Conceptual performance of schizophrenics as a function of task structure and modality of presentation.

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Conceptual Performance of Schizophrenics as a Function of Task Structure and Modality of Presentation

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B.A. 1964 Oakland University

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Purpose

The purpose of this study is to investigate verbal concept performance in good premorbid schizophrenics, poor premorbid schizophrenics, and normals when oral and written conditions of enriched verbal material are introduced. It is hoped that this study will show that under certain experimental conditions, schizophrenic performance will improve on a task which provides added verbal structure and conceptual redundancy. This study is based upon a previously reported research by Blaufarb (1962), and an experimental study extending Blaufarb's findings (Harlin, Heywood, and Felson, 1965), as well as upon certain authors (McGhie & Chapman, 1961; Lowson, McGhie & Chapman, 1964; Freeman, Cameron & McGhie, 1965) who have extended the theoretical findings of Cameron, Sullivan, Goldstein and others.

Theories of Schizophrenic Deficit

Cameron, Sullivan, and Goldstein see schizophrenia as involving a reaction to serious interpersonal disturbances in the early formative years of life. At this time, the sense of personal security may be threatened if an individual is highly sensitive to interpersonal cues.

Cameron (1946) stresses that this sense of insecurity eventually leads to private and idiosyncratic ways of thinking and talking. As a result, further attempts at communication tend to become interspersed with the overinclusion of personal fantasies. Similarly, Sullivan (1946) asserts that the schizophrenic's attempt to attain durable security by withdrawing from interpersonal threat, results in a lack of consensual validation. Thoughts and speech are not exposed for validation or clarification, but remain private and autistic. Goldstein (1946), as a result of an interest in conceptual performance posited two levels of functioning.
In regard to the specific abstract and concrete attitudes postulated, Goldstein contended that schizophrenics typically react to dangerous situations with abnormal concreteness.

In regard to these above mentioned theorists, there appears to be agreement that the schizophrenic disorder is related to their limited ability to deal with the cues which are provided them. Research investigations of the ramifications of these theoretical positions were initially direct offshoots of the theories themselves. Later investigators, influenced by other theorists as well as the views proposed by Conron, Sullivan, and Goldstein, have extended their viewpoints and have suggested certain theoretical modifications.

Theoretical Extensions Related to Schizophrenic Deficit.

1. Beyond the "Abstract-Concrete" Definition

The evidence which Goldstein has cited for his theory is the relatively poor performance of schizophrenics on certain tasks (Solles & Goldstein, 1933). Specifically, the results of the Goldstein-Scheerer test provided evidence of the schizophrenic's tendency to be excessively concrete.

Goldstein and Scheerer (1941) concluded that this measure was "suitable for determining impairment of the abstract attitude in cases of mental deficiency due to abnormal development, brain lesions and schizophrenia (109)." Vygotsky also provided a measure consisting of twenty-two wooden blocks for evaluating deviency in concept formation. In 1942, Hanfmann and Kasnin used this measure with schizophrenic patients, brain-damaged patients, and normal subjects. Their results led them to conclude that schizophrenics think largely in more concrete terms than the other groups tested.
In a review of these findings, Duss and Lang (1965) state that it is difficult to interpret this body of data. They assert that "the Goldstein-Scheerer test is non-quantitative and requires a rating of concreteness by the experimenter. The Vygotsky test uses a combination time-help scene that confounds slowness with poor performance. Furthermore, in many of the studies adequate control groups were absent." Thus, they conclude: "these early studies are inconclusive (Duss & Lang, 1965, 1A)."

Investigators over the years have been able to demonstrate that the conceptual performance of schizophrenics, or at least some schizophrenics, deviates from the performance of normals in many respects. The assertion that schizophrenics tend to be abnormally concrete, however, may be somewhat misleading since not all schizophrenics may deviate significantly from normals in their conceptual performance. Estimates vary as to the proportion of schizophrenics who do not manifest such a deficit. Hauk-Hamman and Kocanin (1942) for example, using the Vygotsky test, found that 16 per cent of their subjects showed little or no deficit, 40 per cent showed mild to moderate deficit, and 42 per cent showed marked deficit.

In a more recent study, Fey (1951) proceeded to question the experimental efficacy of a theoretical concept such as the "loss of abstract attitude." Although the results of her experimental presentation of a card sorting task evidenced the expected decrement in schizophrenic performance, she noted that none of the concrete responses found to be characteristic of the schizophrenic subjects were limited to that group. There was a notable amount of concreteness manifested by the control group as well.

In 1960, Lothrop evaluated schizophrenic conceptual performance using the Object Sorting Test devised by Rappaport (1945) as his measure. The author noted that one third of the sixty-four subjects included in the
study demonstrated little or no deficit by Rappaport's norms. The eventual conclusion drawn was that, "...abnormal concreteness may not be characteristic of all schizophrenics (1960,498)."

Results such as the above led Lothrop (1961), in a recent review of the area, to raise the question as to whether there is an impairment of abstracting ability per se. He suggests that abstracting ability, "...merely appears impaired because of some other deficit-producing factors involved in the performance." A possible alternative explanation for the schizophrenic's lowered performance on conceptual tasks was initially formulated by Cameron.

II. Beyond the "Overinclusion" Definition

Cameron was one of the first to highlight the schizophrenic's limited ability to maintain logical conceptual boundaries. As a consequence of a lack of internal organization, Cameron (1939) specifically notes, the schizophrenic manifests "a conspicuous failure to eliminate conflicting and irrelevant elements, and to maintain clear boundaries (265)". The schizophrenic's limited socio-verbal development is often seen to result in a deficient ability to focus on the relevant cues and inhibit the interpenetration of stimulation unrelated to the task material being dealt with. Presumably, this overinclusion of irrelevant stimulus elements impairs performance on conceptual tasks. A number of experiments since Cameron's original observations have indicated that schizophrenics do tend to be overinclusive.

Epstein (1953) has supported the finding that the schizophrenic's thought processes are typically overinclusive. The task required that the subject select from a group of words those appropriate to a particular cue word. Compared to a normal group, the schizophrenic group was found to be more overinclusive.
Payne et al (1959) saw overinclusiveness as a fundamental aspect of schizophrenic thought. Schizophrenics and neurotics were given a large battery of tests in an attempt to ascertain whether schizophrenic thinking impairment could best be described as concrete or overinclusive. The results supported the latter description.

Chapman and Taylor (1957) had subjects sort different items under specific headings or concepts such as clothing, furniture, and fruit. In comparison to normals, the schizophrenics evidenced greater overinclusiveness. While agreeing that overinclusion is a basic phenomenon in schizophrenic thought, the authors did not regard their finding as signifying a loss of conceptual ability, but rather a result of an over-responsiveness on the part of the schizophrenic to distracting stimuli.

Chapman, after having reported strong evidence for the overinclusion hypothesis, was not completely satisfied with it. In a recent study using schizophrenic and normal subjects, Chapman (1962) presented two kinds of tasks; one tending to elicit errors of overinclusion, and one tending to elicit overexclusion. Although there was a predominance of overinclusion errors, schizophrenics were found to make both kinds of errors. Normals also evidenced similar tendencies, yet to a lesser degree.

The indication that impairment in conceptual functioning is not exclusively a result of overinclusion per se, may imply that the schizophrenic's conceptual impairment should be viewed from yet a different vantage point. Previous evidence has indicated that the performance of normals, as well as of schizophrenics, is often concrete (Fey, 1951), or overinclusive (Chapman & Taylor, 1957), although to a lesser degree than with schizophrenics. It is possible that the ability necessary to function effectively on conceptual tasks is merely less developed with the schizophrenic.
In a recent review, for example, Lothrop (1961) noted that "substantial evidence has been accumulated to indicate that schizophrenics are 'overinclusive,' but whether this factor by itself is sufficient to account for the deficit in conceptual performance cannot be decided until the question of whether ability is also impaired is settled (12%)." In dealing with this question, several authors have postulated that the schizophrenic's decrement in conceptual performance is a result of an impairment of the attention processes. Seth and Beloff (1959), for example, in a study which compared the performance of schizophrenic and tubercular controls on a verbal task found results which supported Chapman's findings that errors made by schizophrenics are exaggerations of the error tendencies evidenced by the controls, and hence led these authors to suggest that the underlying reason for this was a lowering or alteration of the attention processes.

In summary, the evidence tends to indicate that the concrete, as well as the overinclusive tendencies in schizophrenic thought, are response styles which provide evidence of a more basic dysfunction. Following the suggestion of Seth and Beloff (1959), it is possible to assume that schizophrenics have never fully developed the ability to effectively direct and delimit their attention to those cues which are appropriate. The position the schizophrenics have never adequately developed the ability, or ego-function, of selective attention has recently been advanced by several authors.

Attention: A Reappraisal of Schizophrenic Deficit

I. Theoretical Constructs

The contention that a predominant feature of schizophrenia is impaired attention has its historical roots in Kraepelin's early writings (1919).
Freud (1955) also forwarded some understanding of the functioning of purposive attention. In his original conception, consciousness was regarded as a sense organ which was in receipt of stimuli from both the environment and the interior. Freeman et al (1965) highlight the apparent confluence of Freud's initial view of consciousness, and that of attention. These authors note that under normal conditions, attention is capable of being flexibly directed internally or externally, as well as being disengaged and refocused on matters of greater urgency. Hence, the individual who is capable of concentrating on specific cues when necessary.

The development of normal attention processes is regarded, by psychoanalytic theory, as resulting from the appropriate development of cathetic barriers which insulate the individual from excessive stimulation. "Under normal conditions the countercathetic barriers insulate the cognitive functions necessary for environmental adaption. External stimuli are screened out and only those percepts of adaptive value are permitted admission to consciousness...An inner countercathexis walls off the ego from the special form of activity that characterizes unconscious mental processes - the primary process. This countercathexis also ensures the exclusion from consciousness of instinct ridden ideational contents" (Freeman et al, 1965, 72).

On the other hand, a deficiency in the development of the insulating cathetic barriers results in the malfunctioning of attention processes. Freeman, Cameron and McGhie (1965) assert that with schizophrenics the countercathetic walls have become permeable; the capacity to attend is limited because of certain alterations that affect the ego organization. Excessive bombardment by both internal and external stimulation results in a state of anxiety, and hence withdrawal. As a result of this with-
drawal, the schizophrenic's ability to direct his attention toward, or select out, ideation contents or specific external events, is diminished. It would follow, therefore, that the schizophrenic, by withdrawing his attention from external cues, hampers his ability to develop effective concepts which relate to the world around him.

The theories of Cameron, Sullivan, and Goldstein, also emphasize the factor of anxiety leading to withdrawal. Cameron (1946) suggested that as a result of anxiety out of insecurity during early childhood, the schizophrenic withdraws into personal fantasy; his capacity for social communication deteriorates and he becomes "disarticulate." Similarly, Sullivan (1946) notes that the schizophrenic, in his search for durable security, turns from external consensual validation and hence undergoes a progressive loss of control over the early "referential processes" which subsequently dominate his consciousness. Goldstein (1959) also referred to the relationship of anxiety and withdrawal. He indicated that the concrete attitude functions as a "...protective mechanism against anxiety which originated in early youth... (1959, 147)." The emphasis on the use of the concrete attitude results in the delimiting of the schizophrenic's ability to attend to all of the cues which are presented to him. Hence, the above theorists appear to agree with the psychoanalytic formulation that the dissolution of countercathetic barriers results in a withdrawal from, and thus decreased attention to, the appropriate external cues.

In general, therefore, the differentiated ego develops to a large extent by a process of selection and inhibition of incoming sensory data. In response to this apparent process, several authors have postulated an internal mechanism which allows the organism to select, from the diffuse
sensory input, the information necessary for it to function effectively.

In 1958, Broadbent developed a psychological model of attention incorporating the concept of a filter mechanism. Operating on a specific decision channel with a limited capacity for handling information, the data which is selected to pass through the filters depends on certain attributes of the stimuli in question and upon the current state of the organism. In order to function effectively, the individual is forced to select and process the relevant cues in such a way as to avoid overloading his limited capacity to deal with it. Broadbent's (1958) experiments have demonstrated that, where information is presented at a rate above the individual's maximum capacity for dealing with it, performance breaks down.

Silverman (1964), in a recent review of the research in attention, has postulated a "sensory input processing-ideational gating mechanism" for schizophrenics, which functions to filter out or to distort disturbing connotative environmental inputs. Viewing this filtering mechanism as an ultimate means of defense, Silverman suggests that the schizophrenic deals with his experience in a manner which enables him to filter out threatening connotations and hence respond to reality in such a way as to guarantee that no situations will be met which will arouse anxiety. Since the utilization of this defensive gating process may arise whenever it is felt to be necessary, Silverman (1964) further notes that the extent to which it is used is "apparently dependent on (the) premorbid history..." (375) of the schizophrenic.

In summary, it would appear that as a result of anxiety arising out of detrimental childhood experiences, the schizophrenic learns to withdraw from the discomfort of his surroundings. Tenuous cathetic barriers...
against anxiety provoking stimulation are developed, yet the eventual interpenetration of the schizophrenic's ego boundaries - by distressing stimuli - results in the activation of a defensive screening function or "filter." It appears to follow, therefore, that the schizophrenic's piecemeal attention to certain cues, and screening out of others, eventually results in a deficiency in attention; a phenomenon which has been empirically noted by several authors.

II. Empirical Evidence

Recently, a number of empirical studies have highlighted the significance of attention deficits in schizophrenia. Wexikovics and Flewett (1959), investigating the relationship between size constancy and concept formulation in schizophrenia, found the two to be connected. They considered that the disorder of abstract thinking displayed by schizophrenics was due to overinclusiveness and that this same factor was responsible for the perceptual anomalies observed in the patients. Their conclusion was that "the abnormalities of thinking and perception in schizophrenic patients can be described as an inability to attend selectively or to select relevant information (1959, p. 927)." The perceptual and other cognitive difficulties found in schizophrenia are thus, in the opinion of these authors, secondary to a breakdown in the scanning or focusing mechanism of attention.

Shakow (1962), reviewing a number of studies by him and his colleagues on set impairment in schizophrenia, theorized "It is as if, in the scanning process which takes place before the response to a stimulus is made, the schizophrenic is unable to select out the material relevant for optimal response. He apparently cannot free himself from the
irrelevant among the numerous possibilities available for choice...
The more presence of these irrelevant factors seems to lead the schizo-
phrenic to give them focal rather than ground significance...(1962,9).

Venables (1963), who has undertaken a series of studies of the
arousal level of schizophrenic patients, concluded that many of the
behavioral abnormalities shown by these patients were due to variations
in the range of attention. In discussing his experimental findings,
Venables explained many of their difficulties as being related to a
broadened level of attention which causes the patient to be overloaded
by sensory impressions from the environment.

In 1961, Payne reviewed the reports of cognitive abnormalities in
schizophrenia and reached the conclusion that the diverse findings of
most previous investigators could be interpreted as follows: "The
mechanism of attention itself seems to become defective. Whatever
filtering mechanism ensures that only the stimuli (internal or external)
that are relevant to the task enter consciousness and are processed, seems
no longer able to exclude the irrelevant (251)."

Chapman, Freeman, and McGhie (1959) presented a detailed study of a
single case of a schizophrenic patient. It suggested to them that a young
schizophrenic patient at an early stage of his illness is able to describe
more directly the subjective changes which he is currently experiencing.
In a later clinical study (McGhie & Chapman, 1961), a standard interview
was used to encourage twenty-six schizophrenics to describe in their own
words, recent changes in their experience. In presenting the clinical
data collected in this way, the authors attempted to arrange these reports
under general areas of cognitive disturbance. Apart from the more commonly
observed disorders of ego function, one category of change experienced by
the patients seemed to outweigh all others in the frequency with which it
was reported. This they referred to as a disturbance in the selective and
inhibitory functions of attention. In a more recent review of these
findings, those same investigators (Freeman et al, 1965) concluded: "Our
patients' reports suggested that they were no longer able to make such
selective responses and that their perception, thinking, and actions were
being continually disrupted by this inability to inhibit or screen out
sensory data unconnected with their current activity (179)."

In summary, these studies suggest that impaired attention has an
overriding effect in various areas of schizophrenic functioning. For the
purposes of this study it will be assumed, therefore, as indicated by
Weckowicz and Blewett (1959), that the schizophrenic's overall distract-
ability, as well as the concrete, overinclusive, and irrelevant responses
are secondary products of a more primary disruption in the focusing mechanism
of the attention process.

These studies also suggest that conceptual deficit may vary with
certain factors in the experimental situation. Consideration has been
directed toward factors which may influence the schizophrenic's delimited
ability to selectively attend to the material. Specifically, the lack of
structure on conceptual texts is seen as possibly encouraging the production
of irrelevant responses, and hence, conceptual deficit (Lothrop, 1961).

Task Structure and Schizophrenic Deficit

In a study using normals, Miller and Selfridge (1950) constructed a
series of structured passages of English words exhibiting varying degrees
of contextual constraint. The first passages in their series contained
no contextual constraint; that is, the words were unrelated and selected at random. The final passages were taken from standard English tests and therefore represented the highest degree of contextual constraint possible. The intervening passages were graded according to the degree of contextual constraint involved in their structure. Presenting this series of passages to a small group of subjects, Miller and Selfridge showed that they were able to utilize the increasing degrees of verbal structure to improve their performance.

In a study of the relationship between increased task structure and schizophrenic conceptual performance, Hall (1956) required a schizophrenic and non-psychotic group to pair nonsense syllables with the representatives of a conceptual class, under varying degrees of task structure. In discussing the findings, Hall indicated that even though his results did not meet the level of significance, the schizophrenics did provide "...an increase in the number of concepts with increased structure (793)."

In 1964, Toloi used schizophrenic, organic, and normal subjects in a study designed to discern the relationship between improved conditions of attention and the ability to abstract. As a measure of abstract thinking, he used the Similarities subtest on the Wechsler Adult Intelligence Scale, as well as a multiple choice form of the same task. One of the significant findings of this study was that with increased task structure, the schizophrenics did not differ from the normals.

In summary, the results suggest that by augmenting the structure of a task, schizophrenics may not only improve, but their performance may even reach the level of normal functioning. As will be seen, this contention has been examined by others in studies which have been made use of proverb tasks.
Proverb Tasks and Schizophrenic Deficit

Proverb tasks have been used in numerous studies for the purpose of evaluating schizophrenic conceptual ability. The results of several of these studies have demonstrated consistent conceptual deficit on proverb tasks (Elmore & Gorham, 1957; Glass, 1956; Gorham, 1956).

In response to Lothrop's (1961) finding that many of the current tasks encourage irrelevant responses due to their ambiguous structure, Blaufarb (1962) provided a more structured task for his subjects. The structural task which Blaufarb devised, involved giving the meaning of proverbs. He contended that if these task stimuli and instructions were complete, the schizophrenics would then be able to perform more effectively. The enriched task material which Blaufarb presented consisted of sets of proverbs, each set containing three different proverbs, but all three calling for a single abstract interpretation. Hence, by saturating the subjects with task relevant cues, the tendency to strain the schizophrenic's limited ability to filter out irrelevant information was reduced.

Prior to the presentation of the task material, Blaufarb (1962) provided the subjects with extended instructions regarding the nature of the task. Both chronic schizophrenics and a normal control group were asked to respond to the proverb sets, as well as to provide the meaning for each individual proverb included in an equated group of randomly selected single proverbs. The results of this study demonstrated that under enriched stimulus and instructional conditions, chronic schizophrenics could improve their performance on an abstracting task, as well as evidence a greater improvement in their abstracting performance, than normal subjects. The results tend to suggest, therefore, that the provision of enriched task
structure reduces the schizophrenic's difficulty in attending to, and
dealing effectively with, the relevant material presented him.

In 1965, Hamlin, Haywood, and Folson extended Blaufarb's (1962) re-
sults by investigating the effects of enriched input over four degrees of
pathology; three schizophrenic groups, and one nonschizophrenic group.
These authors anticipated that Blaufarb's proverb task would have dif-
fering effects on the four levels of pathology considered. Specifically,
only patients with a medium degree of schizophrenic pathology would benefit
from enriched input. Severe schizophrenics were not expected to benefit
from the multiple proverb procedure due to their generalized cognitive
disorganization. Their differentiation of schizophrenic groups included:
(I) closed ward schizophrenics (II) open ward schizophrenics, and (III)
former schizophrenic patients in remission. The nonschizophrenic control
group (IV) consisted of neurotics, personality disorders, and some medical
patients without neuropsychiatric diagnoses. The results provided con-
formation of Blaufarb's (1962) findings as well as basically supporting the
predictions made by Hamlin et al. Nonschizophrenics (IV) were found to do
equally well on both single and set proverbs; while schizophrenics with
medium (II) and mild (III) degrees of pathology showed significant im-
provement under the enriched stimulus condition. The least schizophrenic
subjects (III) gave just as good abstract responses as the nonschizophrenics
(IV) to the multiple proverb sets. The severe closed schizophrenics (I)
evidenced impairment on all tasks, and were unable to benefit from the
enriched stimulus procedure.

In general, the studies of Blaufarb (1962) and Hamlin et al (1965)
indicate that enrichment of instructions, and increasing the structure of a
proverb task, enables the schizophrenic to attend to the relevant information provided him. By assisting the schizophrenic to filter out the irrelevant cues, both studies demonstrated that less severe types of schizophrenic cannot only improve their performance on a verbal abstracting task, but can evidence greater improvement in their abstracting performance than normal subjects.

Under closer examination, there is some confusion regarding the schizophrenic groups used in both of the above studies. In the Blaufarb study (1962), for example, the chronic group was essentially composed of paranoid schizophrenics. Blaufarb notes that, "Included in the (chronic) sample were 23 subjects with staff diagnoses of paranoid subtype, and 7 subjects with diagnoses of chronic undifferentiated subtype. Schizophrenics with the subtype diagnosis of hebephrenia were excluded (1962: 472)." Several authors have commented on the fact that paranoid schizophrenics usually demonstrate the least deficit. Shakow (1962) noted that "Our own data have suggested that paranoid and the hebephrenic subtypes represent two quite disparate kinds of reaction to the basic schizophrenic disturbance (3)." Similarly, others have suggested that paranoid schizophrenics demonstrate the least deficit (Gorham, 1956; Weckovicz & Blovett, 1959; Wegrocki, 1940) and hebephrenics the most (Wegrocki, 1940). This evidence tends to suggest that not only is the paranoid schizophrenic's abstracting performance more effective, but their ability to attend to task material seems better developed. Freeman et al (1965), for example, noted that "there are many patients, particularly those who fall into the categories of the paranoid state and paranoid schizophrenia, who appear to be able to attend adequately to a set task... (77)." Hence, due to the prevalence of paranoids in
Blaufarb's chronic group, it is therefore not surprising that their performance was essentially similar to the results provided by Hamlin et al's (1965) less severe schizophrenic groups.

The selection of schizophrenic subjects in the Hamlin et al (1965) study, also demands more careful scrutiny. These authors noted that several of their earlier studies indicated that their schizophrenic samples represented "distinct steps on a continuum of schizophrenic pathology (390)." A consideration of this research (Haywood, Goldman & Beck, 1961; Hamlin & Nemo, 1962; Hamlin & Jones, 1963; Haywood & Koelis, 1963), tends to indicate that their criterion for selection was essentially based on whether the schizophrenic was on a locked ward (closed ward schizophrenic group), unlocked ward (open ward schizophrenic group), or living in a domiciliary, as well as working on a Community Development Program at the Denville Veterans Administration Hospital (former schizophrenic patients in remission group). Mention was made by Hamlin et al (1965) that an unpublished research by Haywood had shown that "three of the four subject sources show highly reliable differences on Lorr's Psychotic Reaction Profile (Hamlin et al, 1965, 391), yet the scale was apparently not use in any of the above four studies which Hamlin et al cited. Since the criterion of locked ward, unlocked ward, and domiciliary patients appears to allow for a great deal of variability with each group, the current study has introduced a more exacting criterion measure of the degree of pathology found at each of the levels to be sampled. In particular, the Phillips Scale of Premorbid Adjustment (Phillips, 1953) was employed.

In summary, the studies of Blaufarb (1962) and Hamlin et al (1965) suggest that enriched instructions and increased instruction enhance the
schizophrenic's ability to attend to relevant material. Severe schizophrenics tend to show little, if any improvement under these conditions, while less severe schizophrenics not only improve their performance on a verbal abstracting task, but evidence greater improvement than normal subjects.

**Premorbid Adjustment and Schizophrenic Deficit**

As a diagnostic entity, schizophrenia is generally regarded as being a heterogeneous group. Previous research has undertaken to differentiate the broad classification of schizophrenia into homogeneous subgroups so that more effective generalizations may be made regarding behavior and conceptual performance. Several dichotomizations exist such as acute-chronic, reactive-process, and good-poor premorbid schizophrenics. In regard to the latter dichotomy, numerous studies have found that premorbid adjustment is a relevant variable in schizophrenic conceptual behavior.

In a review of the findings related to the effectiveness of the good-poor premorbid differentiation, Silverman noted that several studies indicate that "such clarification reduces performance variability between experimental groups and yields significant differences between these two groups of schizophrenics (1964, 354)." Silverman also notes that the extent to which the schizophrenic defensively gates out relevant cues, thus decreasing his ability to attend, is "apparently dependent on (the) premorbid history...(1964, 375)." That is to say, there is an apparent direct relationship between the level of the schizophrenic's premorbid adjustment and his ability to attend effectively, and hence, his ability to perform effectively on an abstracting task.
While Silverman (1964) and others have noted the relationship between schizophrenic premorbid adjustment and conceptual performance, others have recently indicated as well the importance of the modality of task presentation as a significant variable. **Differing Modalities and Schizophrenic Deficit**

In several of the former studies designed to enhance the structure of the task material presented, the importance of the type of modality used has only been recently recognized. Tolor (1964) for example, in a study designed to discern the relationship between improved conditions of attention and the ability to abstract, indicated that expression in written and auditory modalities may result in differing findings. In response to this, Tolor noted that "the type of sensory modality used needs to be specified (391)."

Recently, Freeman, Cameron and McGhie (1965) have related some clinical self-reports made by schizophrenics regarding their reception of incoming information. In these reports, many of the comments suggested that distraction, particularly in the auditory modality, tended to interfere with their ability to attend, and thus, impeded their responding. One schizophrenic stated, for example, "I can't concentrate. It's division of attention that troubles me... The sounds are coming through to me but I feel my mind cannot cope with everything. It's difficult to concentrate on any one sound... (178)." Reports such as this suggested to the authors that the schizophrenics' difficulties in speech comprehension resulted, not from an inability to perceive the individual words which comprise a connected discourse, but from a deficiency in attending to, and perceiving the words in meaningful relationship to each other as part of a structured, organized pattern.
As a result of these findings, some of the same authors initiated a study whereby they accounted not only for the structured aspects of the task presentation, but the modality as well. Using the Miller and Selfridge (1950) series of passages discussed earlier, Lawson, McGie, and Chapman (1964) presented — in auditory form — a modified series of low contextual constraint, and high contextual constraint passages to a schizophrenic and normal control group. Their results indicated that under auditory conditions of presentation, "the schizophrenic patients showed a relative inability to take advantage of the increasing levels of organization in the series of passages presented (376)."

In summary, this finding tends to negate the contention that increased structure per se will enhance the schizophrenic's abstracting performance. It appears that increased structure in the context of an orally presented task will not assist the schizophrenic markedly in his performance; while enriched, written task presentations — as noted earlier — do tend to result in conceptual improvement.

To review the premorbid breakdown of the filtering function of the attention process is seen as being the basic factor influencing the schizophrenics often noted deficiency on conceptual tasks. The effect of task enrichment is seen as assisting the schizophrenic in his attempt to focus on the relevant and filter out the irrelevant cues. The effectiveness of this structural assistance in aiding the schizophrenic to improve on a conceptual task appears to be related not only to the level of premorbid adjustment, but to the modality of presentation. While written enrichment appears to result in improvement, an oral presentation of enrichment may not provide similar assistance.
Statement of the Problem

The current study will undertake to determine the level of conceptual performance manifested by schizophrenics of differing degrees of pathology when presented a multiply enriched task as well as to note specifically the levels of schizophrenic performance under conditions of an oral and written presentation of the enriched stimulus material.

One of the principal questions of this study is to determine if good premorbid schizophrenics are not only able to show improvement in abstracting performance, but show greater improvement as compared to normals, when written information about the task is amplified, and when written proverb sets are presented. Another question seeks to investigate if poor premorbid schizophrenics will not show improvement when written information about the task is amplified, and when written proverb sets are presented. The impetus for these questions springs from the theoretical writings of Freeman, Cameron, and McGhie (1965), as well as the empirical findings of Blaufarb (1962) and Hamlin et al (1965).

Another issue deals with the ability of schizophrenics to profit from an enriched oral presentation of proverbs. The theoretical writings of Freeman, Cameron, and McGhie (1965) seem to indicate that schizophrenics are less able to deal effectively with orally presented information, and the findings of Lawson, McGhie and Chapman (1964) seem to offer evidence that increased structure of orally presented information has little effect on schizophrenic performance. Consequently, one phase of this research is to determine if good and poor premorbid schizophrenics show less improvement when oral proverb sets are presented; that is, when oral information about the task is amplified. It would also appear, according to the findings of
Miller and Selfridge (1950) and Lawson, McGhie and Chapman (1964), that normals might be expected to show no difference in performance under both the oral and written conditions.

Hypotheses

I. There will be an overall hierarchy of performance with the normal subjects surpassing the good premorbid schizophrenics who in turn will manifest better performance than the poor premorbids.

II. There will be an overall interaction between experimental groups, levels of structure, and modalities of presentation as a result of the improved performance of the good premorbids under the written set condition.

III. (A) The good premorbid schizophrenics will show improvement between the written single and set proverb conditions, as well as showing greater improvement when compared to the normals.

(B) The normal subjects and poor premorbid schizophrenics will show no improvement between the written single and set proverb conditions.

IV. The normals, good premorbids, and poor premorbids will not show a difference in performance between the oral presentation of the single proverb condition, and the oral presentation of the set proverb condition.
METHOD

Subjects

The subjects consisted of 20 good premorbid and 20 poor premorbid schizophrenic males from the Northampton Veterans Administration Hospital. The control group consisted of 20 male Nursing Assistants employed at the same hospital. There were thus three groups of 20 subjects each, making a total of 60 subjects. Each of the three groups were further subdivided into "oral" and "written" subgroups; all subjects being randomly assigned to one or the other subgroup.

Regarding the differentiation of schizophrenics according to their premorbid adjustment, the Phillips Scale was used. Many workers, including Phillips (1953), Rednick and Garmezy (1957), Hallman and Kates (1961), Moriarty and Kates (1962), and Buck and Kates (1963), have reported adequate reliability in the use of this measure. As an additional reliability check, two independent raters also determined the premorbidity of two random samples of 10 records specific to the schizophrenics in this study. A correlation of their ratings ($r = .96$) indicated their agreement was highly significant. The other criteria used in the selection of the schizophrenic patients were as follows: (1) cooperative, white males, (2) between the ages of 20 through 55, (3) not actively hallucinating, (4) no other complicating pathology such as organicity, mental retardation, etc., and (5) no lobotomy or E.T.C. during the past year.

Regarding the selection of the control group, The California Test of Personality was used in order to verify the normality of the subjects used. The C.T.P. provides 120 yes-no items. Raw scores which place a subject's performance equal to or above the 50% cut-off are regarded as being within
the normal range (C.T.P. Manual, 1953). In the present study, all of the normal subjects placed on or above the 50th level. The average of the percentile rankings of all the subjects was 63%. The other criteria used included the following: (1) cooperative, white males, (2) between the ages of 20 through 55, (3) no severe or disabling emotional disturbances such as psychosis, neurosis, organic involvement, etc.

Matching

The three groups used in this study were matched on the following variables: (1) Sex, all the subjects were males, (2) Intelligence, (3) Educational Level, (4) Age, and (5) Socioeconomic Status.

In regard to intelligence, the groups in this study were matched in terms of the Vocabulary subtest of the Wechsler Adult Intelligence Scale (Wechsler, 1958). The Vocabulary subtest is highly correlated with the Full Scale I.Q. on the Wechsler Adult Intelligence Scale. Wechsler reports that the correlations between the Vocabulary subtest and the Full Scale are "systematically high between 0.7 and 0.9 and remain consistently so across the age range (1958, 85)."

In order to match the groups on socioeconomic status, the Two Factor Index of Social Position, devised by Hollingshead (1965), was employed. This scale provides a weighted combination of scores derived from the subject's occupational and educational level. The range of occupational class was 1 through 7.

An Analysis of Variance shows no significant differences among any of the twelve subgroups for any of the four matching criteria. Table 1. presents a comparison of the means, standard deviations, and F ratios of the various subgroups for vocabulary, education, age, and socioeconomic status.
Mean Scores of Normals, Good Premorbid Schizophrenics, Poor Premorbid Schizophrenics: For Vocabulary Test, Education, Age, and Socioeconomic Status.

<table>
<thead>
<tr>
<th>Vocabulary</th>
<th>(1/3)</th>
<th>(3/1)</th>
<th>Written Mean</th>
<th>S.D.</th>
<th>Oral Mean</th>
<th>S.D.</th>
<th>F ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normals</td>
<td>10.40</td>
<td>1.36</td>
<td>11.20</td>
<td>0.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good Premorbid</td>
<td>11.40</td>
<td>1.02</td>
<td>10.80</td>
<td>1.33</td>
<td></td>
<td></td>
<td>.68</td>
</tr>
<tr>
<td>Poor Premorbid</td>
<td>10.60</td>
<td>2.65</td>
<td>11.40</td>
<td>2.65</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normals</td>
<td>11.20</td>
<td>1.17</td>
<td>12.40</td>
<td>0.80</td>
<td></td>
<td></td>
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</tr>
<tr>
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<td>11.40</td>
<td>1.74</td>
<td></td>
<td></td>
<td>.08</td>
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<tr>
<td>Poor Premorbid</td>
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<td>2.06</td>
<td>11.40</td>
<td>2.65</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normals</td>
<td>44.20</td>
<td>0.98</td>
<td>43.00</td>
<td>11.08</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good Premorbid</td>
<td>43.20</td>
<td>13.21</td>
<td>42.20</td>
<td>12.89</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor Premorbid</td>
<td>42.60</td>
<td>3.83</td>
<td>46.40</td>
<td>5.00</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Normals</td>
<td>53.40</td>
<td>3.20</td>
<td>50.20</td>
<td>1.60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good Premorbid</td>
<td>51.20</td>
<td>16.07</td>
<td>55.40</td>
<td>11.09</td>
<td></td>
<td></td>
<td>.12</td>
</tr>
<tr>
<td>Poor Premorbid</td>
<td>54.60</td>
<td>12.89</td>
<td>53.20</td>
<td>8.97</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. The means and standard deviations in these rows are based on the scores acquired by subjects who initially received the single proverb condition, and subsequently the set proverb condition.

b. The means and standard deviations in these rows are based on the scores acquired by subjects who initially received the set proverb condition, and subsequently the single proverb condition.
Task Material

The task material used in this study involved giving the meaning of proverbs. Devised and used by Blaufarb (1962), the task items consisted of 17 sets of different proverbs, each set composed of 3 sayings each. The three proverbs in each set have the same meaning. The proverb sets served as the structured multiple-stimuli task items. The less structured condition consisted of single proverbs which were selected from each of the proverb sets. Those single proverbs used for the less structured condition are denoted with an asterisk. The complete task is as follows:

1. A wheel is no stronger than its weakest spoke. *
The rope breaks where it is the thinnest.
A chain is only as strong as its weakest link.

2. Close only counts in horseshoes.
A miss is as good as a mile. *
A golfball on the edge of the hole still needs another stroke.

3. The cracked jug of someone else seems better to you than your sound one.
Another person's silver dollar is always shinnier than your own.
The grass is always greener in the other fellow's yard. *

4. Shallow brooks are noisy. *
A gust of wind from an empty tunnel makes the most noise.
Empty barrels make the most noise.

5. The hawks will eat the one who makes himself a dove.
He who makes himself dirt is stepped on by the pigs. *
He who makes a mouse of himself, the cats will eat.

6. In time a mouse will gnaw through a cable.
Little strokes cut down great oaks.
Slow and steady wins the race. *

7. Strike while the iron is hot. *
Grab with a quick hand the fruit that passes.
Hoist your sail when the wind is fair.

8. A shipwrecked man fears a pond.
He who has been bitten by a serpent is afraid of a rope. *
A scalded dog fears cold water.
9. Don't count your chickens before they're hatched.
Don't bake the cake before the batter is mixed.
Don't cross the bridge until you get to it. *

10. Don't judge a book by its cover. *
All that glitters is not gold.
Don't judge a tree by its bark.

11. Don't rock the boat after it has settled.
Let sleeping dogs lie. *
Once the mud has settled, don't stir it up again.

12. Words have more might than swords. *
The pen is mightier than the club.
A pen is more powerful than a lion's paw.

13. Even a horse who has four legs stumbles sometimes. *
Every man, no matter how sure, cannot hit the nail on the head all the time.
The homing pigeon will lose his way once in a while.

14. Too many generals will lose the war.
Too many chiefs, and not enough Indians, never make a strong tribe. *
Too many cooks spoil the broth.

15. He that wakes first is first bathed.
He who is early at the table gets the hottest food. *
The early bird catches the worm.

16. What good is water when the house is burned down. *
It is too late for the bird to fly when it is caught.
Why lock the stable door after the horse is gone.

17. Rome was not built in a day. *
Great bodies move slowly.
Troy was not captured in a day.

Procedure

Forty schizophrenic subjects (including good premorbid and poor premorbid) and 20 normals were administered either an oral or written presentation of the proverb task. One group of subjects (10 good premorbid schizophrenics, 10 poor premorbid schizophrenics, and 10 normals) received written instructions and a written presentation of the single and set proverbs. The other group of subjects (10 good premorbid schizophrenics,
10 poor premorbid schizophrenics, and 10 normals) received oral instructions and an oral presentation of the single and set proverbs. The design of the experiment is shown on Table 2.

The current study's method of task presentation closely coincides with the procedure used by Elaufarb (1962) and Harlin, Keywood, and Folsom (1965). Each subject was seen individually during three sessions. In the first session, all the subjects were given the Vocabulary subtest of the Wechsler Adult Intelligence Scale. During this session, the normal group was also administered the California Test of Personality. Regarding the second and third sessions, half of the subjects in either the oral or written condition of presentation were given the 17 single proverbs first, the other half were given the proverb sets first. These experimental sessions were separated by time intervals of 2 to 10 days.

The oral presentation of single and set proverbs was given in general accordance with the instructions provided by Miller and Selfridge (1950), as well as Lawson, MoChic, and Charman (1964). Each group of 17 single and set proverbs were read aloud and recorded on a tape recorder. The experimenter's voice was used. The words in each proverb were read "at the rate of one per second...with a short pause between each word (Lawson et al., 1964, 376)."

The time span involved in the written and oral presentations of the single and set proverbs were equated as closely as possible. Under the written condition the single and set proverbs were printed on separate index cards. The time allowed each subject to read the proverb (s), the experimenter respectively retrieved the card or turned off the tape recorder, and the subject was asked to provide the meaning behind the
Table 2.

**RESEARCH DESIGN**

<table>
<thead>
<tr>
<th>Presentation</th>
<th>Subjects</th>
<th>Single Proverb</th>
<th>Set Proverb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written</td>
<td>Normals</td>
<td>(5)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Good</td>
<td>(5)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Poor</td>
<td>(5)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td>Normals</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>(5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Good</td>
<td>(5)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Poor</td>
<td>(5)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(5)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
proverb (s) presented. The verbatim responses were then written down by the experimenter following the subjects' responses.

Instructions

The introductory statement which was presented to all subjects at the beginning of the first experimental session is as follows. The words in parentheses were those used during the oral presentation of the task.

( start this tape recorder. )

"In a few moments I will present you with a sheet of paper. I want you to read carefully what is written. What you will read will be about proverbs, and their meanings. Read carefully and after the information has been read, I will ask you to stop, and then see if you have any questions. Okay, now let's begin."

Next, the tape recording or written statement with the following information was then presented:

"Today I want you to work with some proverbs. Since you may be uncertain about what a proverb is, let me define it for you. A proverb is a saying which has a general meaning, or an idea which goes beyond the words in the saying itself. There is a meaning or idea behind the proverb or saying."

With the presentation of the written or oral single proverbs in the first session, the appropriate written or oral instructions continued as follows:
"Now I'm going to show you some cards and on each of them is a proverb. I want you to think of the meaning or idea behind each proverb or saying. Let's try some so that we can practice finding their meaning. 'A bird in the hand is worth two in the bush.' Now let me tell you what that proverb is saying. That proverb means that something a person is certain of or has in his possession is more valuable than other things, even more valuable, which a person isn't certain of, or does not have in his possession. Here is another proverb. 'Don't cry over spilt milk.' Now, let me tell you what that proverb is saying. That proverb means that a person should not be concerned with mistakes that he has made in the past. Now, I think you should have the idea, so here are some more proverbs or sayings.

I want you to give me the meaning or idea behind these proverbs or sayings."

With the presentation of the written or oral proverb sets in the first session, the appropriate written or oral instructions (following the above initial statement of the definition of a proverb) continued as follows:
(present you some proverbs) (I will be presenting you)

"Now I'm going to show you some cards. On each of them are

three proverbs or sayings which all have the same meaning or idea
behind them. I want you to give me the one meaning behind the three
proverbs. Let's try some and see if you can figure out the one
meaning behind the three sayings. 'Where there's a will, there's
a way.' He who is firm in will molds the world to himself. The man
who has the will to undergo all labor may win any goal.' Now let
me tell you what the one meaning in all of these proverbs is. These
three proverbs mean that a person can do almost anything in life if
he has the determination to stick to the task. Let's try another.

'A stream cannot rise higher than its source. You can't make a silk
purse out of a sow's ear. Copper, no matter how hard you shine it,
cannot become gold.' Now, let me tell you what the one meaning in
all of these proverbs is. These three proverbs mean that a person
can do no more than his natural ability will allow him to. Do you
get the idea? Okay, let's do some more."

The second experimental session was introduced in the following manner:
"Today we are going to work with some more proverbs."

The tape recorded or written description of a proverb and the subsequent instructions, as well as the appropriate proverb condition, was then presented. The order of the presentation of the two proverb tasks, for both the oral and written conditions, were counterbalanced.

**Scoring**

Each response to the proverb (s) on the part of the subject was recorded verbatim by the experimenter. The responses were then scored by means of a scale developed by Kaufman (1960). Under this system each response could be rated on a scale of one to six, depending on the degree and accuracy of abstraction. Therefore, the highest score which a subject could achieve was 102, and the lowest was 17.

As a result of difficulty in evaluating proverb sets, Blauffarb (1962) devised and made use of a minor extension of the scoring outline provided by Kaufman (1960). This extension of the scoring criteria was also used in a subsequent study which used the same task material (Harlin et al., 1965). In the current study, therefore, both the original scoring outline, as well as Blauffarb's extension of it, were used.

Prior to employing the above scoring criteria, the present author undertook an attempt to increase its objectivity. One-half of the completed task sheets containing the subjects' verbatim responses were randomly selected. Proceeding by evaluating all of the subjects' responses to the second, and so on, the author - by adding these newly scored responses to the original scoring outline - was able to increase the detail, and hence, the discriminative ability of the scoring key. With this expanded form (Appendix A)
of the original scoring criteria, the author then proceeded to score all of the verbatim protocols of the sixty subjects included in this study.

In evaluating the reliability of this scoring procedure, Blaufarb found the inter-rater reliability to be .89 (1962, 473). To arrive at a measure of reliability in the current study, one-fourth of the subjects of each group were randomly selected and their responses were independently rated by another judge. A correlation of the ratings made by the author and the independent judge (r=.97) indicated that their agreement was highly significant.
Results

The analysis of variance test used assumes that the variance within the several groups do not differ significantly. Lindquist (1956, 83) notes that marked heterogeneity of variance has a small but real effect on the form of the F distribution. Thus, the Cochran Test, which Winer (1962, 94) suggests is generally somewhat more sensitive than other tests, was employed in a simple test of homogeneity of variance. All scores were included in the 24 subgroups examined. The variances of these subgroup scores for each of the combinations of subject group, modality of presentation, and level of structure given were compared. As suggested by Cochran, therefore, a division of the largest by the sum of the variance yielded a finding of .13, which failed to meet significance at even the .05 level. Homogeneity of variance was thus assumed to exist (Table 3.). Since the existence of both homogeneity of variance and adequate matching were satisfactorily verified, it may be concluded that any results obtained in the analysis of variance of the data can be attributed almost exclusively to the effects of the imposed experimental conditions.

The analysis of variance for performance on the proverb test is presented in Table 4. Prior to the discussion of the results of the hypotheses specifically posed for this study, it should be noted further that neither the main effect of the analysis of variance for order of presentation of the proverb conditions, nor the interaction of order of presentation with any of the other variables included in this study, approached a level of significance. Hence, since the results of the analysis of variance for proverb scores may be viewed as being essentially free of order of presentation effects, the findings may be safely and directly attributed to the specific variables under consideration.
Table 3.
Means, Standard Deviations, and Variances for Proverb Scores.

<table>
<thead>
<tr>
<th>Order of Presentation</th>
<th>Written</th>
<th>Oral</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
</tr>
<tr>
<td><strong>Normals</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single/Set (Single)</td>
<td>80.2</td>
<td>6.16</td>
</tr>
<tr>
<td>(Set)</td>
<td>78.8</td>
<td>4.79</td>
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<tr>
<td>Set/Single (Single)</td>
<td>75.8</td>
<td>6.07</td>
</tr>
<tr>
<td>(Set)</td>
<td>76.0</td>
<td>5.05</td>
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<tr>
<td><strong>Good Proverbials</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single/Set (Single)</td>
<td>62.4</td>
<td>15.73</td>
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<tr>
<td>(Set)</td>
<td>73.4</td>
<td>13.74</td>
</tr>
<tr>
<td>Set/Single (Single)</td>
<td>63.0</td>
<td>10.27</td>
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<tr>
<td>(Set)</td>
<td>74.6</td>
<td>6.97</td>
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<td><strong>Poor Proverbials</strong></td>
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<td>Single/Set (Single)</td>
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<tr>
<td>(Set)</td>
<td>42.8</td>
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<tr>
<td>Set/Single (Single)</td>
<td>44.6</td>
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</tr>
<tr>
<td>(Set)</td>
<td>50.6</td>
<td>11.03</td>
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Table 4.
Analysis of Variance for Proverb Scores.

<table>
<thead>
<tr>
<th>Source</th>
<th>d.f.</th>
<th>S.S.</th>
<th>M.S.</th>
<th>F</th>
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<tr>
<td>Total</td>
<td>119</td>
<td>31469.34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between</td>
<td>59</td>
<td>29158.84</td>
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<tr>
<td>G (Groups)</td>
<td>2</td>
<td>20518.55</td>
<td>10259.27</td>
<td>63.67***</td>
</tr>
<tr>
<td>M (Modality)</td>
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<td>350.21</td>
<td>350.21</td>
<td>2.17</td>
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<tr>
<td>C (Counterbalanced Order of Presentation)</td>
<td>1</td>
<td>18.41</td>
<td>18.41</td>
<td>.11</td>
</tr>
<tr>
<td>G×M</td>
<td>2</td>
<td>125.62</td>
<td>62.81</td>
<td>.39</td>
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<tr>
<td>G×C</td>
<td>2</td>
<td>138.12</td>
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<td>.43</td>
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<td>.21</td>
<td>.21</td>
<td>.00</td>
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<td>G×M×C</td>
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<td>.85</td>
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<td>S/G×M×C</td>
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<tr>
<td>Within</td>
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<tr>
<td>P (Proverb Condition)</td>
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<td>310.41</td>
<td>310.41</td>
<td>9.97***</td>
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<td>184.22</td>
<td>92.11</td>
<td>2.96**</td>
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<td>134.41</td>
<td>4.32***</td>
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<td>.06</td>
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<tr>
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<td>.12</td>
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<tr>
<td>P×G×M×C</td>
<td>1</td>
<td>5.85</td>
<td>2.92</td>
<td>.09</td>
</tr>
<tr>
<td>S×P/G×M×C</td>
<td>48</td>
<td>1495.00</td>
<td>31.14</td>
<td></td>
</tr>
</tbody>
</table>

*** p < .001
**  p < .01
*   p < .05
The first hypothesis was supported by the results of the analysis of variance for the data (Figure 1.). There was a significant difference at the .001 level (Table 4) between groups (Normals, good premorbid, and poor premorbid), in the predicted directions on proverb task. Duncan Range tests (Edwards, 1960) indicated that on proverb scores, the normal group was found to be significantly different (at the .001 level) from both the poor premorbid and good premorbid schizophrenic groups. The good premorbid were also found to be significantly different from the poor premorbid schizophrenics at the .05 level.

The findings relating to the second hypothesis indicate a strong trend in favor of its support (Figure 2.). The interaction hypothesized was expected to be the result of a change in performance by only one of the six groups; that is, the good premorbid under the written condition (Table 5). Hence, the finding that the F ratio of 2.77 exceeds the .075 level of significance (Table 4.) is seen by the author, therefore, as supporting a general trend in favor of this hypothesis.

Since hypothesis three (A) and (B), as well as hypothesis four, were initially phrased as derivative explanations of the strong trend noted in hypothesis two; it follows statistically (Myers, 1966) that the more detailed effects posed by hypotheses three and four may only be viewed as to whether or not they provide evidence for trends in the direction of significance.

Hypothesis three (A) suggests a strong trend in favor of its support (Figure 3.). While recognizing that an extended analysis of the effects involved in a finding which is only manifested as a strong trend is somewhat speculative, a Duncan Range test of the three groups under the written
Table 5.

The Mean Performance of Normals, Good Premorbids, and Poor Premorbids on the Single and Set Conditions, Under the Written or Oral Modalities of Presentation.

<table>
<thead>
<tr>
<th>Groups</th>
<th>Modality of Presentation</th>
<th>Proverb Task</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Single</td>
</tr>
<tr>
<td>Normals</td>
<td>Written</td>
<td>78.0&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Oral</td>
<td>73.1</td>
</tr>
<tr>
<td>Good Premorbids</td>
<td>Written</td>
<td>62.7</td>
</tr>
<tr>
<td></td>
<td>Oral</td>
<td>67.3</td>
</tr>
<tr>
<td>Poor Premorbids</td>
<td>Written</td>
<td>44.9</td>
</tr>
<tr>
<td></td>
<td>Oral</td>
<td>41.3</td>
</tr>
</tbody>
</table>

a. Mean scores of subjects' performances on the single proverbs.

b. Mean scores of subjects' performances on the set proverbs.
condition of presentation was undertaken (Table 6). The results indicated that the mean difference of the good premorbid on the proverb task was significant at the .001 level. The mean difference in performance by the normals (.6), however, was found to be short of the mean cut off (3.94) at the .10 level of significance. Hence the data tends to support the contention that the good premorbid shows greater improvement than the normals under the written condition of presentation.

In extending our consideration of hypothesis three (A), the implications of several other findings provide further support for this strong trend. Firstly, Figure 1. suggests that the significant increase in performance on the proverb task (.001) when all subjects are combined (Table 4.) can be essentially attributed to the marked change by certain schizophrenic groups. Secondly, in comparing Figure 1. and Figure 2., it can also be seen that the modality of presentation further delineates those schizophrenic groups which evidenced the strongest change in performance. Specifically, Figure 2. suggests that although both the good and poor premorbid schizophrenics under the written condition appear to have contributed to the F ratio of 2.96 for the groups by proverbs interaction (.065), the good premorbid themselves appear to evidence the most marked improvement of all the groups considered (Table 4.). Finally, having already noted the differing effects of task performance in accordance with the modality of presentation, the strong trend found between groups and proverb conditions tends to further buttress the contention that certain groups under the written modality of presentation have achieved the greatest improvement in performance. In relation to the above, therefore, it was not surprising to find that the Duncan Range test of the 3 groups under the written condition of presentation (Table 6) provided support
Table 6.

Duncan Range Comparisons of the Performance of Normals, Good Premorbid, and Poor Premorbid, when given the Written or Oral Presentation of the Proverb Task.

<table>
<thead>
<tr>
<th></th>
<th>Poor Premorbid</th>
<th>Good Premorbid</th>
<th>Normal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single Set</td>
<td>Single Set</td>
<td>Single Set</td>
</tr>
<tr>
<td>Proverb Scores Under the Written Presentation</td>
<td>54.9 55.2*</td>
<td>62.7 74.0**</td>
<td>78.0 77.4b</td>
</tr>
<tr>
<td>Proverb Scores Under the Oral Presentation</td>
<td>41.3 43.0</td>
<td>67.3 63.2</td>
<td>73.1 73.8b</td>
</tr>
</tbody>
</table>

a. Duncan's New Multiple Range Test applied to the differences between means; k=6. (From Edwards, 1960, pp. 136-140).

b. Treatment means underlined are significantly different. Treatment means not underlined by the same line are not significantly different. (Since the Duncan multiple Range Comparisons presented are subanalyses of overall findings which were only found to be indicative of strong trends, it should be noted that the actual significance level values of the above data are only provided here as indicators of those effects which appear to have had an influence on the outcome of the basic trends under consideration.)

* p .01
** p .001

* The mean differences for the normals (.7), good premorbid (.9), and poor premorbid (1.7), all fall short of the mean cut off range of 3.46 - 3.94 at the .10 level.
Figure 1. Performance of Experimental Groups on the Proverb Measure
Figure 2. Performance of Groups Under Different Modalities and Different Levels of Proverb Presentation.
for the strong trend which was found for hypothesis three (A).

In line with the present study's attempt to do a partial replication of the findings of Blaufarb (1962), an analysis of variance similar to the one used by Blaufarb was undertaken for the data involved in hypothesis three (A). Similar to Blaufarb's comparative findings with his schizophrenic and normal subjects (Appendix B.), the current re-analysis of the normals and good premorbids under the written condition of presentation in the present study indicated that the mean improvement of the good premorbids from single (62.7) to set (74.0) proverbs was not only significant (.001), but the schizophrenics' performance evidenced a greater improvement than the mean performance of the normals under the written single (72.0) and set (77.4) proverb conditions. Hence, although this re-analysis of the present data is post facto in nature, it seems to add further support to Blaufarb's claim that increased structure not only results in significant improvement by schizophrenics, but that increased structure enables schizophrenics to achieve a level of improvement which surpasses the degree of improvement made by normals.

In regard to the two findings posited in hypothesis three (B), only one was found to reflect a trend in the expected direction (Figure 3.). While aware, as before, of the speculative nature of the results found for this hypothesis, a Duncans Range test (Table 6.) indicated that the normals did not evidence any significant change. In fact, the mean difference in performance by the normals (.6) was found to be short of the mean cut off (3.94) at the .10 level of significance. In regard to the poor premorbids, however, their performance suggests a trend toward
Figure 3. Performance of Normal Subjects and Good and Poor Premorbid Schizophrenics, under the Written Presentation of the Proverb Task.
significant improvement since the mean difference in their performance was found to be significant at the .01 level (Table 6.).

The results suggest a strong trend in support of hypothesis four (Figure 4.). With the continuing recognition of the speculative nature of extended analyses of a finding which only provides evidence of a trend, some further tests were undertaken. A t-test of the mean of the combined scores on the orally presented single proverb condition (60.57), and the mean of the combined scores on the orally presented set proverb condition (61.67), did not reach significance at the .10 level. A Duncan Range test of the performance for each group on the orally presented proverb task indicated that the mean differences for the normals (.7), the good premorbid (.9), and the poor premorbid (1.7), all fall short of the mean cut off range of 3.46-3.94 at the .10 level of significance (Table 6.). Hence, these extended analyses tend to provide some tentative support for this fourth hypothesis; that is, none of the experimental groups under the oral presentation were found to manifest a significant degree of improvement on the proverb task.
Figure 4. Performance of Normal Subjects and Good and Poor Premorbid Schizophrenics, under the Oral Presentation of the Proverb Task.
Discussion

Hypothesis One

The first hypothesis was supported by the results and indicates that schizophrenic subjects are not as competent on the proverb task as normal subjects. An extended analysis of the data further indicated that the differing performances of each group resulted in a significant hierarchy of performance with the normals surpassing the good premorbid, who in turn manifested significantly better performance than the poor premorbid.

One possible explanation of this finding has been to attribute the lowered performance of schizophrenics when compared to normals, as resulting from their limited ability to function abstractly on conceptual tasks (Goldsteing & Scheerer, 1941; Haufmann & Kassanin, 1942). Since this theoretical viewpoint has received relatively limited support (Fey, 1951; Lothrop, 1960; Buss and Lang, 1965), Lothrop's view (1961) that other factors may be involved leads us to pursue a more recent theoretical stance.

Specifically, the superior performance of the normals when compared to the schizophrenics might be explained as resulting from a disruption in the focusing mechanism of the schizophrenics' attention processes (Weckovich & Elowett, 1959; Shakow, 1962; Venables, 1963; Payne, 1961). Similarly, Freeman et al. (1965) regard the schizophrenic's defective performance on abstraction tasks as resulting from the permeability of his counter cathetic barriers. Hence, due to their decreased ego organization, the schizophrenics' lowered performances on the proverb task may be seen as resulting from the withdrawal of attention, and thus, the lessening of their ability to select out and respond to the ideational content involved in the proverb task material.
In line with this view, Silverman (1964) also notes that the extent to which the schizophrenic defensively gates out relevant cues, thus decreasing his ability to attend, is apparently dependent on his premorbid history. There is an apparent direct relationship between the level of the schizophrenic's premorbid adjustment and his capacity to attend and thus perform effectively on an abstracting task. It would seem to follow, therefore, that the significant hierarchical performance of the normals, good premorbid, and poor premorbid groups found for hypothesis one indicates that the schizophrenic groups were not only unable to attend as effectively as their normal counterparts, but that the increasing severity of schizophrenic premorbid adjustment resulted in a decreased ability to attend - as evidenced by the lower performance of the poor premorbid groups when compared with the good premorbid schizophrenics.

**Hypothesis Two**

The second hypothesis was not supported by the results; the overall interaction effect between experimental groups, levels of structure, and modalities of presentation was not found to reach significance. However, there was a trend at the .075 level.

When the conceptual underpinnings of this overall interaction are reviewed, it becomes relatively obvious that the author's expectations were overly optimistic. Since only one of the six groups (i.e., the good premorbid under the written condition) was expected to evidence significant improvement, the significance of this second hypothesis was therefore not only directly dependent on a change in performance by this good premorbid group, but it was also implicitly dependent on a lack of change by the remaining five groups as well. Although it was found that the good
premorbid group under the written condition did manifest a marked improvement in performance, it is felt that the unexpected yet very sizable increase by the poor premorbid schizophrenics under the written condition, as well as the limited increases by the subject groups under the oral condition, tended to detract from the interaction effect.

A possible explanation for the unexpected increase of the poor premorbid under the written condition can be found by considering the pre-selection and matching procedures. Due to the general scarcity of good premorbid schizophrenics, the author found it necessary to include every good premorbid that fit the criteria as dictated by the Phillips scale (1953). While selecting these subjects, the author tabulated their mean vocabulary and educational levels and used them as a guide line for matching the other groups which were also being selected. Since the selection of the good premorbid happened to result in a subject group whose mean level on education and vocabulary was higher than those reported by earlier similar studies (Blaufarb, 1962; Hamlin et al., 1965), the poor premorbid and normals - who were matched according to the means of the good premorbid - were also somewhat higher. Since Hamlin et al. (1965, 391) have noted that vocabulary scores typically increase as schizophrenic pathology becomes less severe, it would appear that the higher vocabulary scores provided by the poor premorbid group is indicative of the decreased severity of their impairment. Therefore, recognizing the fact that educational and intellectual information provides a meaningful, although crude, barometer of ego intactness, and hence conceptual functioning, it appears that the inadvertent biasing of our matching procedure in the positive direction resulted in the selection of a poor premorbid group whose capacity to
attend to the structured task material was superior to what was initially expected.

A second factor which is interrelated to the positive bias mentioned above, also appears to be part of the reason for the poor premorbid's unexpected improvement under the written condition. It appears that the matching process resulted in the selection of a less impaired poor premorbid group, since their rankings on the Phillips scale suggest that their premorbid adjustment level was less severe than initially expected. Recognizing that the range provided for the ranking of poor premorbid was between eighteen and thirty, the average poor premorbid ranking in the current study (22) tends to indicate, therefore, that this group should be regarded as 'less poor' than the hypothetical average.

Returning to Silverman's findings (1964), he noted that those schizophrenics whose premorbid histories were less severe were better able to gate out irrelevant cues and increase their ability to attend. Similarly, Hamlin et al. (1965) noted that although "severe" schizophrenics were unable to benefit from the enrichment of the written proverb sets, those schizophrenics with only "mild" and/or "medium" amounts of pathology were able to evidence significant improvement. Hence, since it appears that the poor premorbid schizophrenics used in the present study were in actuality 'less poor' than initially assumed, they were, therefore, capable of effectively attending to, and thus improving on, the task material presented them.

Since, as we have noted earlier, all schizophrenic groups evidenced some improvement, it might initially appear that verbal enrichment should be generally regarded as beneficial. Under closer consideration, however,
the sizable increases in performance by the good and poor premorbid under the written condition are in direct contrast to the miniscule improvement evidenced by the good and poor premorbid under the oral condition. The finding of a strong trend toward non-significant improvement for both the good and poor premorbid schizophrenics receiving the oral presentation (see hypothesis four) suggests that only those schizophrenics who receive enrichment in the written modality are truly able to make use of the added structure (see hypothesis three).

Furthermore, in turning to the specific effects of the written presentation when it is presented to schizophrenics who evidence differing levels of premorbid adjustment, there is evidence of varying degrees of improvement. That is, the good premorbid under the written condition were able to manifest a larger degree of improvement than the poor premorbid under the written condition.

Yet, even though the increase in performance by the good premorbid under the written condition was the largest of all the groups, the unexpected improvement by the poor premorbid under the written condition — in combination with the minimal increases by the subject groups under the oral condition — is seen as the reason why this overall interaction effect was somewhat neutralized, and hence, fell short of significance.

A closing note should also be made regarding the influential effects of hypothesis two. Since the overall interaction involved in this hypothesis did not reach significance, the forthcoming discussion of the results of hypothesis three (A) and (B), and hypothesis four (all of which are based on the simple effects of the interaction just considered), may only be regarded, therefore, as being suggestive of strong trends at best.
Hypothesis Three (A)

Hypothesis three (A) was not supported by the results. Although this hypothesis - that good premorbidss will show improvement as well as a greater improvement when compared to the normals - is a simple effect of the overall interaction discussed in hypothesis two, the data suggests, none the less, that hypothesis three (A) does provide evidence of a strong trend in the appropriate direction.

While recognizing that an extended analysis of a supportive trend is questionable, this type of analysis resulted in the highly significant finding that the good premorbidss showed greater improvement than the normals under the written condition of presentation - a finding which provided some added although tentative support for the strength of this current hypothesis. Further, references to earlier graphs (such as number 3) also tended to suggest that the good premorbidss evidenced the greatest degree of improvement on the proverb task under the written condition.

Since hypothesis three (A) was viewed by the author as an attempt to partially replicate an earlier finding, a post facto analysis similar to that used in an earlier study, tends to suggest that added structure - when presented in the written modality - does assist the attention processes of the good premorbidss, and thus, their ability to perform on the proverb task.  

Hypothesis Three (B)

The first part of hypothesis three (B) was not supported by the results. While the expectation that normals would show no improvement between the written single and set proverb conditions was not found to be significant, there was evidence of a strong trend in the appropriate direction. Aware
of the speculative nature of an extended analysis of this data, it is, none
the less, useful to note that the results of a Duncan's Range test does
provide added support for this hypothesis. Furthermore, a consideration of
the small (as well as decreasing) mean performance difference between written
single and set proverb conditions for the normals, also strongly supports the trend
found for this hypothesis.

The trend found for this section of hypothesis three (B) appears to
concur, therefore, with the view that the typical performance of normals -
on material which contains the core or essential cues necessary for an
effective response (i.e., single proverb) - is not enhanced by providing
additional redundant cues. That is, the apparent 'ceiling effect' evidenced
by the present study's normal group, as well as the control groups used in
earlier studies (Elaufarab, 1962; Hanlin et al., 1965) suggests that normals -
already possessing well-developed ego functions - are able to attend equally
effectively to either structured or less structured material.

The second part of hypothesis three (B) was not supported by the results.
Although it was expected that the poor premorbid schizophrenics would show
no improvement between the written single and set proverb conditions, the
evidence tends to suggest, in fact, a reversed trend toward significant im-
provement.

The apparent explanation for this finding, as noted earlier, is the fact
that a positively biased selection procedure resulted in a poor premorbid
group which was less severely impaired intellectually, as well as 'less
poor' according to the Phillips scale of measurement. Confluent with this
re-appraisal of the actual premorbid adjustment level of the current poor
premorbid group is Silverman's (1964) view that there is an apparent inverse relationship between the severity of premorbid adjustment and the schizophrenic's ability to deal effectively with the conceptual material presented him. Recognizing this, the performance of the poor premorbid can, therefore, be seen in a different light. That is, since this group was 'less poor' and thus their attention processes were better developed than expected, they were not only able to benefit from the structured task material, but were able to manifest improvement in performance.

**Hypothesis Four**

The fourth hypothesis, that all three groups under the oral condition of presentation would show no improvement on the proverb task, was not supported by the data. However, there was evidence of a strong trend in the expected direction. In referring tentatively to the extended analysis of the data involved in this hypothesis, the Duncan Range test of mean differences suggests that all three of the groups fall short of evidencing any significant degree of improvement.

This trend conforms with earlier findings that increased structure in the context of an orally presented task does not assist the schizophrenic markedly in his performance. Specifically, Layson et al, (1964) noted that the schizophrenic patients in their study "showed a relative inability to take advantage of the increasing levels of organization in the series of (oral) passages presented (p.378)." In regard to the lack of significant improvement by the normal group, since their ability to attend was apparently unimpaired, their performance suggests that they were able to function equally well under both structured and less structured conditions.
The purpose of this study was to investigate verbal concept performance of good premorbid schizophrenics, and normals, when oral and written conditions of enriched verbal material were introduced. The verbal task - provided by Blaufarb (1962) - consisted of 17 single, as well as 17 equated sets, of proverbs.

Sixty subjects in three groups (good premorbid schizophrenics, poor premorbid schizophrenics, and normal subjects) were matched on age, education, intelligence, and socio-economic status. Each of these subject groups were divided evenly into oral and written presentation groups. The experimental sessions were counterbalanced. Half of the subjects in either the oral or written condition of presentation were given the 17 single proverbs first, and the other half were given the proverb sets first. All of the subjects were tested individually. Following each of the proverb presentations, the subjects' verbatim responses were written down by the experimenter.

From the writings of Freeman, Cameron, and McGhee (1965), it was expected that schizophrenics when compared to normals would show a greater deficit in verbal concept performance. Specifically, although each schizophrenic group was expected to evidence poorer performance than the normals under the written condition, the good premorbid groups were expected to evidence a deficit in performance when compared to the normals, but an inability to improve their performance under the enrichment condition.

The results indicate that schizophrenics are not as competent on verbal concept (proverbs) performances as normals. Specifically, it was found that the differing performances of each group resulted in a significant hierarchy.
with the normals surpassing the good premorbid, who in turn, manifested significantly better performance than the poor premorbid.

The findings showed no significant overall interaction effect between experimental groups, levels of structure, and modalities of presentation. There was, however, a strong tendency in the expected direction. As this was only a strong trend, any conclusions about schizophrenics' performances under differing modalities of presentation must be viewed with caution.

The results did not support the expectation that good premorbid under the written condition will show improvement and that this improvement will be greater than that shown by the normals. None the less, a strong trend in the appropriate direction was found. Furthermore, a post facto analysis similar to the one employed by Blaufarb (1962), provided added support for this trend.

The data did not support the expectation that normals and poor premorbid schizophrenics would show no improvement between the written single and set proverb conditions. While the findings suggest a strong trend in the expected direction for the normals, the poor premorbid's performance indicated a reversed trend toward significant improvement.

The expectation that all three experimental groups under the oral condition of presentation would show no improvement on the proverb task was not supported by the data. Yet, there was evidence of a strong trend in the expected direction.

The results of this study were discussed in relation to a theory of attention. Viewing schizophrenics as suffering from a breakdown in the filtering function of the attention processes, the strong trends suggested by the data in this study were seen as providing tentative support for this theoretical stance.
REFERENCES


35. Lothrop, W. Psychological test covariates of conceptual deficit in schizophrenia. J. Consult. Psychol., 1960, 24, 496-499.


53. Wegrocki, H. Generalizing ability in schizophrenia. Arch. Psychol. No. 254, 1940

Appendix A

SCORING CRITERIA FOR THE PROVERB TEST

Development and Reliability of the Scoring Procedure

The following scoring system is an extension of the criteria developed by Kaufman (1960), which was later used by Blaufarb (1962), as well as Hulin et al. (1965). Consonant with Blaufarb's work, the present author also attempted to further objectify the scoring criteria.

Thirty of the sixty completed task forms of the subjects used in this study were randomly selected. Proceeding by evaluating all of the subjects' verbatim responses to the first of the 17 proverbs, then evaluating all of the subjects' responses to the second, and so on, the author - by adding these newly scored responses to the original scoring outline - was able to increase the detail, and hence, the discriminative ability of this scoring key.

In evaluating the reliability of this scoring procedure, Blaufarb found the inter-rater reliability to be .89 (1962, 473). To arrive at a measure of the reliability of the revised scoring procedure, one-fourth of the subjects of each group included in the present study were randomly selected and their responses were independently rated by another judge. A correlation of the ratings made by the author and the independent judge (r=.97) indicated that their agreement was highly significant.

General Scoring Standards

The following are the standards which are provided as a general guideline for the scoring of each of the subject's responses to the single and/or set proverbs.

Score 6 (Abstract III)

A correct generalized interpretation with reference to human behavior without detracting elements.

Score 5 (Abstract II)

(a) A correct example with reference to human behavior.
(b) Another proverb meaning the same thing. (NOTE: Under first session, single-proverb presentation, give a score of 5 if the subject gives one of the other proverbs from the set, but under the second session, single presentation, score the response 2 if the subject gives one of the other proverbs from the set.)
(c) A response partly generalized, partly restricted to a specific example
(lover level of generalization).
(d) A correct response using 2 or more words of the proverb.  (Note: if
only one word of the proverb is used, it may be scored 6.)

Score 4 (Abstract I)

(a) A response tinged with the literal.
(b) A response which would be acceptable at score 5 but for some minor in-
accuracy, overstatement, or alternative explanation which is false.

Score 3 (Vague Response)

(a) An attempt at interpretation which is on the right track, but is left
too vague or open-ended to be adequate; or fails to account for part
of the proverb.

Score 2 (False Interpretation, General Literal, and Literal)

(a) The interpretation is very inaccurate, yet an attempt was made to
interpret. The error is usually due to faulty generalization.
(b) The interpretation is literal in effect, though stated in general
terms. At first glance these responses do not appear to be literal,
but they can only be understood as stemming from a literal interpretation.
(c) The proverb is simply explained in literal terms.

Score 1 (Absurd)

(a) The response indicates a failure to interpret and/or is logically
absurd in terms of the task at hand. These responses are usually
based on concrete associations to some aspect of the stimulus -
but need not be.

Variable Scoring (Literal-Abstract Responses)

A response which gives both a literal and an abstract interpretation.
The tendency to be drawn into a literal interpretation is strong,
but the subject is able to counteract it. (WEIGHT AT THE BEST ABSTRACT
LEVEL REACHED.)
References:


PROVERB SET – NUMBER ONE

A wheel is no stronger than its weakest spoke. *
The rope breaks where it is the thinnest.
A chain is only as strong as its weakest link.

* The proverb used for the single proverb presentation.

Generally Perfect Answer (Score 6): A group, organization, or person can be no more effective than its most ineffectual member, or in the case of an individual, his greatest deficiency.

Score 6
An organization is just as strong as the parts that make it up...Any combination of things has no more strength than its weakest part...

Endurance of anything is no stronger than the weakest part of it...A person is only as strong as his weakest point.

Score 5
You are no stronger than your weakest fault... Your mind is only as strong as its weakest fault...A person is no stronger than his moral fiber...You are only as strong as your natural ability...A person is only as strong as he wants to be...You can only succeed as far as you are willing to try.

Score 4
If you build something and the foundation is weak, it will cave in...A person is no worse than his worst habit...A mechanism is no stronger than its poorest ability...A strong person has a weak spot.
Score 3

The moral fiber of a person, he's as strong as that... The company with one bad worker can spoil... If you have weaknesses, you give in and have a breakdown... Anything is no stronger than its weakest part... The strength of a person - weak at points... You are capable of doing only what you can... A fault is bound to show up eventually.

Score 2

If you try to do something, you can only do it if you are capable of it... A wheel will cave in at its weakest point... Telling me the strength... Like a person being strong and still feeling weak... If not strong, then weak in parts... Without the spokes, the wheel would break... There is a breaking point for ideas and objects, don't overrely them... The weakest point is the maximum of the wheel, for if surpassed, it will break.

Score 1

A car wheel... It runs... Do what you are told to do and no more... If a spoke is broken it will probably cave in... Children are what they are wanted to be... A person should not take to task simple politics.

PROVERB SET # NUMBER TWO

Close only counts in horseshoes.  
A miss is as good as a mile.*  
A golfball on the edge of the hole still needs another stroke.

General Perfect Answer (Score 6): A person may be very near to the correct solution of a problem, but he may just as well arrive at a totally incorrect solution, for both solutions are incorrect.

Score 6

Even if you are close to hitting what you're after, it doesn't make much difference how close you came... If you miss solving the problem by a little or a lot, it's all the same... You either win or lose; coming close to completing something doesn't matter.

Score 5

Not attaining a goal by a little is just as bad as completely failing to attain the goal... A failure is just as costly as coming close... A close miss is the same as missing it entirely... If you miss by a little or a lot, it doesn't matter, you missed all the same.
It is no good if it is short of the goal...In success in life, you can come very close and still not succeed...If you miss an appointment by five minutes, it's no different than missing it by an hour...No matter how close you come to succeeding, it isn't quite enough...You lose, whether you lose by a point or a hundred points.

When you almost do something, it's worthless...You have to complete something to have it count... You must do it right or not at all...A task must be finished to be worthwhile...If you say you almost got there, it doesn't matter, because if you miss, you miss...If you didn't get it, you didn't...If you don't hit, it's no good.

Not to be sure is not good enough...Closeness or something...Closeness counts...Give a person another chance...If you have a close accident and he puts on his brakes before he hits you...If you are trying for something, keep going till you get it...If you are not going to go all the way, don't start...If at first you don't succeed, try again...Do things to completion...A mistake is not something to worry about...It's easy to make a mistake...If you are wrong, it should be corrected...Don't give up until you are finished...If you miss the first time, try the second.

He lost by inches...Try again...Don't worry over the sleeping tablets...If you are late...Make an effort or make a try...You have to push for what you want...To no avail.

**Proverb Set # NUMBER THREE**

The cracked jug of someone else seems better to you than your sound one. Another person's silver dollar is always shinier than your own. The grass is always greener in the other fellow's yard.

Generally Perfect Answer (Score 6): Another's possessions, position, etc., often appear more attractive or better to a person than what he himself possesses.

What another person has will seem better than what you have got...Another's possessions seem better than yours...Looking at another person, looking at what he has or does seems better than what I have or do...Things that other people have look better than our own...Opportunities look better when they belong to somebody else...Many people have an illusion that the other fellow is better off than he...No matter how much a person attains in life, other people's possessions look better...Something which someone else has appears to be better than what you have - it's only an illusion.
Score 5
(When the response relates to concepts of size or quantity such as "Opportunity always seems greater at a distance;" or when the response is a specific example such as "He always envy the things the other guy has.")

Envying, has to do with your neighbors' things and thinking he has more than you have...Other peoples' accomplishments always look greater...No matter what you've got, you still feel a little envious of what the other person has.

Score 4
(When the response relates to concepts of space or distance such as "Something far away always looks more appealing than when you got up to it.")

Things always look better in someone else's pocket...It seems that the other guy has more than I have...Our goal is never satisfied, we always seem to want to achieve more and more - regardless of what we have...One should not count his next door neighbor's goods...Things always look better from the other side...You don't appreciate what you have...Things seem better (finer) on the other side of the fence...It seems like other things often look better to us then what we have with us...Do not covet other's possessions because yours are almost as good.

Score 3
(Responses which refer to things seeming to be vaguely better such as "Always looking at someone else's things rather than your own;" or responses which state that other things are better such as, "His things are better") Someone else's property is better...Don't try to keep up with the Joneses...If there are job opportunities in an adjoining state and few in yours, then you go to the other place and get work...Don't be a follower and don't be envious of other people...A person is always unsatisfied with himself...I'm always searching for things he can't reach...Things look better from one point of view or the other...Sometimes we would like to have something that belongs to somebody else...Someone else may be a little better than you are...Other circumstances seem better than present circumstances.

Score 2
The other guy's grass is better...It's saying a good word for the other fellas...We are living in a competitive world...We seem not to notice other's difficulties very easily...A bird in the hand is worth two in the bush...Things aren't as rosy for the other guy as I might think...Things look better, so go over there and you'll find weeds...You get so used to looking at your own yard, that it doesn't look good...You shouldn't brood, but count your blessings.

Score 1
Things differ...Why not water grass if it gets brown...
PRCVERB SET # NUMBER FOUR

Shallow brooks are noisy.**
A gust of wind from an empty tunnel makes the most noise.
Empty barrels make the most noise.

Generally Perfect Answer: (Score 6): A person who is not sincere, or who has no depth of character is often garrulous and/or meaningless in his conversation.

Score 6
(Responses referring to quality of character)
A person of no real quality is often noisy...A noisy person is usually a person without depth of character...A foolish person makes a lot of chatter...Refers to people, that is, a person with a dull mind will babble the most.

Score 5
(Responses dealing with amount of knowledge)
If a person doesn't have full knowledge of something, he may do the loudest or most objecting things...A person of small ability is usually the noisiest...A person who doesn't know anything makes the most noise; a wise man holds his tongue...Someone who talks through his hat; says a lot of words but they don't really mean anything...A guy who doesn't have much inside is the loudest.

Score 4
(Responses using size and shape concepts)
Small minds are talkative...Narrow minds talk the most...A little guy makes the most noise...Something small a lot of times makes a lot of noise...You can give a lot of advice, talk, put on an act of intelligence, but you may be doing nothing but acting - making noise...A quiet person is a deep thinker...Things aren't always what they seem to be from the outside as they are on the inside...If a person is an empty person, then he has empty ideas and makes the most noise...People who make a lot of noise verbally, generally are not very complicated people...Somebody who does a lot of talking, a lot of words...The shallowness of peoples' minds, they are noisy...People who don't think usually talk a lot...People who talk the most usually don't know the most.

Score 3
Some people talk too much...A person who is loud or boastful has nothing behind it...Watch out for the quiet ones, they are the ones when cornered who make the most noise...Has to do with being loud and bragging...It's about being boastful; like if you got something and you brag about it...Don't overestimate yourself and don't be a pretender...Silence is golden...A big noise from a little place...Emptiness means loneliness...Little things always make big noises...Often those who have plenty cry for more...What they say is hollow; they don't have the currency to back up the project.
Score 2
A little water running is more noisy than a lot - rocks make noise...Superficial reasoning about a problem is ineffective...A shallow brook is not deep - ripples and makes a noise...Shallow brooks are noisy because of the water on the stones...That tells me what's the noisiest...Small sounds are noisy...The little ripple makes a big noise. Shallow or still water runs deep...Loud people are noisy...They are noisy during their flood stage...Some people are quiet and some people make a lot of noise...Fear excites noise in a person...Deep water is silent...Don't be a loudmouth.

Score 1
Accept children; they are only acting their age...Keep a sound mind and keep clear ideas...Everything isn't as rosy as you think it is...The reason is like walking on thin ice; you've got to be cautious...Be cautious because there is a block in your way...Material is cheapest that has no meaning...Molecular motion.

PROVERB SET # NUMBER FIVE

The hawks will eat the one who makes himself a dove...
He who makes himself dirt is stepped-on by the pigs.
He who makes a mouse of himself, the cats will eat.

Generally Perfect Answer (Score 6): One who deprecates himself or expresses feelings of worthlessness, will be taken advantage of and be mistreated by others.

Score 6
(Responses which put emphasis on the feelings)
If you don't have a good opinion of yourself and act accordingly, then people will step on you...If a person who doesn't value himself, is scorned by others...If you run yourself down, then others will feel less of you also...If a person doesn't feel like sticking up for himself, he will be taken advantage of...It doesn't pay to be meek, mild, and degrade yourself, because others will take advantage of you.

Score 5
(Responses which put emphasis on thinking)
The guy who thinks very little of himself is usually kicked around...Having a low opinion of yourself doesn't prepare you to meet the challenges of life...If you don't think too much of yourself, you can't expect to get too much respect from the others...Don't belittle yourself, because if you do, you'll lose out...If you put yourself down, others will treat you as such...As a man thinks of himself, so he is treated.
Score 4.
(Responses which put emphasis on action; i.e. to make oneself unrespectable).
He who makes himself dirt is stepped on by people who are lower than him, to help out their ego...If you make a fool of yourself, people will tell you so and laugh...He who does not make himself strong, will be put upon...If you make a fool of yourself, you will lose out...A man should be treated as he wants to be treated...Don't make yourself small or belittle yourself or you'll be stepped on...He who makes himself easy prey is stepped on...If you don't want to be pushed around, don't ask for it...

Score 3.
(If a statement is made referring to either of these two thoughts in the proverb: (a) A statement of self-degradation, (b) A statement alluding to being taken advantage of by others.)
If you live a weak life, it's because you're a weak person...Taking advantage of somebody...Don't ever underestimate yourself...One should never belittle himself...Making false statements about someone that is not true...Don't step on people, but don't crawl under people...One should walk with dignity...Sometimes you feel small for the things you do...Honor yourself first, then honor others...He who is white trash, he'll be stepped on...Don't belittle yourself.

Score 2.
Being selfish I guess...A person who aspires to vanity is not sought out by others...Be yourself and avoid strangeness by not pretending...Be strong, don't be weak...Stand up for what you are...Don't throw pears before swine...You have to be clean, I guess...Don't be self-conscious...Tearing down.

Score 1.
But I shaved last night; do I need after-shave lotion...If you get dirty you'll end up a Negro...You want to get something for nothing and it is a dirty deal; the Lord only gives you something for nothing...I think it pays to be a mess.

PROVERB SET # WINTER SIX
In time a mouse will gnaw through a cable.
Little strokes cut down great oaks.
Slow and steady wins the race.*

Generally Perfect Answer (Score 6): With persistence and patience, one may accomplish most tasks.
Score 6.
If you have the right motives and are persevering, then you should be successful in most things...It means patience and endurance will help you succeed in life...Perseverance - if you keep trying at something, you will eventually succeed in it...Perseverance - if you stick to something long enough, you achieve the goal.

Score 5.
Be persistent in order to get something done...If you are patient and keep at it, you will get it done...Perseverance will usually pay off in the long run...Perseverance will accomplish your task...Patience wins out overall...Persistence will overcome any obstacle...It's not the speed that wins the race, but the endurance.

Score 4.
(Responses which convey that it takes time to complete something). By working slowly, by doing little things toward a certain job, you'll get there...Perseverance means success...A slow steady pace is best for success...If you pace yourself, you come out on top...With a slow process, a lot can be accomplished...If you keep at something steadily, you'll win out in the end...If you start something and stick at it slowly and gradually, you'll win out...If you go slow and steady, sometimes you get more done then if you rushed it...Sometimes slow is better than fast; you accomplish more...Patience brings confidence in oneself...The prize is not always to be swift...If you pace yourself toward your goal, sooner or later you will make it.

Score 3.
An athlete when he starts out he's a little boy; but as he grows slowly, he gets better...A snail's pace is better than none...Small actions can have great results...It takes practice to become good at something...It isn't how fast you do a thin, it's how well you do it...Speed isn't always the essence...Keep at something, stick to it...If at first you don't succeed, try again...Some tests require patience...Patience at a task is helpful...Take your time, the slower you do things the better off you are...Be persistent...Humans should pace themselves in what they do.

Score 2.
To be on time...Waste makes waste...You should plod your activity...Good thinking and slow thinking keeps you in the race...He who is careful will not make mistakes...It's better to attack a problem with tenacity, than to give up easily...If you are real careful, you might succeed...To win, you can't give up hope...If you are slow and steady, you'll win the race...Slow and steady, little strokes will cut down the tree...Brings to mind the turtle and the hare racing...He who hesitates is lost...Confidence and consistency...Keep your nose to the grindstone.

Score 1.
Over the time...Use discretion and don't overestimate other people...A fool and his money is easily parted...A man's strength is equal to a monster.
PROVERB SET # NUMBER SEVEN

Strike while the iron is hot.
Crab with a quick hand the fruit that passes.
Hoist your sail when the wind is fair.

**Generally Perfect Answer** (Score 6): Take advantage of an opportunity when it presents itself.

**Score 6**
When an opportunity comes, take advantage of it...
You should take advantage of opportunities when they present themselves...
You should take advantage of opportunities when they are ripe...
Opportunity only knocks once and when you have an opportunity, take advantage of it...
One should take advantage of opportunities right at the time...
Take advantage of the opportunity while it is there...
Take advantage of your opportunities when they arise - don't hesitate...
If you have an opportunity that comes along in your life, take advantage of it while it is there...
When the opportunity arises for success in something, we should take advantage of it at the time.

**Score 5**
Do the thing when the opportunity arises...
Do something when the opportunity presents itself...
Act while the opportunity presents itself...
When an opportunity presents itself, we must be ready...
Get a job done before or do it when the time is ripe...
Do ready when the opportunity arises...
You have to grasp an opportunity when it is there...
Take your move when the opportunity arises.

**Score 4**
Do not put off till tomorrow what should be done today...
He who hesitates is lost...
Accomplish the things when you think of them...
What you have to do is best carried out at the most opportune time...
Time and tide wait for no man...
Make your moves when conditions are favorable...
Be ready for opportunities...
Take action when action is necessary...
Do the right thing at the right time.

**Score 3**
(When the subject makes a statement alluding to the proper or right time to do something.)
Get your work done while you are capable of doing it...
Do it at the right time...
Strike now; it might not be worth it to strike later...
Ready for action, like asking the boss for a raise when he has a smile on his face...
Take advantage of present things...
Direct your efforts to the right time...
Strike when you are ready...
A person who is alert won't miss a good opportunity...
Sometimes you do something just when it's the right time...
Do something at the right time...
Do it now, don't wait till later...
Do it now or you'll lose time...
Do on time...
Opportunity knocks once...
Be opportunistic...
There is a time for everything.
Always be prepared...When the iron is hot you can forge it; put it in the shape you want it...Strike out at life, but strike out with intelligence and honesty...If you are sure of yourself, don't hesitate...Action is louder than words...Get while the getting's good...Get off to your best ability and don't belittle yourself...Get there first...Be prepared for any eventuality...In branding cattle, you do it fast so that it will make a mark on his hide.

Score 1

An iron is used for golf, and when you're hot, you just keep firing away...Work with a little aggression...Allow yourself to be careful, it may become a habit...If you're in a gambling casino, wager a lot as a blacksmith and bend the metal...If something is in action, that action must cease because the man won't last forever.

A shipwrecked man fears a pond.
He who has been bitten by a snake is afraid of a rope.
A scalded dog fears cold water.

Generally Perfect Answer (Score 6): One who has encountered an unpleasant situation will be wary of similar situations which he encounters in the future.

Score 6

A person who has been afraid of a certain incident may liken future incidents to the original, and consequently be afraid of those also...If you are hurt by someone or something, then if a similar situation arises in the future, you'll be leary of it...If you've had a bad experience in the past, you'll be afraid of similar events in the future...If you become afraid of one thing, then you may be afraid of something like it later.

Score 5

(The concept of similarity or futurity)

In situations in life which prove disastrous, you might be fearful of similar situations which go on...He who has been hurt in the past is often afraid of an imaginary object...If you got hurt once, then you are afraid of other things like it...Once something has hurt you, you fear similar things...A person who is afraid of a situation, may find that similar situations also scare him...If you are hurt or frightened by something, then something similar to it might frighten you also...If you have a great fear of something, anything that resembles it will cause fear also...Association - develops a fear of any likeness to the snake.
Score 4.

If you get bitten by a snake, then you are afraid of something looking like it... A man has a great imagination, like you get afraid of doing something if you did something like it before... If you've been harmed, you'll watch it the next time... A person who makes a small mistake becomes frightened of a big one... After misfortune strikes, a person is twice shy...

Score 3.

He who is hurt by a lot, is afraid of a little... He who has been through the mill always fears... A person who has been hurt has fears of lesser things... We tend to associate and exaggerate in our mind... Man learns from his mistakes... He who is hurt is even more afraid... Sometimes if something happens to you, you have a fear... If you are afraid, you should think twice before you do anything... A shipwrecked man is afraid of drowning - so he is afraid of water.

Score 2.

(When the subject states that the person will fear the same situation in the future.)

A man fears a pond because he fears a little thing, because he was shipwrecked in the ocean but that won't happen to me because I'm a priest... A man's fear... Having fear... If a guy commits a crime, he'll be afraid of getting hanged... A rope resembles a snake; some people are afraid of both... A fear of snakes, so he is afraid of a rope because it's shaped like a snake... Don't be a coward because you failed once... Fear is part of your imagination... Always be on guard... If you lose out, don't fret... A rope looks like a snake... A burnt child is afraid of fire... Someone's been hurt... A coward dies twice.

Score 1.

Don't get discouraged... Crime does not pay... Gold is where you find it... You might not be able to tell if your eyes are bad... The injection by the snake will alert the person to the fear of hanging, but I'm not afraid of God's mother... You feel what reminds you of the hurt... That is talking about suicide... Once you've been burnt by a hot stove, you have a mark on your soul... Never say die.
Don't count your chickens before they're hatched.
Don't bake the cake before the batter is mixed.
Don't cross the bridge until you get to it.

Generally Perfect Answer (Score 6): Don't worry about problems or events which are in the future.

Score 6.
(Responses referring to worry, concern, and overanticipation.)
Don't worry about the future until it is necessary... Don't worry about things ahead of time... It is impossible to foretell the future; therefore, don't overanticipate the problems thereof... You shouldn't try to solve a problem until the problem is there... Don't anticipate things until they are actually realized... Worry about today and not tomorrow... Don't be overly concerned with future contingencies.

Score 5.
(Responses referring to thinking, planning, and figuring.)
Don't make plans for something that might not happen... Solve your problems when you come to them... Don't jump to conclusions... Don't try to solve a problem until you come to it... Don't put off today what you could do tomorrow... Don't plan with elation and dreams, because you might walk blindly into a chasm... Do not anticipate things.

Score 4.
(Responses referring to planning ahead of time.)
Don't plan too far ahead... Don't make plans until you are sure... Don't try to predict something before it happens... Make sure you know what you are doing before you act... Don't worry too much about tomorrow's problems... Don't consider something before you come to it... Don't judge before you have all the answers.

Score 3.
(Responses referring to general action and time elements.)
Don't get started too soon... Wait for the right time... Have patience... Don't be in haste until the time comes... Don't be in too much of a hurry... Don't take any chances... Don't do something that you are not prepared to do... Don't do the job until you are ready for it... Don't start doing things till the time to do them actually arrives... Don't go into things until you come to them... Be patient, take one step at a time... Don't get ahead of yourself...
Don't make decisions alone... Be sure the bridges you go over are not blocked... Don't go on bridges if you can help it... Then you are a little kid, others make plans for you... Don't let your thoughts run away with you... Don't cross until you get there, you'll be there when you do... Don't count your chickens before they're hatched... Do not doubt yourself before you take a chance... If you want to succeed, don't make mistakes... Don't be sure of yourself; overconfidence is worrisome... Like putting the cart before the horse because look what happens... A bird in the hand is worth two in the bush.

Low bridge, everybody down for the water... Allow your expressions to be thought of; use proper terms... You can't cross it if you are not there... Don't use pretenses.

Score 2

Score 1

PROVERB SET # NUMBER TEN

Don't judge a book by its cover. *
Don't judge a tree by its bark.
All that glitters is not gold.

Generally Perfect Answer: (Score 6): One cannot evaluate people by surface appearance only. One must look beneath the surface in order to make a more valid judgement of the person.

Score 6

(Only when the subject also includes in his response some reference to having to go beyond appearance, and hence, to look inside of a person to really evaluate him.) Everything that seems good may not be as good inside of a person as it seems on the surface... People may be quite different from what they first appear to be... As to people, sometimes the outside appearance may be good or bad, but that doesn't mean he is good or bad, but that doesn't mean he is good or bad inside; he may be putting on a front... You can't judge a person by the outward appearances, just because a person seems very pleasant and nice outside; that doesn't mean he is the same inside.

Score 5

(Responses in which the concept of inside/outside is stated or implied, and when the concept of a person is implied, or a situation is stated.) Don't take things at face value; you should investigate a situation before you make a judgement about it... You shouldn't make judgements about things until you know about it... Things on the surface aren't always what they seem to be... The inside is more than the outside... All that looks
good is not necessarily so... Don't judge anything until you know all the facts about it... It's better to look into something and find out what it's all about before you say something about it... Sometimes it's better to look into something before you judge it... Outward appearances are not necessarily correct... The surface may not be the same as the interior... People on the surface may not be the same underneath.

Score 4
(The concept of judging with no clear differentiation of the concept of outside-inside differences.)
Don't judge a thing by the way it looks... Don't judge by outward appearances... Some people are not as good as they look... Don't judge people by their looks... Don't judge a situation by its outward appearance... Don't judge a person by his appearance... A good job isn't always as easy as it appears... Examine the facts before you judge... Surface impressions are often wrong.

Score 3
Appearances are deceiving... Everything that looks good isn't... Be careful of getting false impressions of your friends... Don't be fooled by false pretence... Beauty is only skin deep... Don't make snap judgements... Do not be too quick in judging another's character; one quick judgement may be misleading... Don't be fooled by the looks of a certain thing... A picture doesn't always tell a story... There are two sides to every story... If you are dumb, you don't know things; so don't judge things too quickly... Looks are only skin deep... Don't be taken in by false pretences... Don't come to rapid conclusions.

Score 2
You can't necessarily tell what's in a book by its cover... Read it before you judge it... Don't judge by the cover; there's a lot of good books under the cover... Something to do with merchandise; gotta watch out because you can be charged for something that is not worth the money... Look up to people; don't slander them... Take time to learn the nature of things... A book may be good or bad, in spite of its cover... Got to look at the table of contents... Don't judge the Negro because his skin has different vitamins in it which makes him black.

Score 1
That's about being cautious... Tinkle with the shoe today... Don't dream idiotically... No one is perfect but God... Don't let attraction make you sure... Don't be overconfident.
PROVERB SET # NUMBER ELEVEN

Don't rock the boat after it has settled.
Let sleeping dogs lie. *
Once the mud has settled, don't stir it up again.

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Generally Perfect Answer (Score 6): One should not keep bringing
up unpleasant experiences which have occurred in the past.

Score 6
Don't invite troubles upon yourself which haven't invited themselves...
If in some disagreement you reach a peaceful settlement, you shouldn't
do anything to disturb it...When a situation or problem is resolved to
an agreeable solution, it should be done with; then forget about it...
Don't live in the past; don't relive or rehash your past mistakes...
This is like, don't start up an old argument after it has settled down...
There is no need to rehash old things...It doesn't pay to stir up
troublesome things once they have been forgotten...Don't stir up old
problems.

Score 5
(Responses referring to stirring up unpleasantness, when the concept of
unpleasantness is vague or implied.)
Don't stir up a situation which would otherwise be quiet...Don't stir
something up again once it has settled...If you were an enemy and made
friends, don't make him an enemy again; keep the peace and don't upset
him again...Don't stir up trouble unnecessarily...If you reach a certain
decision on a difficult matter, then don't change your mind...Don't
stir up a hornets' nest when it's not necessary...Don't stir up the ashes;
leave it alone...Don't stir up trouble.

Score 4
(Responses referring to avoidance or maintaining the status quo.)
Don't be a trouble-maker; avoid trouble...If you have enemies, avoid their
company...Keep things as they are; don't disturb...Let some things as
they are; avoid them...Once a thing is done, don't be concerned about it...
Don't look for trouble...People who seek out trouble usually find it...
Often it's best to leave well enough alone...What is all right as it is
shouldn't be disturbed.

Score 3
(Providing a vague concept of maintaining the status quo.)
When something is done, let it stay done...Do not disturb the calm...
Don't be troublesome...Don't rouse a person's patience; don't overdo
something...Leave 'em alone; leave 'em in peace...Leave 'em alone; they
like to rest...Leave well enough alone...Don't fuss over things...Try
to not to live in the past...Don't be antagonistic...Leave well enough alone...
Don't disturb unless it's necessary...Don't disturb a person when he is
quiet...Don't try to disturb something that is trying to rest...Don't try to make changes...Don't kick up a disturbance...Let well enough alone...When a job is finished, leave it alone...When you establish a good equilibrium, don't disturb it.

Score 2.
You can never convert a crook; let him be...Don't feel sorry for lazy people...Dogs that sleep let them be; they have sleeping times...Don't wake him up because he may be angry...Learn from your mistakes so you won't repeat them...Don't bother a dog because he can't judge his bark from his bite...Silence is golden when fools lend an ear...Let those sleep that are sleeping...Don't bother sleeping dogs...If you have done something at play or at work and it frightened you, then you wouldn't do that job anymore...Don't disturb working people.

Score 1.
Means a person is attending a store...They will wake up in time and they are no good while they are only half awake...Take the point of least resistance.

PROVERB SET NUMER. TWELVE
Words have more might than swords. *
The pen is mightier than the club.
A pen is more powerful than a lion's paw.

Generally: Perfect Answer: (Score 6): Reason can be more effective than physical force.

Score 6.
(Emphasis on thought or reason being better than force.)
It is better to discuss something openly, rather than to get into a physical conflict...Thinking and talking do more than muscles and strength...Arguments are stronger than action...Talking to a person is sometimes more effective than fighting with him...Discussion is better than fighting...Intelligence is more powerful than physical force.

Score 5.
(Emphasis on the more concrete aspects of reason or force.)
Books are more powerful than armament...Words are stronger than armament...Words, or something written, is more persuasive than using weapons of war...More can be done by talking than by fighting...Speaking can be more powerful than violence...Peace treaties have more meaning and are more helpful than swords...Ideas are more mighty than the fist...Words are more powerful than manual means.
Score 4
(The subject's responses are concrete as well as evidencing a question-
able grasp of the relationship between reason and force.)
Words build, swords destroy... The cry is always louder than action...
Talking is a better weapon than violence... You don't have to use force
in everything you do; you can be diplomatic and discuss matters...
Words are useful in solving physical conflicts... Journalism is greater
than the military... Mass communication is better than force.

Score 3
(Subject evidences limited to no grasp of the relationship between
reason and force.)
Words have power over all... Poems are remembered longer than wars...
There is strength in writings and/or speeches... A small man can be
just as big as a large man with words... Men can solve their problems
better without warfare... Words mean a lot... Don't fight; talk and write
about it... A pen can do things better... Politics rules the world.

Score 2
(Words can do more damage than violence.)
What you say does more harm than weapons sometimes... Often what you
say is worse than weapons... A double use - you can sway people with
words because words mean more to you... Refers to being diplomatic...
Be careful of what you say about your friends... People resent words
sometimes when you tell them something... Put up or shut up... Have care
in how you express yourself; some people talk without thinking and hurt
people.

Score 1
Don't jump to conclusions; do things the right way... Don't be impetuous;
haste makes waste... Tell the truth; the truth is better than telling a
lie... You shouldn't hurry into things.

PROVERB SET # NUMBER THIRTEEN

Even a horse who has four legs stumbles sometimes.
Every man, no matter how sure, cannot hit the nail on the head all the
time.
The homing pigeon will lose his way once in a while.

Generelly Perfect Answer (Score 6): No one is infallible or perfect
even though he may be quite bright.
Score 6.
No one is perfect...Even the perfect fail sometimes...The best of us can always make a mistake...No matter how sure you are, you can always make a mistake...Even the smartest person makes mistakes...Even people who have ability sometimes foul up...People, no matter how good at a task, may fail occasionally...Even the best of us make mistakes...
No one is infallible; we all make mistakes...Even a person with a sound mind and body will make a mistake.

Score 5.
Everyone makes mistakes...You cannot be right all of the time...You can't be sure all the time...Everyone can make mistakes...To error is human, to make mistakes...All creatures make mistakes...To error is human.

Score 4.
A man can't make it all the time; loses once in a while...A person or persons are apt to not always be correct in deciding issues...Don't try to be perfect; use what you have and be happy...Don't try to be a perfectionist...Perfection is possible, but is not required at times...You can't count on a leader - president - he can't be perfectly correct all the time...A person who is too sure of himself is due for a fall.

Score 3.
Even the best preparations might not be adequate to meet every emergency which might arise...Everything doesn't run smooth; you'll have problems...Don't be discouraged if you stumble; get up and try again...Everyone falls now and then...No matter how good you think you are, there is always someone better than you...Nothing is sure; problems will arise.

Score 2.
You can't be too cautious; accidents will happen...Don't be too egotistic...A horse can get fouled up and stumble; thinking about something...Even a horse who stumbles sometimes quickly picks himself up...We can't all be the same...When walking, anyone can lose his footing...If you succeed once, it does not mean you will succeed again...Sometimes if you are too bit, it makes you stumble...When something goes wrong, you should let it alone...You gotta go sometime - if your legs are not steady - you'll collapse...A horse with four legs may stumble...During the war, the homing pigeon could lose his way if it was raining...The lead horse coming around the final turn hit a hole and hurt his leg...You aren't certain of anything because there could be some upsets...It depends on whether it's muddy, the terrain...All horses have four legs, but they do fall.

Score 1.
Numbers mean nothing...You can lead a horse to water but you can't make him drink...A man can't be gone forever, without some rest.
Too many generals will lose the war.  
Too many chiefs and not enough Indians never make a strong tribe.  
Too many cooks spoil the broth.

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Generally Perfect Answer (Score 6): Any organization's functions will be hindered if every person in it tries to be a boss or leader.

Score 6.  
(The subject should make some statement concerning the disorganization which results when too many people try to become boss.)  
Too many bosses and not enough workers makes for a poor job...Too much authority and not enough man-power will result in disaster...Too many leaders brings on confusion.

Score 5.  
(The subject should point out that too many leaders results in a poor job output.)  
Too many hands in the pie spoils it...Too many people in authority and not enough workers is not a good thing...Too many in charge and not enough workers will not give a good outcome...Too many people working on the same exact thing are going to spoil it.

Score 4.  
(The subject should point out that too many leaders results in little work being done.)  
Too many bosses will never get the job done...Too many of something is not good; too many bosses and the work won't get done...If everyone wants to be boss, then the work will never get done...If you have too many chiefs, they sit back and watch and then you don't have enough privates to do the fighting...If everyone was a ruler in government, you wouldn't get things done...If we were all chiefs, we wouldn't get things done.

Score 3.  
If you have an over-abundance of suggestions to a solution, you also need someone to carry-out orders as well as to give them...We can't all be bosses...Too many bosses never helps...Too many people in authority is not a good thing...Allow yourself to be led at times, even if you're a leader yourself...One leader is enough for many people...Too much help hinders progress...There has to be a certain number of leaders and a certain number of followers...A few good leaders is all that is necessary...There can't be all bosses; you have to have some workers...It takes the rank and file to do most of the work...Too many bosses aren't good; there should only be one boss...Too many bosses is detrimental.
Score 2

Nanpower...Each job has its own master...Without students there wouldn't
be any teachers...One man can stir up trouble just as much as a handful...
Without a leader, things turn to mob violence...It is better to be a
follower than a leader...Some assume leadership or think they do...Too
much of one thing spoils it for the rest...If you want a thing done right,
do it yourself...An army is as good as its non-com...Maybe they need
more chiefs to do the work...Generally, they mean everyone has ideas of
their own and they all soon they are correct...Many hands make work
light.

Score 1

A man's will must be humble...Intelligence is gained by listening to
mortals...Don't be spoiled.

PROVERB SET * NUMBER FIFTEEN

He that wakes first is first bathed.
The early bird catches the worm.

General: Perfect Answer (Score 6): The one who is prompt and/or
first, reaps the most benefits.

Score 4

The first to take advantage of a situation has the best chance...The
person who gets there first, gets the best deal...Be punctual and earn
more rewards...He who is on time gets the best deals...He who is early
at anything gets the best results...The one who is first is liable to
get better results...Be on time and you will get better results.

Score 5

First come, first served...The one who is first gets the best...He who
acts first has an advantage...The first person at anything gets the
target...He who gets there first will get the best.

Score 6

He who is there at the right time gets the job...Being prepared for
something and being where you should is essential to success....
Being punctual could be one of the days to your success...He who
makes the greatest effort receives the greatest reward...Jump before
you miss out on things...If you're the first one to do something, you'll
be the first person to get what you're after...To get ahead you've got
to be punctual...Promptness is rewarded...If you want to be first in
anything, you have to start off bright and early.
Score 3
Always being on time...He gets there first and gets the most to eat...
If you wait for something you won't get it; you have to be there on
time...If you have an opportunity, take it; don't delay...It is better
to be too early than too late...Jump first before someone beats you to
it...Alert people usually take advantage of opportune moments...The
individual that plugs; if you went something you really go after it...
He who hesitates is lost...Be on time...Be prepared for things as they
come up...Opportunists get ahead...

Score 2
A man needs initiative to do things...Early to bed, early to rise,
makes a man healthy, wealthy, and wise...The hungry one gets the best...
Never put off till tomorrow what you could do today...The first one
will never be late...A hot meal is a first arrival...If you're early
in the mess line you get what they're serving, but if you're late you
miss it...If you rush it, it isn't any good; you should take your time...
If you promise someone to be somewhere at a certain time you should be
there...Food will be gotten by promptness...You gotta have initiative.

Score 1
Always be progressive...Take time to relax during eating...Time cools
everything...Be wiser than the next person...He who trusts God receives
the better life...He gets the gravy, because it signifies that, the hand
out.

PROVERB SET & NUMBER SIXTEEN

What good is water when the house is burned down. *
It is too late for the bird to fly when it is caught.
Why lock the stable door after the horse is gone.

Similarly:
Perfect Answer (Score 6): One cannot rectify a situation
once an error has been made.

Score 6
Help is no good after the tragedy has occurred...You can't repair
your mistakes after they have happened...Preventive measures are not
too much good after an accident has already occurred...Refers to the
futility of trying to correct mistakes that have already transpired.

Score 5
In business, all the preparations are no good if the opportunity is
already passed...Don't cry over spilt milk...Something too late is of
no avail...No sense doing something to stop something if it's already
happened...If something happens and it's too late to do anything about
it, then there's no sense in worrying about it...It is too late to
stop things after they have happened...Don't worry about anything once

it is all over and done with... When a thing is done, one shouldn't concern himself with it... You don't need a doctor after you're dead... Too little and too late does not bring satisfaction... What is the good of something if it's already happened— it's too late... Don't take precautions when it's too late — take them in advance... Once something's done, it's too late.

Score 4.
It is too late when you hit bottom... Doing things too late isn't good enough... Don't start wishing when it is too late... It is not always good to be better late than never... It's a case of too little, too late.

Score 3.
Being too late... It is too late... It's better not to be too late at having something... When something is done, it can't be undone... Don't be late... It's too late.

Score 2.
(When a response is made which makes reference to having to plan before hand so that errors will be avoided; i.e., "You have to plan things well so mistakes won't be made.")
No good when it's burnt down — it's burnt down... It's better late than never... Too late if the fire is out; what good is the water... Keep the same habit; that is, keep trying... We never miss our loved ones until they are dead... We must practice safety first around the home... Some things cannot be done... Don't count your chickens before they are hatched... Think about the problem before it arises... If you don't get there on time with the water, well then, that's the end of the house... If you haven't got any water, it's possible you will burn up... Water is good to drink... You don't need water; you need to rebuild the house... Do things right.

Score 1.
Caution; which the sense say is required is best when used... Time ruins everything... Count your blessings while they are awarded to you... Something you have is more valuable than something which is gone.
PROVERB SET # NUMBER SEVENTEEN

Rome was not built in a day.
Great bodies move slowly.
Troy was not captured in a day.

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Generally Perfect Answer (Score 6): Great deeds are accomplished only over a long period of time.

Score 6
Great achievements are not made in single steps; takes time...You can't always do the big things in a short time - they take a long time...Great tasks usually take a long time to enact...Sometimes for major accomplishments it takes a long time...It takes time to do great things and given the time you can accomplish most things.

Score 5
(Responses which tend to be less superlative.)
Perfection is not achieved at once...Success doesn't come overnight; it takes planning and action; doesn't happen in a moment...It takes time to accomplish things that are worthwhile...Accomplishments take a long time...Most worthwhile tasks take time and patience...It takes time to do a good thing.

Score 4
Don't try to do two days' work in one...Anything that is done takes time; it isn't done in a short time...Don't try to accomplish a day's work in one morning...Don't try to do everything in one day...You cannot accomplish something in a short time...If you want to do something big, move slowly...It takes time to do a good thing.

Score 3
(If no reference is made to something important being done; i.e., "It takes a long time to do anything.")
It takes a long time to do things...Everything takes time to do...Great things take more than a day to build...If you want to progress in a subject, you have to strive at it...Everything takes time...Have patience...Things take time.

Score 2
All the sands of time...Don't rush things...Take your time; why rush it...Time is an element to be used intelligently...Waste makes waste...Time takes care of everything...A house is only as strong as the amount of work that went into it...Large cities take a long time to build...Take your time and do a good job...Do one thing at a time...It takes time to build an empire...You should think things out before you do them.
Score 3.
Running away is not a product of the haste of the moment... Nor did it burn overnight... Great bodies can be captured pretty fast, too.
Appendix B.

The Mean Performances of the Normal and Good Premorbid Groups Used in the Present Study, as well as Blauferb's (1962) Normal and Schizophrenic Groups - Under the Written Single and Set Proverb Conditions.

Due to scoring differences, a constant sum of 25 was added to Blauferb's mean proverb scores. Harlin et al (1965) also noted that their scores showed a consistent tendency to run higher than Blauferb's proverb scores. They stated (1965,392): "This constant error has no appreciable effect on the results reported, and is a result of the scoring difficulty noted by Blauferb: 'minor additional scoring criteria had to be devised (473)."
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