

RELATIONSHIPS BETWEEN AUTOKINESIS
AND PROGNOSIS OF HOSPITAL STAFF
AND PATIENTS

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Chapter 1

PROBLEM AND DEFINITION OF TERMS USED

In the past it has been a fairly common event when a theory of personality which did not fit into Freud's general theory was proposed. The field of psychology has had no shortage of these theories. A group of these theories which has been classified as self-determining, has been proposed recently. The theory of positive disintegration was the main theory the present study was based on and two hypotheses related to this theory have been investigated.

Freud believed that psychopathology was often the result of a superego which was too strong, keeping man's instincts from being gratified and causing anxiety and mental disorders. In the treatment of neurotics, therapy consisted of working against this superego or conscience or parental image; whatever was demanding more of the patient than he was comfortably able to do. Society's morals were also involved and Freud thought they demanded more sacrifices than they were worth.¹

Today an almost opposite point of view has been taken by some psychologists and psychiatrists or at least

¹S. Freud, General Introduction to Psychoanalysis (New York: Liveright Publishing Corporation, 1968), p. 367.

an important turnabout has been considered. The neurosis that accompanied the failure to satisfy one's superego or ideals may have been a good sign; the individual may have found that his personality at that time was not what it should have been. Much guilt, shame and anxiety was the result. The person could overcome his neurosis by either accepting Freud's idea and trying to rationalize his shortcomings and bring his philosophy and ideals down to the level of his functioning personality, or he could try to raise the level of this personality to the degree necessary to satisfy his ideals.

These self-actualizing psychiatrists were asking whether psychopathology was a sign of personality disorganization and regression or a sign of potential personality growth and development. For example, Silverman pointed out that "most psychiatrists find it hard to regard the bizarre disorganization of schizophrenia as anything but ominous."² They have acted under the assumption that these behaviors should be done away with as quickly as possible. It has been a common procedure to prescribe huge doses of anti-psychotic drugs. There has been a growing number of psychiatrists, however, who have seen such personality disorganizations as an opportunity for positive personality growth. In this regard, Dabrowski noted that too many psychiatrists

²J. Silverman, "When Schizophrenia Helps," Psychology Today, 1970, 4(4), 63.

transferred psychopathological phenomena to all patients with whom they have had contact. On the other hand, Dabrowski believed that "the symptoms of anxiety, nervousness, and psychoneurosis, as well as many cases of psychosis, are often an expression of the developmental continuity."³ He considered them to be processes of positive disintegration and creative nonadaptation.

Positive disintegration was a reaction to a situation where an individual was unable to solve his problems as he usually had solved them. According to Dabrowski, if this natural reaction and process was interrupted by drugs or therapy, the patient might have been harmed. He might lose his ability to solve problems and a limit might have been set on his personality development.⁴

THE PROBLEM

For the theory of positive disintegration to have been further developed and before it could reach a stage where its applicability in working with mental illness could be tested, more specific information has been needed. Dabrowski claimed that for some people disintegration was the "basis for developmental thrusts upward, the creation of

³K. Dabrowski, Personality-Shaping Through Positive Disintegration. (Boston: Little, Brown and Company, 1967), p. 131.

⁴Ibid.

new evolutionary dynamics, and the movement of the personality to a higher level."⁵ Records have indicated that the disintegration of some individuals' personalities has led to a higher level of personality and yet for other individuals, their personality has merely been maintained at its previous level and in many cases it has regressed. The therapy these individuals have received has been assumed to be a factor in determining the outcome. Individual differences in the ability to experience positive disintegration might also have been a factor and it has been proposed that a psychological phenomenon, autokinesis, was related to this ability. The present study was designed to gain information concerning such a possible relationship between autokinesis and the ability to experience positive disintegration.

Basic to an understanding of such a possible relationship was an understanding of the personality dimension ego-closeness--ego-distance developed by Harold Voth. According to Voth, there was a continuum reflecting opposite kinds of personality at the extremes with intermediate forms in the mid-range. Ego-close individuals have been described as having a "relatively unwavering investment of attention in the immediate stimulus field and a concomitantly greater

⁵Ibid.

receptiveness to, need for, and acceptance of external stimuli."⁶ Voth found that ego-closeness could be related to extroversion and a greater tendency toward action and impulsiveness, sociability, a general responsiveness to the environment, distractibility, suggestibility, affective responsiveness, and the need for many friends. Ego-distant individuals were found to have a "greater capacity to detach attention from external circumstances, less dependence upon external stimuli, and greater accessibility to subjective experience."⁷ The result was a more isolated, autonomous position of self in relation to the external world. Voth found according to his investigations that ego-distance could be related to introversion and independence, negativism, self-sufficiency, the enjoyment of solitude, and a more reflective and analytical thought style.⁸

Autokinesis, the experiencing of motion of a stationary pinpoint of light in an otherwise totally dark room, has been shown to be a simple and direct expression of the ego-closeness--ego-distance personality dimension. Ego-close subjects tend to see little or no movement, another example of their need to maintain contact with external

⁶H. Voth and others, "Autokinesis and Character Style: A Clinical Experimental Study," Journal of Psychiatric Research, 1968, 6, 51.

⁷Ibid.

⁸Ibid., pp. 51-65

objects and social realities. Ego-distant subjects are less dependent on external conditions and tend to see more movement.⁹

Relationships have been tested between autokinesis and several other variables. Voth found that although patients in the mid-range recovered from mental illness more rapidly than patients at either extreme on the continuum, the amount of autokinesis seen remained relatively constant over time and the autokinetic test could not be used to differentiate between 'normal' and 'sick' individuals.¹⁰

Another study showed a relationship between autokinesis and several essential aspects of the psychotherapeutic process. Ego-close patients with low autokinetic scores were more likely to experience the basis of their illness in projected or externalized terms, to respond more to an approach which emphasizes clarification, suggestion, confrontation and guidance, to develop overt transference more rapidly, to do more acting out, and to improve thru the incorporation of the therapist as a supportive, directive object. Ego-distant patients or patients with high autokinetic scores showed a greater capacity for psychological mindedness, more rapidly took to an explanatory-introspective mode of psychotherapy, revealed overt

⁹Ibid.

¹⁰H. Voth, "Ego Autonomy, Autokinesis and Recovery From Psychosis," Archives of General Psychiatry, 1962, 6, 46-51.

transference more slowly but showed a greater capacity to observe with perspective the implications of this transference, showed very little acting out, and made improvement more clearly associated with insight. Voth claimed that these ideas were consistent with his clinical experience and psychotherapy should be tailored to idiosyncratic personality features related to ego-closeness and ego-distance.¹¹

Since the prognostic expectations of both the hospital staff and patients were studied in the current investigation, consideration was also given to the ways in which social expectations have influenced behavior. Rosenthal and Jacobson in 1968 studied the relationship of teachers' expectations and learning in children. The teachers were told to expect intellectual blooming in certain of their students who had been randomly selected. A year later these children had made significantly greater gains in I. Q. scores than other students, and the teachers considered them to be more well-adjusted than the other students.¹² If teachers' expectations were important in understanding education, the expectations of the hospital staff should also have been considered in psychotherapy.

¹¹H. Voth and M. Mayman, "The Psychotherapy Process and Its Relation to Ego-Closeness--Ego-Distance: Part One," The Journal of Nervous and Mental Disease, 1966, 143(4), 324-337.

¹²R. Rosenthal and L. Jacobson, "Teacher Expectations for the Disadvantaged," Scientific American, 1968, 218(4), 3-7.

Studies of placebo effects have long shown the importance of the expectations of the subject. For example, in a study done by Schachter and Singer in 1962, subjects were injected with a placebo in the form of a saline solution. A significant number of subjects reported the emotional reaction and physiological symptoms they were told to expect.¹³

Statement of the Problem

Although it has been shown that patients with autokinetic scores in the mid-range recovered from mental illness more rapidly than patients with extreme scores in either direction, there has been no investigation showing whether expected long-term patients were more likely to have high or low autokinetic scores. Investigations concerned with response to treatment have also been carried out, but the patients' confidence in release from the hospital has not been studied. This investigation was concerned with the question of whether patients judged to be long-term by a state hospital staff, had significantly higher or lower autokinetic scores than expected short-term patients. Secondly, this investigation was concerned with the question of whether there was a relationship between autokinetic score and the subject's report of confidence in release from hospitalization.

¹³S. Schachter and J. E. Singer, "Cognitive, Social, and Physiological Determinants of Emotional State," Psychological Review, 1962, 69, 379-399.

Statement of Hypotheses

The hypotheses to be tested in this study were:

(1) there is no significant difference in amount of autokinesis reported by patients who are expected to be long-term and patients who are expected to be short-term, according to the prognosis of the hospital staff; (2) there is no significant difference in amount of autokinesis reported by patients who assert they are confident of imminent release from the hospital and those patients who lack such confidence.

Purpose of the Study

The specific purpose of the present study was to examine the relationship between autokinesis and prognostic expectations both by the hospital staff and the patient himself. Further information was sought in the area of individual differences among mental patients and a possible correlation between these differences and autokinesis.

Significance of the Study

A survey of the related literature led one to expect that those patients who had confidence in release and/or the hospital staff's confidence in recovery would have mid-range or high scores. If the data supported this expectation and one agreed with the concept of positive disintegration, then therapy for patients with moderate to high autokinetic scores might have been organized around the philosophy that their disorganization was likely to be followed by a positive

effort to find new ways of meeting life's problems. Consequently, therapy techniques stressing insight into the patient's problems of life, the reality of his wishes or ideals, and ways to develop the necessary personality should have taken precedence over suppressive techniques such as shock treatment or extensive medication.

DEFINITION OF TERMS

Terms which had a particular meaning in the present study as well as terms which must be understood to follow the study, are listed below.

Autokinesis. The experiencing of apparent motion of a stationary pinpoint of light in an otherwise totally dark room.

Disintegration. Disharmony within the individual and in his adaptation to the external environment with symptoms of anxiety, psychoneurosis, and psychosis.¹⁴

Ego-closeness. High dependence on stimuli from the external environment and a compelling need to invest attention-cathexis in external objects. Ego-close subjects tend to see no or low movement.¹⁵

¹⁴K. Dabrowski, Positive Disintegration (Boston: Little, Brown and Co., 1964), p. 5.

¹⁵H. Voth and others, "Autokinesis and Character Style: A Clinical-Experimental Study," Journal of Psychiatric Research, 1968, 6, 51-65.

Ego-close personality. Openness during interviews, tendency toward action, general responsiveness to environment, lack of reflection and analysis in thinking, tendency toward quick and regular showing of emotions and sociability, suggestible, distractible, and easily turned from goal-directed behavior by external influence.¹⁶

Ego-distance. Less dependence upon external stimuli and a greater ability to shift cathexis from external objects to internal objects and stimuli. Ego-distant subjects experience varying degrees of movement.¹⁷

Ego-distant personality. Tendency to hold to convictions, values, and beliefs unless crippled by psychiatric illness. Autonomy, lack of reliance on others, and detachment along with strong leadership and organizational capabilities. Independence associated with a greater tendency to reflection and introspection.¹⁸

Expected long-term patients. Patients who scored ten or less when rated by the hospital staff and scored ten or less when rated by themselves. (Appendix A and B).

¹⁶Ibid., 62.

¹⁷Ibid., 51-65.

¹⁸Ibid., 62.

Expected short-term patients. Patients who scored eleven or more when rated by the hospital staff and scored eleven or more when rated by themselves. (Appendix A and B).

Integration. Evolution, psychic health, and adequate adaptation, both within the self and to the environment.¹⁹

Nystagmus. An involuntary rapid movement of the eyeball, usually from side to side.²⁰

Positive disintegration. Disintegration followed by enriched life, enlarged horizon and creativity. Symptoms manifested during periods of developmental crises or of extreme stress, insight and capacity for emotional closeness present. Whole person involved rather than merely narrow symptoms, high level of intelligence and a balance of retrospection and propection.²¹

Prognosis. A prediction of the probable course of a disease and the chances of recovery.²²

¹⁹K. Dabrowski, Positive Disintegration (Boston: Little, Brown and Co., 1964), p. 5.

²⁰J. Friend and D. Guralnik (eds.), Webster's New World Dictionary of the American Language (New York: World Publ. Co., 1956), p. 1010.

²¹K. Dabrowski, Positive Disintegration (Boston: Little, Brown and Co., 1964), pp. 10-19.

²²Friend and Guralnik, op. cit., p. 1164.

Shaman. A priest or medicine man of shamanism which is based on the doctrine that the workings of good and evil spirits can be influenced only by the shamans.²³

Streaming phenomenon. The experience of seeing slowly moving swirls which appear to be streams of granules moving in broad swirls with the eyes closed and concentration on the field of vision. The granules move without order unless the eye moves and then the granules move in the direction of the eye-movement.²⁴

LIMITATIONS OF THE STUDY

The main limitation of the present study arose from the difficulty in controlling factors not related to autokinesis which could influence both the patients' confidence and the staff's rating. A test-retest correlation should have been obtained before trying to draw conclusions from results based on these ratings. Many of the factors which would influence the ratings would be related to autokinesis but there might also have been factors which would not have been related.

A second limitation was the different conditions under which the test was conducted. Due to the difficulty

²³Ibid., p. 1338.

²⁴C. E. Ferree, "The Streaming Phenomenon," American Journal of Psychiatry, 1908, 19, 484-503.

in having the patients escorted from their wards to one single testing room, the patients were tested in a room in the building where they were hospitalized, except for one group which was escorted to a nearby building. Three different rooms were necessary, as well as three different days. The testing situation was not as standardized as would be desired, both because of this difference and the difference in group size. Testing was done in groups, with the size dependent upon how many patients from a ward were able to participate at any one time. Group size ranged from one to ten, usually six or seven.

Chapter 2

REVIEW OF LITERATURE

Two areas of literature were reviewed, the first related to autokinesis and the second to the theory of functional disorders as positive disintegration. In the first section on autokinesis, the historical background and various explanations of autokinesis which have been offered were reviewed. Second, various studies which investigated variables affecting autokinesis were presented and third, studies relating autokinesis to personality were reviewed. The second section on functional disorders as positive disintegration, reviewed the works of different authors who have agreed with some part or all of the idea of positive disintegration.

Autokinesis

A review of literature has indicated that extensive research has been carried out investigating the autokinetic phenomenon.

Historical background and explanations offered of autokinesis. Autokinesis has a history of a number of centuries, first being noticed in the apparent movement of stars. In 1887, it received its name by Aubert and since

then it has assumed a position in psychology.¹ In 1928, Guilford and Dallenbach attempted to find the cause of autokinesis. They believed that the streaming phenomenon could account for the movement seen. If one closed his eyes and looked deep into the field of vision, he could see slowly moving swirls which appeared to be streams of granules moving in broad curves. These granules appeared to move without order unless the eye moved and then the granules moved in the direction of the eye-movement.² In the autokinetic experiment conducted by Guilford and Dallenbach, the eye movements were photographed, both for one eye and both eyes. These authors suggested that the streaming phenomenon had a different direction for the two eyes, and when both eyes were used there was a conflict in movement or zigzag, the direction at any one time being determined by the dominant eye.³

In 1958, Sherif wrote that the "experimental production of the autokinetic effect is very easy and works without any exception."⁴ He stated that a single point of

¹J. P. Guilford and K. M. Dallenbach, "A Study of the Autokinetic Sensation," American Journal of Psychology, 1928, 40, 83.

²C. E. Ferree, "The Streaming Phenomenon," American Journal of Psychology, 1908, 19, 484.

³Guilford and Dallenbach, op.cit., pp. 83-91.

⁴M. Sherif, "Group Influence Upon the Formation of Norms and Attitudes," Readings in Social Psychology, eds. E. E. Macoby, T. M. Newcomb, and L. Hartley (New York: Holt, Rinehart and Winston, 1958), p. 220.

light could not be localized definitely in a completely dark room because there was nothing in reference to which you could locate it. "These are facts which are not subject to controversy; anyone can easily test them for himself."⁵ Sherif failed to explain why some individuals reported no movement and why some said they had seen the light in reference to other objects in the room which they had noted when they entered the room.

A further explanation of autokinesis was offered in 1961. Robertson suggested that internal and external stimuli interact and direct behavior. When external stimuli were reduced an individual was much more aware of internal stimuli. This resulted in two processes, preoccupation, which was focusing more and more on less and less, and suggestibility. With only residual internal stimulation, there was a detachment from any background or context. The end result was a heightened projection of thoughts and feelings and a freer and more uncritical reaction to residual sensory input. Robertson applied this concept to hypnosis, autokinesis, creative activity and abnormal behavior.⁶

In 1966, Marshall investigated the hypothesis of compensatory eye movements as the cause of autokinesis. The eye movements were manipulated using a retinal image

⁵Ibid.

⁶M. H. Robertson, "Theoretical Implications," Psychological Record, 1961, 11, 33-42.

displacement technique, and a tracking device was used to record the seconds per trial that the stimulus appeared in each of four visual field quadrants. The results indicated that compensatory eye movements associated with the maintenance of single-point binocular fixation disparity were responsible for the autokinetic phenomenon.⁷

The most recent research on explaining the basis of autokinesis was published in 1969 by Voth, Segerson and Cancro. A relationship was reported between autokinesis and photic driving, the brain's response to a flashing light, which was used to measure cortical excitability. These researchers worked under the assumption that "when autokinesis occurs nervous impulses which are caused by electrical discharge between cortical areas of differing potential are sweeping over the cortex."⁸ A corollary of this assumption was that impulses sweeping over the cortex would occur more extensively where cortical excitability was high.

Factors Affecting Autokinesis. There have been some investigations which have had results supporting the hypothesis that sex is not a factor in the amount of autokinesis

⁷J. E. Marshall, "Eye Movements and the Visual Autokinetic Phenomenon," Perceptual and Motor Skills, 1966, 22(1), 319-326.

⁸H. M. Voth, J. A. Segerson, and R. Cancro, "Autokinesis and Photic Driving: Their Relationship to Cortical Excitability," Behavioral Neuropsychiatry, 1969, 6.

seen. Elfner and Page, in 1963, tested men and women and found no significant differences in autokinetic effect between male and female subjects who had previous experience with the phenomenon. They did find a significant difference, however, between naive male and female subjects and suggested that this difference was a function of the greater responsiveness of females to the experimenter's initial instructions.⁹ This variable, like several others, needs more investigation.

Stability of the autokinetic phenomenon has been questioned and tested, with favorable results generally. Gilbert, et.al. tested the stability of autokinetic movement by varying several conditions: instructional set (accuracy versus illusion), light source (stationary versus moving), sex of experimenter, number and length of trials, and retest time intervals. They found that one dimension of apparent movement, the length of the line, was a stable individual characteristic.¹⁰

Much research has been done on variables related to the testing situation. Cautela and Vitro, in 1964, did research on the effect of instruction on the appearance of

⁹L. F. Elfner and H. A. Page, "Latency of the Autokinetic Effect As a Function of Preexposure," Perceptual and Motor Skills, 1963, 17(3), 862.

¹⁰D. C. Gilbert, J. P. Hahn, J. H. Wackwitz and R. M. Martin, "Stability of Autokinetic Movement," Perceptual and Motor Skills, 1969, 21(3), 715-718.

the autokinetic effect. They claimed that their results contradicted the belief that some individuals held, that the autokinetic effect had inherent properties. Cautela and Vitro wrote that, "the autokinetic effect is not readily perceived by most subjects when movement is not suggested."¹¹ There was a possible limitation in their study in that their experimental situation lasted only three minutes. In the present study many subjects reported that it took approximately five minutes before they saw any movement.

In 1964, a study was done by Kleban, Ismir and Gould to test the influence of social desirability on accepting an autokinetic suggestion.¹² They found that their subjects did not show indications of suggestion. Their second hypothesis that suggestion was related to high and low social desirability scores was not confirmed.

In 1965, an investigation by Farrow, et.al. with repeated trials resulted in the latency of autokinetic movement decreasing with repeated trials whether the trials were continuous or had a time interval. They found that the extent of autokinetic movement had a tendency to increase

¹¹J. R. Cautela and F. Vitro, "The Effect of Instruction on the Appearance of the Autokinetic Effect," Journal of Psychology, 1964, 58, 85-88.

¹²M. H. Kleban, A. A. Ismir, and W. Gould, "A Comparison of Two Types of Autokinetic Judgments and the Influence of Social Desirability on Accepting an Autokinetic Suggestion," Journal of General Psychology, 1964, 71, 207-216.

when trials were massed but not when they were spaced. Various possible explanatory hypotheses were again given and more important, a suggestion was made that both procedures were often used without any consideration of these differences. They believed that dark adaptation should be investigated and always specified in a study.¹³

Lack of standardization in measuring and scoring autokinesis has also been the subject of research. Several different methods of measuring autokinesis have been used, and no one satisfactory method has ever been agreed upon or primarily used. Newbrough and Beck built an apparatus for recording the movement and developed a method for scoring it. Five scores were obtained: Time to onset of movement, time of movement, excursion (length of movement), index of curvilinearity (indicates the relative wandering of the movement), and the speed and relative amount of movement.¹⁴

Group testing has been mentioned above. Two investigations related to this have been published by Stone and by Gardner and Lohrenz. According to Stone's research, autokinetic norms under different amounts of practice and different group size were found. The groups were either one,

¹³B. J. Farrow, J. F. Santos, J. R. Haines and C. M. Solley, "Influence of Repeated Experience on Latency and Extent of Autokinetic Movement," Perceptual and Motor Skills, 1965, 20, 1113-1120.

¹⁴J. R. Newbrough and E. C. Beck, "A New Apparatus For Recording and a Method For Scoring Autokinetic Movement," Perceptual and Motor Skills, 1962, 15, 755-757.

two or four persons. Group size had an effect on the norms and Stone claimed group reinforcement took place, but how this happened was unclear.¹⁵ In the article written by Gardner and Lohrenz, significant validity and reliability findings were presented which led to their suggestion that the autokinetic test could be administered as a group test.¹⁶

Autokinesis and Its Relation to Personality. In 1941, Albert Voth reported a test-retest correlation of +0.96 for individuals tested individually and a correlation of +0.75 for individuals tested in groups. He also reported that individuals with zero or low autokinesis claimed a sense of orientation and a general sensitivity to all kinds of extraneous objects and occurrences. Those with relatively high indices seldom claimed they were disturbed by, or aware of, outside occurrences.¹⁷

In 1947, Albert Voth, the individual who appears to have done the most research on autokinesis, also found that state hospital patients who had a diagnosis of alcoholism, hysteria, involuntional melancholia, manic-depressive

¹⁵W. F. Stone, "Autokinetic Norms: An Experimental Analysis," Journal of Personality and Social Psychology, 1967, 5 (1), 76-81.

¹⁶R. W. Gardner and L. J. Lohrenz, "Some Old and New Group Tests For the Study of Cognitive Controls and Intellectual Abilities," Perceptual and Motor Skills, 1969; 29, 935-950.

¹⁷A. Voth, "Individual Differences In The Auto-kinetic Phenomenon," Journal of Experimental Psychology, 1941, 29 (4), 306-322.

psychosis, paranoid conditions and psychopathic personality, usually reported little or no movement of light. Those patients who had a diagnosis of schizophrenia, obsessional neurosis, or anxiety neurosis reported fairly extensive movement.¹⁸

A retest of this hypothesis was done by Sexton who tested fifty state hospital patients who had been diagnosed as schizophrenic by unanimous vote of the hospital staff. The results corroborated Voth's. Catatonics saw maximum movement and paranoids saw the least. Sexton also found a reduction in the amount of movement in improved cases when the patients were retested.¹⁹

A study which was published in 1960 by Schwartz and Shagass did not confirm Voth's report of a relationship between autokinesis and disorders. Patients with different disorders were tested and the results were not the same as what was predicted from Voth's report. The authors stated, however, that the discrepancy was possibly due to difficulty with the definitions of the disorders and diagnoses.²⁰

¹⁸A. C. Voth, "An Experimental Study of Mental Patients Through The Autokinetic Phenomenon," American Journal of Psychiatry, 1947, 103, 793-805.

¹⁹M. C. Sexton, "Autokinetic Test: Its Value in Psychiatric Diagnosis and Prognosis," American Journal of Psychiatry, 1945, 102, 399-402.

²⁰M. Schwartz and C. Shagass, "Note on the Relation Between Autokinesis and Psychiatric Diagnosis," Perceptual and Motor Skills, 1960, 11, 253-257.

During the 1960's, both Harold Voth and Albert Voth did extensive research on autokinesis along with some of their contemporaries. In 1962, Harold Voth wrote:

Because of the fruitfulness of our deductions and because of the actual correlations between normal and abnormal behavior with the autokinetic phenomenon, it appears that this phenomenon is the most direct expression of the ego principle of personality organization.²¹

Statistically significant correlations were found between autokinesis and the personality styles, defenses and syndromes which they believed were also a function of the personality principle.²² In the same year, Harold Voth also confirmed three hypotheses he had made concerning recovery from psychosis. The first was that individuals in the mid-range of the ego-closeness--ego-distance continuum recover from mental illness more rapidly than patients at either end. The second was that ego-distant subjects, (those reporting varying degrees of autokinetic movement) whose autokinetic movement is reduced following a course of somatotherapy, should show better clinical improvement than those who do not have a reduction in autokinetic movement. The third hypothesis was that a diminution of ego-closeness should correlate positively with recovery from psychosis.

²¹H. M. Voth, "Choice of Illness," Archives of General Psychiatry, 1962, 6, 152.

²²Ibid., pp. 149-156.

²³H. M. Voth, "Ego Autonomy, Autokinesis and Recovery From Psychosis," Archives of General Psychiatry, 1962, 6, 288-293.

In 1963, Voth and Mayman explained a difference in relation to reality between individuals who experience little or no autokinesis and those who experience extensive autokinesis, namely that the former are "more reality-bound, less prone to lose touch with their immediate surroundings, including the obvious fact that the light is stationary"²⁴ while the latter seem in contrast much less fixed in relation to reality, and may become so engrossed in the light as to become oblivious of, and partially disassociated from, their immediate surroundings during the test."²⁵ Voth and Mayman explained further what they would expect as a style of life from these two types of individuals. The ego-distant individuals were more able to withdraw from their surroundings and turned their attention inward. Fantasy and reflection were easier for these individuals. "Values, long-range goals, and their sense of identity were less subject to direct influence by social pressures, the values of other individuals, distracting events, etc."²⁶ Solitude was more acceptable to this individual than to an ego-close individual and his self-esteem was based more on inner feelings and individual values than on external responses to him. The ego-close individual was seen as more

²⁴H. M. Voth and M. Mayman, "A Dimension of Personality Organization," Archives of General Psychiatry, 1963, 8, 367.

²⁵Ibid.

²⁶Ibid.

responsive to others and more dependent on them for values, self-esteem and pleasure. They were more socially graceful and were more striking in their appearance. They usually were seen to be less autonomous and more willing to compromise in order to consolidate social ties.²⁷

In another study, Voth and Mayman reported on differences in response to psychotherapy between ego-close and ego-distant patients. Ego-close patients projected or externalized the basis of their problems more often than ego-distant patients. Ego-distant patients found introspection easier, while ego-close individuals relied on clarification, suggestion, confrontation and guidance. The ego-close individual experienced transference more rapidly than the ego-distant individual but was not as able to understand the implications involved. Ego-close patients did more acting out and were less stable in situational stress, but they were more responsive in a wide range of situations. Ego-distant patients usually improved through insight into the problems and causes while ego-close patients usually improved through some variation of imitating the therapist or relying on him for support. Based on these results as well as further investigation of their hypotheses, Voth and Mayman recommended the autokinetic test as a

²⁷Ibid., pp. 366-380.

diagnostic tool for establishing formal diagnoses.²⁸

In 1965, Albert Voth published the results of an investigation which indicated a relationship between autokinesis and alcoholism. In this investigation, Voth found that alcoholics had significantly lower autokinetic scores than normal subjects. Voth suggested that the scores indicated a basic ego-structure difference. Persons with high autokinetic scores have been shown to exhibit greater ego autonomy, while those with low scores seemed to share some characteristics with alcoholics. These characteristics were: suggestibility, responsiveness to external stimuli, exhibitionism, social activeness, and emotional impulsiveness. Voth also suggested that mania or hypomania, depression, paranoia, or conversion symptoms were the usual kinds of disorders alcoholics developed and patients with these disorders tended to experience limited autokinesis. Few alcoholics showed schizophrenic reactions while schizophrenics saw more autokinetic movement than alcoholics.²⁹

In a 1968 article, Cancro, et.al. suggested the use of autokinesis to determine the need of the patient for psychological distance or closeness as part of his treatment. Elopers from an intensive individual treatment hospital were

²⁸H. M. Voth and M. Mayman, "The Psychotherapy Process and Its Relation to Ego-Closeness--Ego-Distance: Part One," The Journal of Nervous and Mental Disease, 1966, 143 (4), 324-337.

²⁹A. C. Voth, "Autokinesis and Alcoholism," Quarterly Journal of Studies on Alcohol, 1965, 26 (3), 412-422.

found to have significantly higher autokinetic scores than non-elopers. Elopers from a state hospital with minimum patient-doctor interaction had significantly lower autokinetic scores.³⁰

In 1969, Voth, et.al. presented data to support the hypothesis of a relationship between autokinesis and suicide. The results indicated that the individual who is ego-distant was less likely to commit suicide, although he might attempt it, than the ego-close individual.³¹

Summary. A review of literature related to autokinesis indicated that the phenomenon has been of interest to psychologists in the distant past as well as in the recent past. Although research has been extensive, standardized methods and procedures used in investigations were lacking and there have been few attempts to construct a comprehensive theory of the phenomenon. The most significant systematic investigations of autokinesis have been conducted by researchers from Menninger's; Harold Voth, Albert Voth, et.al. Although their findings have been impressive, a number of other researchers claimed to have found results

³⁰R. Cancro, H. M. Voth, and A. C. Voth, "Character Organization and the Style of Hospital Treatment," Archives of General Psychiatry, 1968, 19, 161-164.

³¹H. M. Voth, A. C. Voth and R. Cancro, "Suicidal Solution as a Function of Ego-Closeness--Ego-Distance," Archives of General Psychiatry, 1969, 21, 536-545.

which were in disagreement. Indications were that further research was needed to clarify and classify results into a system.

Positive Disintegration

A new outlook regarding mental illness has been growing. A review of literature related to this new outlook has indicated that previously unacceptable behavior has been accepted by some as behavior which was purposeful. Others have claimed that the cultural setting was important in determining the acceptance of such behavior as that typical of a schizophrenic reaction. Still others have suggested that such reactions were positive indications of potential personality growth.

There is mounting evidence that some of the most profound schizophrenic disorganizations are preludes to impressive reorganization and personality growth--not so much breakdown as breakthrough.³²

Mental Illness Related to Other Cultures. Acute schizophrenic behavior has been compared with the behavior of shamans in different primitive cultures. According to Silverman, shamans were "those inspirational medicine men who communicate directly with the spirits and who exhibit the most blatant forms of psychotic-like behaviors."³³ And

³²J. Silverman, "When Schizophrenia Helps," Psychology Today, 1970, 4(4), 63.

³³J. Silverman, "Shamans and Acute Schizophrenia," American Anthropologist, 1967, 69, 22.

in many primitive societies, shamanism alleviated the anxieties and fears related to the harsh conditions of life because it provided a contact with the spiritual world which controlled the people. A shaman was treated with respect when he acted in what our society would have considered a pathological manner. His behavior performed a function in his culture, whereas pathological behavior was viewed in an opposite manner in our society.

Similarities were found between the psychological backgrounds of our psychotics and other cultures' shamans. Bogoras, in 1909, claimed that the shamanistic call often came during some great misfortune, dangerous and protracted illness, or sudden loss of family or property. "Then the person, having no other sources, turns to the spirits and claims their assistance."³⁴ A basic premise accepted by such authors as Silverman, Bogoras and Boisen was that a psychotic individual in our culture acted no differently than any other individual who had also been over-sensitized by extreme and prolonged threat. Silverman suggested that what is encountered in schizophrenia and in shamanism "begins with a subjective evaluation of oneself as being incapable of exercising any effective control over a current life situation."³⁵

³⁴W. Bogoras, "The Chuckee," Memoirs of the American Museum of Natural History, 1909, 40, 421.

³⁵J. Silverman, "Shamans and Acute Schizophrenia," American Anthropologist, 1967, 69, 24.

Not only did the process undergone by psychotics and shamans begin with the same psychological process but it was contended that the process continued through, following a similar pattern. The main difference again was in the acceptance by the culture of the behavior. The shamanistic experience was often highly valued and rewarded, whereas the psychotic was rejected. This rejection added to the individual's original anxiety and guilt and if his behavior was a natural response to a life-crisis, the rejection also lowered his chances for resolution of his problems. His insights were not considered valid and if his previous life style lacked constructive factors there was little to come back to.³⁶

Based on research similar to this research on shamanism, at Agnews State Hospital in San Jose, California, Silverman and others started a psychotherapy program based on the premise that the schizophrenic reaction should be encouraged and supported. An attempt was made to determine which patients were schizophrenic and antipsychotic medication was withheld from them. Studies are being conducted to determine whether this approach based on encouragement and support is as successful as other types of psychotherapy. Results of this research are not yet available.

³⁶A. Boisen, The Exploration of the Inner World (New York: Harper, 1936).

The Concept of Mental Illness Questioned. In 1952, French published a book based on the idea that all behavior was integrated or based on a goal, even irrational behavior. "Freud taught us that every dream and every neurotic symptom represents the fulfillment of a wish."³⁷ Irrational behavior was not without goals; it was the product of a struggle between conflicting goals. There was a basic pattern of the integrative process, French claimed and all kinds of behavior, irrational as well as rational, were a variation of it. Conflict was seen to be a modifying influence on integrative behavior. It not only had a disintegrating effect but also helped achieve a more normal integrative pattern.³⁸

Szaz, in 1961, wrote, "(M)ental illness is a myth. Psychiatrists are not concerned with mental illnesses and their treatments. In actual practice they deal with personal, social and ethical problems in living."³⁹ Szaz contended that the idea of a person being mentally ill was harmful to society and the individual, especially in today's world. Personal responsibility was undermined when an external source, the person's illness, was blamed for his

³⁷T. French, The Integration of Behavior (Chicago: University of Chicago Press, 1952), p. 6.

³⁸Ibid.

³⁹T. Szaz, The Myth of Mental Illness (New York: Harper and Row, 1961), p. 276.

antisocial behavior. For the individual, this attitude precludes an inquiring, psychoanalytic approach to problems which symptoms at once hide and express.

Codifying every type of occurrence that takes place in a medical setting as, ipso facto, a medical problem makes about as much sense as suggesting that when physicists quarrel their argument constitutes a problem in physics.⁴⁰

Szaz suggested we all were students of human living and some needed a personal instructor whereas others did not. Psychology needed to offer this instruction instead of obscuring the problems at hand by making them something other than what they were.

Laing, who promoted the theory of schizophrenic reactions as natural and often necessary for personality development, would not use the term schizophrenia, to refer to a condition that was "mental rather than physical, or to an illness, like pneumonia, but to a label that some people pin on other people under certain social circumstances."⁴¹

Positive Aspects of Mental Illness. Dabrowski, in 1964, contended that personality was the aim of man's development and this development included basic stressful elements such as disequilibrium, maladaptation, nervousness, and psychoneurosis. This development was often based, therefore, on conflicts between what was 'higher' or 'lower' within an

⁴⁰Ibid.

⁴¹R. D. Laing, Politics of Experience (New York: Random House, Inc., 1967), p. 70.

individual and was manifested in the process of positive disintegration. A personality was shaped by incorporating conflicting, pathological elements such as suffering, depression, anxiety, obsession and symptoms of emotional immaturity into the process of development. The main tenet of his theory of positive disintegration was, instead of rejecting pathological elements, grafting them onto normal and accelerated development should be encouraged. In psychotherapy, development and mental health were emphasized rather than rehabilitation and removal of pathological symptoms.⁴²

Positive disintegration is, therefore, a process, which, in our opinion, is the fundamental process in the development of an individual. In order to leave the lower developmental level and pass to a higher one, the individual must go thru a greater or lesser disorganization of primitive structures and activities.⁴³

Disintegration, as opposed to integration, meant the loosening of structures and the dispersion and breaking up of psychic forces. It ranged from emotional disharmony to the complete fragmentation of the personality. According to Dabrowski, the normal person had achieved 'personality', maturity, responsibility and integrity. The neurotic, rather

⁴²K. Dabrowski, Personality-Shaping Through Positive Disintegration (Boston: Little, Brown and Co., 1967), pp. 131-138.

⁴³Ibid., p. 131.

than overachieving these attributes, had not yet achieved them but had the potential to do so.⁴⁴

Dabrowski believed that not only was integration necessary for development, but accelerated development could not be realized without manifest nervousness and psychoneurosis. Dabrowski found observations and clinical experience to provide a basis for his theory. Psychological examinations of normal children in Warsaw public schools had shown that about eighty per cent of the children who were above average in intelligence had different symptoms of nervousness and slight neurosis. Dabrowski regarded this as evidence that psychiatric symptoms were frequent in children who had a high potential for development. Dabrowski also pointed out that in normal development the greatest personality growth occurred during the periods of the greatest psychological upheaval and in highly creative persons, psychological disharmony was often present and related to their creativity. Dabrowski cited several case studies of creative individuals which corroborated this claim. Psychotic episodes were experienced by such individuals as Michelangelo, Dostoevski, Kafka and Gandi.⁴⁵

A criticism of and addition to Dabrowski's theory of

⁴⁴K. Dabrowski, Personality-Shaping Through Positive Disintegration (Boston: Little, Brown and Co., 1967), pp. 11-23.

⁴⁵Ibid.

positive disintegration was given by Mowrer in his introduction to Dabrowski's 1967 book. Mowrer disagreed with the distinction between positive and negative disintegration and thought it confusing. Conflict to him was, it itself, neutral. "The positivity or negativity . . . lies rather, it would seem, in the nature of the response thereto, the manner in which the conflict is resolved."⁴⁶ A neurotic or morbid solution to a conflict was trying to ease the pain rather than let the pain motivate one to grow and develop as the situation demanded. Mowrer went further and suggested that some professional therapy was negative also in that it tried to relieve the individual's suffering in some artificial rather than natural way. It often tried to simply make the individual more comfortable without resolution of the situation.⁴⁷

Summary. Theories of personality have accounted for mentally ill behavior in many different ways. A relatively new theory which has been growing in acceptance has offered a significantly different interpretation of this behavior. Mentally ill behavior was seen as a process of development, necessary for an individual to reach higher levels and the new theory claimed this behavior should be supported rather

⁴⁶H. Mowrer, "Introduction to Personality-Shaping Through Positive Disintegration" (Boston: Little Brown and Co., 1967).

⁴⁷Ibid.

than punished or discouraged by rejection because it might be a searching for answers rather than an escape.

Chapter 3

PROCEDURE

Research has indicated that a patient's response to therapy was related to the autokinetic phenomenon.¹ The present study used the autokinetic test along with questionnaires reflecting the hospital staff's, as well as the patient's, prognostic expectations, to determine if any relationship existed between these measures.

Pilot Study

A pilot study was conducted using thirty college freshmen students as subjects to insure familiarity with the test and eliminate problems in testing. The testing situation was the same as that used in the experimental situation. Research has indicated that normal, nonhospitalized individuals as a group experienced more autokinesis than hospitalized patients.² A comparison between the results of the pilot study and the experiment showed the expected difference.

¹H. Voth and M. Mayman, "The Psychotherapy Process and Its Relation to Ego-Closeness--Ego-Distance: Part One," The Journal of Nervous and Mental Disease, 1966, 143(4), 324-337.

²H. Voth, A. Voth, and R. Cancro, "Suicidal Solution as a Function of Ego-Closeness--Ego-Distance," Archives of General Psychiatry, 1969, 21, 538.

Subjects

The subjects used in the study were patients at Osawatomie State Hospital in Osawatomie, Kansas. The subjects were randomly selected from those patients between twenty and forty years of age. The total number of subjects was fifty-three and these were the first patients selected who were able to take the test and were willing to participate. Seven patients were unable or refused to take the test. The fifty-three subjects were given the autokinetic test, rated by the hospital staff, and rated by themselves for prognostic expectations.

Description of Tasks

The patients were given the group autokinetic test following the procedure used by Gardner and Lohrenz³ which was based on the individual autokinetic test developed by Albert Voth. The patients were seated with a twenty-two by twenty-eight inch sheet of paper in front of them. The paper was attached to a drawing board and lying on a table. The experimental condition lasted ten minutes and the range of distance from the light was 9.1 to 30.7 feet. The light was a stationary pinpoint of white light 0.0006 ft. candles in intensity.

The subjects were told that they would be left

³R. Gardner and L. Lohrenz, "Some Old and New Group Tests For the Study of Cognitive Controls and Intellectual Abilities," Perceptual and Motor Skills, 1969, 29, 935-950.

alone in a totally darkened room, except for the pinpoint of light, for ten minutes and that they were to look steadily at the light during the entire test period and remain silent. They were told that the light might or might not appear to move, and should it move, they were to trace its path on the paper before them. If the light stopped moving, they were to make a small dot and leave their pencil there, ready to resume tracing the movement if the light started moving again. Should the pencil reach the edge of the board, they were to start again from the approximate center and proceed as before. The room was not darkened when the instructions were given and discerning subjects would be able to tell that the light was actually a stationary one. No suggestion was given that the light would move, subjects were merely told that it might or might not appear to move.

To determine whether the patient was in the short-term prognosis group or not, questionnaires were filled out by three members of the hospital staff who worked with the patients and by the patient himself. Three members of the hospital staff were asked to rate the patients and the average of their results were used to eliminate variables related to staff bias.

Evaluation of Responses

The length of the line score was obtained by measuring, in inches, the length of line drawn representing

autokinesis. The autokinetic index was calculated as follows: $\frac{L \times ME \times D}{S + 1}$ where L = length of line drawn in inches, ME = the distance between the two furthestmost points on the pattern drawn, D = the greatest distance from center, and S = number of recorded stops.⁴ An index score of zero thru nine was considered low, ten thru thirty-five was moderate, and a score over thirty-five was high.

The questionnaires were composed of three questions, different ones being used for the staff and patients. (See Appendix A and B) The questions and answers were constructed to allow a quantified result to be obtained. If a patient was expected to show some decline he was given one point, whereas if he was expected to show a great deal of improvement in a short time he was given four points. Each answer was given a predetermined number of points which could be totaled. For example if a patient was expected to remain about the same, stay in the hospital over a year, and go to a supervised nursing home when he left the hospital he would have a score of five.

⁴H. Voth and M. Mayman, "A Dimension of Personality Organization," Archives of General Psychiatry, 1963, 8, 366-380.

Chapter 4

RESULTS

Analysis of results were in two parts, the first based on the patients' prognosis and the second based on the hospital staff's prognosis.

Patients' Prognosis

Table 1, below, shows the number of patients who were in the short-term prognostic group, long-term prognostic group and the amount of autokinesis they experienced. A chi-square value was found which indicated that the prognostic groups differed significantly at the .05 level in the amount of autokinesis experienced.

Table 1

Prognostic Groups Based on Patients' Prognosis
and Amount of Autokinesis Experienced

	Low Autokinesis	Moderate Autokinesis	High Autokinesis
Short-term Prognosis	10	6	10
Long-term Prognosis	18	6	3

$$\chi^2 = 6.3; \text{df} = 2; p. < .05$$

Staff's Prognosis

Table 2, below, again indicates the number of patients who were in the short-term prognostic group, long-term prognostic group and the amount of autokinesis they experienced. A chi-square value was found which indicated that the prognostic groups differed significantly at the .05 level in the amount of autokinesis experienced.

Table 2

Prognostic Groups Based on Staff's Prognosis
and Amount of Autokinesis Experienced

	Low Autokinesis	Moderate Autokinesis	High Autokinesis
Short-term Prognosis	11	7	9
Long-term Prognosis	17	5	4

$\chi^2 = 6.91; df = 2; p. < .05$

Chapter 5

CONCLUSIONS, RECOMMENDATIONS, AND SUMMARY

Conclusions and recommendations from the present study are presented followed by the summary.

CONCLUSIONS AND RECOMMENDATIONS

It was concluded that a significant relationship existed between amount of autokinesis experienced by the patients and their confidence in early release from hospitalization. It was also concluded that there was a significant relationship between the amount of autokinesis experienced by the patients and the confidence the hospital staff had in the patient's prognosis. A general inspection of data indicated that the patients who were considered short-term, both by themselves and the staff, experienced a fairly well distributed amount of autokinesis; however, the patients who were considered to be long-term both by themselves and the staff showed a strong tendency to see little autokinesis. In the long-term prognostic group, based on patients' ratings, there were twice as many patients who experienced a low amount of autokinesis as the combined number of patients in this prognostic group who experienced a moderate or high amount of autokinesis. The hospital

staff also rated approximately twice as many patients long-term who experienced low autokinesis as the combined number of patients rated long-term who experienced moderate or low autokinesis.

The low autokinetic score of the patients in the long-term prognostic groups was expected. Individuals with low autokinetic scores tended to indicate less understanding of their situation and look to others for their values and beliefs. Their lack of understanding and failure to attempt an understanding of the situation could play a role in the lack of confidence the hospital staff had in their release. The staff's lack of confidence could be the basis for the patients lack of confidence.

The distributed amount of autokinesis seen by patients in the short-term prognostic groups could also be tentatively explained as related to stage of recovery from mental illness. Research has indicated that patients with autokinetic scores in the mid-range tended to recover from mental illness more rapidly than patients with scores at the extremes. Research has also indicated that, although autokinetic scores were basically stable for individuals, patients with high autokinetic scores tended to see less movement as they recovered. These patients with high autokinetic scores who were in the short-term prognostic groups may have been on their way to recovery.

The patients in the short-term prognostic groups with low autokinetic scores may have been patients who had

recovered from mental illness through support of the therapist rather than through insight into their situation. The length of time for recovery was not a variable in this study, so it is not known if patients with low autokinetic scores improved as rapidly as patients with scores in the mid-range. A low autokinetic score should not be taken as a negative prognostic sign but rather used as a guide in understanding individual patient's outlooks and the type of therapy the individual patient needs.

Examination of the results also show that in the group of patients who experienced high autokinesis, over three times as many rated themselves as short-term rather than as long-term. Over twice as many patients who experienced high autokinesis were rated by the hospital staff as short-term than as long-term.

The present study revealed two areas in which recommendations are made. The first recommendation is made concerning the agreement between expectations of patients and hospital staff. It is recommended that further investigations be conducted concerning possible relationships between these agreements and attitude toward and/or treatment of patients by staff. Determination could be made if patients who lack the hospital staff's confidence in their recovery are being encouraged to have this same lack of confidence and adjust to their hospital status.

The second recommendation is made with regard to further use of the autokinetic phenomenon related to the

theory of positive disintegration. In the present study, patients who saw extensive movement also usually gave themselves a short-term prognosis. It is recommended that further investigations be conducted re-testing this relationship and also a follow-up study on these patients relating autokinesis to types of therapy, reaction to therapy, and length of hospitalization.

SUMMARY

Review of literature indicated various theories regarding explanations of autokinesis and its causes. Differences were also found regarding the effects of variables such as sex of subject, sex of experimenter, suggestion of movement, and length of dark adaptation. The amount of autokinesis seen was found to be relatively unaffected by time. Different methods have been used for recording the movement and scoring it. Autokinesis has been found to be related to personality types as well as psychological disorders and reactions to psychotherapy.

Review of a second area of literature indicated a growing acceptance of the theory that mentally ill behavior has the potential of resulting in personality growth and development. Not only does it have such a potential, but by some, it was seen as necessary for an individual to reach higher levels of personality development. Behavior which, in our culture has been considered unacceptable, was shown to be respected and encouraged in other cultures.

Fifty-three state hospital patients were given the autokinetic test and rated for prognostic expectations by the hospital staff and by themselves.

Findings were as follows: (1) a significant difference was found between amount of autokinesis seen by patients who gave themselves a long-term prognosis and those who gave themselves a short-term prognosis; and (2) a significant difference was found between amount of autokinesis seen by patients who were rated by the hospital staff as long-term and those rated as short-term.

It was concluded that a relationship existed between amount of autokinesis experienced by the patients and their confidence in early release from hospitalization. It was also concluded that there was a relationship between amount of autokinesis experienced by the patients and the hospital staff's confidence in their release.

Recommendations for further studies focused on (1) agreement between prognostic expectations of patients and hospital staff; and (2) follow-up studies on patients who reported high autokinetic movement and short-term prognosis.

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APPENDIX

APPENDIX A

Questionnaire--Staff

Patient's Name _____

Ward _____

Name of Staff Rater _____

Position of Staff Rater _____

Date _____

Please check the answer which is most nearly correct.

I. Overall Potentiality

1. can be expected to get much worse each year
 2. show some decline
 3. remain about the same
 4. show some improvement
 5. show a good deal of improvement each year
 6. show a great deal of improvement in a short time

II. Estimated Length of Stay

1. over a year
 2. six months to a year
 3. two months to six months
 4. less than sixty days

III. Most likely Way of Leaving

1. do as well here as any other place
 2. supervised nursing home
 3. another institution
 4. manage on his own with some help
 5. manage on his own

APPENDIX B

Questionnaire--Patient

Name _____

Date _____

Age _____ Sex _____

Hospital _____

Please check the answer which is most nearly correct

I. I expect

1. to show some decline
 2. to remain about the same
 3. to show some improvement each year
 4. to show a great deal of improvement in a short time

II. I expect to stay in this hospital

1. over a year
 2. six months to a year
 3. two months to six months
 4. less than sixty days

III. After I leave the hospital I expect to

1. do as well here as any other place
 2. go to another institution
 3. go to a supervised nursing home
 4. manage on my own with some help
 5. manage on my own