both process schizophrenics and normals). The theoretical structure presented seems to be the most parsimonious way to explain the data.

The less complex view of the process-reactive continuum, that individuals on the process end are simply more severely "disturbed" (hence more differentiable from "normal") than those on the reactive end, would lead to predictions contrary to these research findings. Where reactive schizophrenics react differently from normals, process schizophrenics would be expected to react even more differently in the same direction. This is clearly contradicted by the results associated with the index of positive timelessness (table 1). Not only is the index of process schizophrenics closer to that of the control group than is the index of the reactive schizophrenics, but the two experimental groups differed from the control groups in opposite directions.

An alternative explanation for these experimental findings might be profitably explored. The more positive scoring of timeless words by the reactive group than the process group might be a result of the former group's greater tolerance of ambiguity (represented by the timeless concepts). However, in order to be consistent, one would also have to hypothesize a greater tolerance of ambiguity by the reactive group than by the

non-psychiatric group (since the "reactives" reacted more positively to timelessness than the control group, too). This latter contention is difficult to support conceptually. The issue of differential tolerance of ambiguity may well be, nonetheless, a fruitful area for further exploration.

The pool of subjects available for this study would tend to make the results more conservative than necessary. Since only 70 schizophrenic patients were successfully tested, the advantages of reducing the overlap by eliminating a midrange group was foregone in order to maximize the N. More importantly, the choice of the non-psychiatric patients as the "normal" group may well have been disadvantageous. As was previously noted, many of the non-psychiatric patients were not clearly non-psychotic. These patients, in fact, had effectively found a way to escape the world by being hospitalized. There is reason to suspect, then, that this "normal" population was not "normal" at all, but a group which included a sizeable number of individuals whose style is identical to that hypothesized for the reactive schizophrenics. Many of the non-psychiatric group may well have been, indeed, reactive schizophrenics.

The first of these factors, the lack of an elimination mid-group, would tend to minimize the statistical difference between the "reactive" and "process"

groups. The second of these factors, the "reactiveness" of the control group, would tend to minimize the difference between the "reactive" and control groups. The clarity of the results, in spite of these confounding limitations, lends greater credence to the conceptualizations.

A question may be raised in relation to the contrasts between the reactions to "whenever" and the reactions to the other timeless words. Is this a result of the fact that "whenever" was the last timeless word presented and was therefore most susceptible to the influence of fatigue? Or (as was suggested by a graduate student who did not know the results) is "whenever" unlike the other words in that its primary implication is vagueness? Both issues might be avoided if both "whenever" and a time-bound word were eliminated from the instrument.

Theoretical and Practical Implications and Speculations

An implication that may be drawn from this research is that placement of an individual on the process-reactive continuum indicates his style of cognition and apprehension of the world. The reactive apprehends the world, but he is capable of an automatic radical escape from it into a private universe when his interaction with it becomes too frustrating. Though this flight in itself

may have tremendous psychically painful drawbacks, the reality pressure of the instant are of greatest moment. One might speculate that when the environmental pressure is not too great, the reactive schizophrenic's apprehension of the world nevertheless includes the recognition of the ever-present possibility of a precipitous loss (or flight from) reality. Though the possibility of escape from pressure may be enticing, and thus exerts a constant pull, it also has its terrifying aspects, for when he is in his world, he is alone.

When he does escape into his private universe, the warmth of human contact in the shared, real world is tragically lacking, but the terrifying experience of pressure and frustration awaiting him prevent the reactive schizophrenic from returning. This is an individual whose existence is one of essential instability -- standing in two worlds, he belongs to neither. The mythological "pure" reactive schizophrenic, then, would be highly motivated toward therapeutic change, for a solution to his impasse.

The reactive schizophrenic, whose flight was predicated by the stress of reality, should be able to regain contact when the "outside world" ceases to be frustrating. It is understandable, therefore, that a stay in a hospital, where little is required of him and little genuine pressure is exerted, frequently produces

short-term "remissions." Hence the relatively good prognosis for the reactive schizophrenic.

The process schizophrenic, in contrast, does not flee the world in response to its pressure. He never learned how to relate to it and to perceptively grasp it in a realistic way. For the mythological "pure" process schizophrenic, there is no tension between two worlds; he comprehends no alternative to his present mode of existence. Perhaps the world-view of a grown-up autistic child would approximate this state. This individual would have no motivation for change, and, in fact, the prognosis for process schizophrenics is characteristically poor.

It should be kept in mind that this discussion is of a continuum from process schizophrenia through reactive schizophrenia to "normal" with no clear lines of demarcation between the three categories. The process schizophrenic end of the continuum represents the least pervasive ties with reality, while the normal end represents the most pervasive ties. The process schizophrenic finds it very hard to leave "his world" and take part in the consensually validated one, while the normal finds it very hard to truly forsake the consensual world.

The theorists who stress and explain the schizophrenic's inability to apprehensively grasp reality (Jung, Federn, Hartmann, and Des Laurier) are focusing

on the source of the tenuousness of his reality relationship, a tenuousness without which the reactive schizophrenic would not be able to divorce himself so radically from the world. In effect they are focusing on the "processness" which must exist in every "reactive's" makeup. Those theorists who stress the "reactivity" of schizophrenia (Freud, Fenichel, Arieti, Bion, Rosenfeld, Jacobson, and Karon) are focusing on the functional use the schizophrenic makes of this tenuousness. They are focusing on the "reactiveness" which would exist in even the "process's" makeup.

The therapist who feels that his strength lies in his capacity to teach the client how to cope with the environment with a minimum amount of frustration might be very effective with the reactive schizophrenic in a relatively brief time. The client will not need to escape to his cold private world if he learns to prevent the frustration in the real world from mounting too high. The therapist who is more comfortable exploring and undoing the autistic nature of his client's world-view might find the process of therapy with the reactive schizophrenic much slower than the former therapist. He might, however, have greater success than this former therapist in working with process schizophrenics. Selection of clients on this basis might lead to greater efficiency.

Further Areas for Research

A next step might be to replicate this study by comparing the reactive schizophrenic group to a clearly non-psychotic population.

Further research could be done on a vastly simplified questionnaire consisting of five time words, with the instructions to the subject to choose the one in each pair that he prefers. This would eliminate confusing instructions and boredom on the part of the subjects.

One could further test the conceptualization of the reactive-process distinction as an escape-inadequacy distinction by finding out whether reactive schizophrenics prefer stories with escape themes more than process schizophrenics do.

Other, more complex experimental predictions can be made. Pearl (1962) points out that the schizophrenic restructuring of reality is not all-encompassing; rather it focuses on the area of anxiety. The findings presented here suggest that this would be most true of "reactives" for whom this reorganization functions as an escape. According to Berkman's conceptualization of time estimation as being based on internal, proprioceptive cues (1965), "reactives'" preception of strong external threats should be more distorted than their time estimations during this period. This difference would not be

true of "processes" for their "restructuring" of reality is not an escape, but rather a fact of existence and would therefore be non-specific.

SUMMARY

Reviews of the nature of time perception and of the process-reactive dichotomy in schizophrenia led to the conclusion that the two areas are related. Based on this understanding, the predictions that reactive schizophrenics will evaluate timelessness more positively than process schizophrenics and than non-spychotic controls and will evaluate time-bound concepts more negatively than the controls were made. This is in keeping with the conceptualization that escape from reality serves a far greater function for the "reactives" than for the other two groups. Timelessness, as an important mode of this escape, would therefore be positively evaluated.

Five timeless and five time-bound concepts were rated by means of six evaluative semantic differential scales by 35 process schizophrenics, 35 reactive schizophrenics, and 23 controls (general hospital patients). Analysis of the ratings revealed that:

1. "reactives" rated timeless words more positively than process schizophrenics;
2. no significant differences in the ratings of time-bound words for the two groups were obtained;

3. reactives tended to evaluate timeless words more positively than controls, while the opposite was true with respect to the time-bound words.

The results were interpreted as confirming the hypothesized relationship between schizophrenia and temporality.

APPENDICES

APPENDIX A

SEMANTIC DIFFERENTIAL MEASURE OF TIMELESSNESS

People have different feelings about different words. On the following pages you will find a number of words. Following each of the words are six different ways you might feel about that word. These feelings are written with their opposites, such as "good and bad" or "pleasant and unpleasant." Between each opposite are six spaces, for example:

monkey:

good __ __ __ __ __ __ bad

The word is monkey and you would put an X in the space that shows your feelings about monkeys best. If you have very good or very bad feelings about monkeys you would put an X in the end space closest to that feeling, like this:

good X __ __ __ __ __ bad (for very good)

good __ __ __ __ __ X bad (for very bad)

If you have generally good or generally bad feelings about the word you would put an X in the next to the end space on the side of the feeling it generally gives you, like this:

good __ X __ __ __ __ bad (for generally good)

good __ __ __ __ X __ bad (for generally bad)

If you feel only slightly one way or the other about the word you would put an X in the middle space which is closest to the feeling you feel slightly, like this:

good __ __ X __ __ __ bad (for slightly good)

good __ __ __ X __ __ bad (for slightly bad)

Please show how you feel about each of the following words by putting X's in the spaces between each of the opposite feelings listed underneath them. Do not skip any. If you are not sure where to put your X, guess.

1. Forever

bad	_ _ _ _ _ _	good
beautiful	_ _ _ _ _ _	ugly
kind	_ _ _ _ _ _	cruel
unpleasant	_ _ _ _ _ _	pleasant
happy	_ _ _ _ _ _	sad
awful	_ _ _ _ _ _	nice

2. Schedule

nice	_ _ _ _ _ _	awful
sad	_ _ _ _ _ _	happy
pleasant	_ _ _ _ _ _	unpleasant
cruel	_ _ _ _ _ _	kind
ugly	_ _ _ _ _ _	beautiful
good	_ _ _ _ _ _	bad

3. Timeless

unpleasant	_ _ _ _ _ _	pleasant
beautiful	_ _ _ _ _ _	ugly
awful	_ _ _ _ _ _	nice
kind	_ _ _ _ _ _	cruel
happy	_ _ _ _ _ _	sad
bad	_ _ _ _ _ _	good

4. Minute

bad	_ _ _ _ _ _	good
beautiful	_ _ _ _ _ _	ugly
kind	_ _ _ _ _ _	cruel
unpleasant	_ _ _ _ _ _	pleasant
happy	_ _ _ _ _ _	sad
awful	_ _ _ _ _ _	nice

5. Eternity

pleasant	_ _ _ _ _ _	unpleasant
ugly	_ _ _ _ _ _	beautiful
nice	_ _ _ _ _ _	awful
cruel	_ _ _ _ _ _	kind
sad	_ _ _ _ _ _	happy
good	_ _ _ _ _ _	bad

6. Timetable

awful	_ _ _ _ _ _	nice
unpleasant	_ _ _ _ _ _	pleasant
good	_ _ _ _ _ _	bad
cruel	_ _ _ _ _ _	kind
happy	_ _ _ _ _ _	sad
beautiful	_ _ _ _ _ _	ugly

7. Everlasting

kind	_ _ _ _ _ _	cruel
sad	_ _ _ _ _ _	happy
beautiful	_ _ _ _ _ _	ugly
awful	_ _ _ _ _ _	nice
pleasant	_ _ _ _ _ _	unpleasant
bad	_ _ _ _ _ _	good

8. Calendar

cruel	_ _ _ _ _ _	kind
sad	_ _ _ _ _ _	happy
good	_ _ _ _ _ _	bad
ugly	_ _ _ _ _ _	beautiful
nice	_ _ _ _ _ _	awful
pleasant	_ _ _ _ _ _	unpleasant

9. Whenever

good	_ _ _ _ _ _	bad
ugly	_ _ _ _ _ _	beautiful
cruel	_ _ _ _ _ _	kind
pleasant	_ _ _ _ _ _	unpleasant
sad	_ _ _ _ _ _	happy
nice	_ _ _ _ _ _	awful

10. Hourly

nice	_ _ _ _ _ _	awful
sad	_ _ _ _ _ _	happy
pleasant	_ _ _ _ _ _	unpleasant
cruel	_ _ _ _ _ _	kind
ugly	_ _ _ _ _ _	beautiful
good	_ _ _ _ _ _	bad

APPENDIX B

ULLMAN-GIOVANNONI SELF-REPORT INVENTORY

Please check whether each statement is true or false about you.

	True	False
When I leave the hospital I will live with my wife.	___	___
As a civilian I have worked steadily at one job or for one employer for over two years.	___	___
I hardly ever went over to another kid's house after school or on weekends.	___	___
Alcohol has nothing to do with my difficulties.	___	___
More than once in the last year I have stayed on after some group meeting and talked with some other members about something that went on.	___	___
My top wage in the last five years was less than $1.25 an hour.	___	___
In my teens there was more than one girl with whom I had more than two dates.	___	___
I have been married.	___	___
When I leave the hospital I will live with one or both of my parents.	___	___
I finished at least one year of education after high school -- trade apprenticeship, business school, etc.	___	___
In my teens I was a member of a group of friends who did things together.	___	___
Shortly before I came into this hospital there was some major change in my life -- such as marriage, birth of a baby, death, injury, loss of job, etc.	___	___

	True	False
I have been deeply in love with someone and have told them about it.	__	__
In the kinds of work I do, it is expected that people will stay for at least half a year.	__	__
I have had to stay in a mental hospital for more than one year at a time.	__	__
In my teens I was a regular member of a club or organization that had a grownup who came to meetings (scouts, school club, 4 H, church youth group, etc.).	__	__
Adding up all the money I earned for the last three years it comes to less than $700 before deductions.	__	__
I am married now.	__	__
Within the last five years I have spent more than half the time in a mental hospital.	__	__
I have fathered children.	__	__
When I was in school I didn't like Physical education class.	__	__
I have paid regularly to buy a house.	__	__
Before I was 17 I had left the home I was raised in and never went back except for visits.	__	__
I have earned my living for longer than a year at fulltime work.	__	__

APPENDIX C

THORNDIKE VOCABULARY TEST

INSTRUCTIONS

Please look first at the word in capital letters on each line. Then look at the other words in smaller type and circle the ONE of these words which comes closest in meaning to the one in capital letters.

EXAMPLE

BEAST 1. afraid 2. words 3. large 4. animal 5. bird

The correct answer in the example is number 4 since the word "animal" is closer in meaning to the word "beast" than any of the other words are.

IMPORTANT: Do only one line at a time, and please take each line in order. If you do not know the answer, guess and go on to the next answer. No one is expected to know all the answers.

SPACE	1.	school	2.	noon	3.	captain	4.	room	5. board
LIFT	1.	sort out	2.	raise	3.	value	4.	enjoy	5. fancy
CONCERN	1.	see clearly	2.	engage	3.	furnish	4.	disturb	5. have to do with
BROADEN	1.	efface	2.	make level	3.	elapse	4.	embroider	5. widen
BLUNT	1.	dull	2.	drowsy	3.	deaf	4.	doubtful	5. ugly
ACCUSTOM	1.	disappoint	2.	customary	3.	encounter	4.	get used	5. business
CHIRRUP	1.	aspen	2.	joyful	3.	capsize	4.	chirp	5. incite
EDIBLE	1.	auspicious	2.	eligible	3.	fit to eat	4.	sagacious	5. able to speak
PACT	1.	puissance	2.	remonstrance	3.	agreement	4.	skillet	5. pressure
SOLICITOR	1.	lawyer	2.	chieftain	3.	watchman	4.	maggot	5. constable
ALLUSION	1.	aria	2.	illusion	3.	eulogy	4.	dream	5. reference
CAPRICE	1.	value	2.	a star	3.	grimace	4.	whim	5. inducement
ANIMOSITY	1.	hatred	2.	animation	3.	disobedience	4.	diversity	5. friendship
EMANATE	1.	populate	2.	free	3.	prominent	4.	rival	5. come
MADRIGAL	1.	song	2.	mountebank	3.	lunatic	4.	ribald	5. sycophant
CLOISTERED	1.	miniature	2.	bunched	3.	arched	4.	malady	5. secluded
ENCOMIUM	1.	repetition	2.	friend	3.	panegyric	4.	abrasion	5. expulsion
PRISTINE	1.	flashing	2.	earlier	3.	primeval	4.	bound	5. green
TACTILITY	1.	tangibility	2.	grace	3.	subtlety	4.	extensibility	5. manageableness
SEDULOUS	1.	muddied	2.	sluggish	3.	stupid	4.	assiduous	5. corrupting

APPENDIX D

Table 5. Summary Table of Comparisons Between Groups

	N	Vocabulary	Age	Chronicity 1[a]	Chronicity 2[b]	Chronicity 1&2[c]
Process group	35	Mean = 8.848 SD = 2.884	Mean = 30.600 SD = 8.727	8.6%	5.7%	8.6%
Reactive group	35	Mean = 8.558 SD = 2.893		8.6%	0	8.6%
Control group	23	Mean = 9.285 SD = 1.764	Mean = 34.913 SD = 8.903	0	0	8.6%

[a] Percentage responding "Yes" or "I have had to stay in a (mental) hospital for more than one year at a time," and "No" to b.

[b] Percentage responding "Yes" to "Within the last five years I have spent more than half the time in a mental hospital," and "No" to a.

[c] Percentage responding "Yes" to both a and b.

APPENDIX E

Table 6. t-Test of the Difference Between Groups by Adjectival Polarities.

	Process-Reactive[a]	Reactive-Control[b]	Process-Control[b]
Bad-Good	-1.035	-.272	-1.149
Ugly-Beautiful	-1.339	-.081	-1.236
Cruel-Kind	-1.309	-.327	-1.446
Unpleasant-Pleasant	-1.552	-.079	-1.420
Sad-Happy	-1.082	-.669	-1.614
Awful-Nice	-1.423	-.373	-1.567

[a]Reactives scored the words more positively.

[b]Controls scored the words more positively.

A consistency across adjectival polarities for each group-comparison is evident.

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