CAUSE OF BLINDNESS AND ITS IMPACT ON ADJUSTMENT

by

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Introduction

Blindness, sustained in adulthood (adventitious), entails severe physical and psychological losses, that create a variety of insecurities. The individual experiences not only the loss of an organ, but also the loss of his accustomed inner picture of his physical and psychological self. The attitudes and beliefs associated with blindness seriously interfere with rehabilitative efforts. The present study will undertake the examination of different types of blindness and their effects on adjustment.

Attitude Toward Blindness

Cole and Taboroff (1955) noted that throughout history visually disabled persons have consistently been socially isolated from others. In some primitive populations, they were discarded in a "survival of the fittest" policy, until the development of Christian civilization, when they were hidden away in institutions where little more than custodial care was offered. Traditionally, the blind have been regarded as an economic liability; therefore, they were almost completely ignored (Cutsforth, 1966). The most common stereotype is that of the "blind beggar" who is dependent on the generosity of others, since it was believed that he was unable to care for himself. Darkness (the absence of light), has always been considered a symbol of evil, ugliness, and gloom. Thus, this disability has often been mistakenly believed to have resulted as a punishment for sins, an affliction of the damned (Cholden, 1954, Cowen et al, 1961). Hence, there are negative values associated with blindness that are imposed by society (Myerson, 1930). The individual who suddenly loses his sight is likely to have previously incorporated these attitudes, and upon

becoming blind directs toward himself those same devaluing attitudes. The reactions of people to him as an object of pity, a person of lesser or inferior status, in essence, a minority group member, may change his social position (Lowenfeld, 1950, Bauman, 1954, Chevigny, 1950).

Self-concept changes are also likely to occur. He no longer may perceive himself as a whole person; but in his mind, is rendered "incomplete," "damaged," and "maimed" (Carroll, 1961). How he is treated and his self-perception alters his aspirations as well. Thus, besides the physical limitations in acquiring knowledge, in performing everyday tasks with ease, in traveling, and in controlling the environment, there is also the loss of personal acceptance, of human dignity, of anonymity, of job opportunity, and of physical independence (Carroll, 1961).

There is widespread agreement that all who sustain a loss of vision experience the above feelings. According to Cholden (1953, 1954), the person first withdraws into a state of shock or emotional anaesthesia. Soon after, he has some conscious awareness that he has become a different person; a blind person who can no longer eat or walk or read automatically as he did before, on his own, without assistance, but must turn to others for help for even his smallest requirements. In a sense, he is returned to the state of infantile dependence. Thus begins his period of grief and mourning, not only for his dead eyes, but for his death as a sighted person, as well. Yet, all those who become blind do not cope with the daily circumstances of their lives in the same manner. While there are substantial individual differences in the way a person deals with the mourning period, both personality characteristics and the nature of the trauma (Young, 1962, Bauman, 1954) play a major role in how he handles the

adjustments he must make.

Adjustment to Blindness

Adjustment to blindness entails: (1) acceptance of the realistic restrictions imposed by blindness; (2) awareness of inner resources and a willingness to use them; (3) efforts to relearn and/or acquire substitute skills to enable him to carry out necessary life activities. If he becomes capable again of resuming his former position in the home and society, of achieving economic and social adequacy, he is classified as adjusted (Carroll, 1961, Lowenfeld, 1950, Proctor, 1946).

In previous research on adjustment to blindness, the techniques utilized to measure such adaptation[1] have included depth interview, systematic observation, longitudinal focus, and projective assessment, but the most common orientation has been the relation of the blind person to the environment around him, rather than his relative standing on a particular test. Most of the investigations which have been done have selected populations from rehabilitation training centers for the blind for study (Bauman, 1954, Diamond and Ross, 1945, Veteran's Administration, 1958). This choice is determined by the ready availability of subjects in one central location where medical, and psychological records are on hand for consultation, and where the effects of training may reveal material about the nature of the adjustment process over a specified time period. Wittkower and Davenport (1945) studied the reactions of war-blinded soldiers in a rehabilitation training center and reported that previous personality, the

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[1] adjustment and adaptation are used interchangeably to refer to the same process

environment (hospital, battlefield), the social situations (how family and friends respond), the occupational situation, and time (recency of loss) are the five main factors.

Wittkower and Davenport's study (1945) included only men. However, when both males and females comprise the subjects of study, there is no uniformity of opinion as to whether the sex of a blind person serves as asset or liability. Both Brown (1939) and Anastasi (1958) found men adjusted better, while Sommers (1944) and Bauman's (1954) research concluded that women were more successful in coping. The latter, explained her findings by reasoning that the restrictions on behavior imposed by blindness may be absorbed more easily and create less conflict within the social roles considered appropriate for women.

Age at Onset as an Adjustment Factor

Age at onset is another variable which can affect adjustment. The later in life blindness occurs, the more difficult it is to cope with, because an individual is more set, has more characteristic and habitual ways of reacting, and is less flexible in dealing with new circumstances. The younger he is, the nearer in time to when he was dependent upon others for assistance and guidance, the more receptive he will be to returning temporarily to the role of the pupil to learn the necessary new ways of managing his environment. However, though most researchers agree that this holds true in general, it is not a linear relationship. If the onset of blindness takes place after age 65 along with other medical complications of aging, when employment may already have terminated, and activities have been curtailed, it is less devastating, and calls for less of a reorganization, than would its occurence in the middle years.

Degree of Visual Loss

Degree of visual loss has been given an important place in the literature. Since legal blindness encompasses a wide range of loss of sight, from 20/200 in the better eye after best correction, to the total absence of light perception, it would seem natural to assume that adjustment might be affected by the amount of loss to which one must accomodate. A check of investigations conducted along these lines reveals that totally blind individuals were better adjusted than those who had some degree of remaining vision, however small. The latter, in fact, showed considerable problems and difficulties despite being less physically removed from their environment than those who have no perception of any kind (U.S. Veteran's Administration, 1958, Morgan, 1944, Brieland, 1950). A partial explanation for this phenomenon may be that they are psychologically more removed from their environment, facing something of an identity crisis, unable to fit in with sighted people, yet not feeling completely that they belong with the totally blind either (Cholden, 1954). On the other hand, Bauman (1954) demonstrated the existence of many personality and adjustment patterns for different individuals with the same degree of defective vision, and stated emphatically that it is not possible to predict the nature or quality of adjustment merely by knowing amount of loss.

Gradual vs. Sudden Loss

Levine (1960) writing of deafness (hearing loss) stated, "the trauma of...sudden loss...generates more intense struggles than...gradual pace of progressive impairment and...is more accessible to treatment." (pp. 71-72). She goes on to say that those with "sudden loss are psychologically more flexible than chronic cases who have, in the course of the

years, 'reached equilibrium,' although the latter experience is a less drastic sense of loss, it is a more warping one." (p. 72). In an attempt to apply this theory to blindness, Bauman (1954) writes that with gradual visual loss "the effort to see better, the strain of paying attention may be so unrewarding that frustration and depression are natural reactions." When comparing scores on a specially designed adjustment scale (the Emotional Factors Inventory) of individuals with sudden or gradual loss, she found no significant differences between the groups. Her conclusion was that "while major differences in emotional reaction may be evident at the time the visual loss takes place, these effects are not lasting, and years later, do not distinguish one group from the other."

Scores on intelligence tests, educational level, and socio-economic status have all been shown to correlate positively with adequacy of adaptation (Veteran's Administration, 1958, Bauman, 1954, Cowen et al, 1961). Although there are few statements made as to the relative importance of each of the above in determining adjustment, in general, most studies stress that attitude of others (particularly the family) and personality characteristics are the most significant factors.

The Role of the Family

In 1954, Bauman conducted an extensive adjustment study of 450 blind adults in a rehabilitation setting using groups roughly matched with respect to age, sex, intelligence, socio-economic and educational status. She utilized case records, structured interviews, agency staff assessments, and a variety of intellectual and personality testing. She found those rating highest had better familial relationships as defined by a greater communality of interest, higher mutual respect, and more sharing of common

problems. Similarly, a social work investigation at the Veteran's Administration in 1958 revealed that strong family ties constituted the most important predictor of adaption. They cited evidence indicating that adjustment is hampered by excess emotionality, oversupport, permissiveness, and pity which the blind encountered in their family.

Emotional Stability Prior to Blindness

Some researchers state that unique personality characteristics determine the way in which loss of sight is handled. They decry generalizations based on the previously mentioned external or situational factors, and reiterate that the meaning and emotional implications visual disability may hold for one individual may be totally different for another (Young, 1962). The way in which an individual learned to cope with his major life problems and emergencies before blindness largely determine his recovery capacity (Fitting, 1954). Theoretically based on the belief that early childhood experiences are regarded as essential in determining the future reaction of the person (rather than what takes place in adulthood), they cite studies such as Diamond and Ross (1945) with blinded soldiers that there was no common pattern of defense or coping which could be attributed to any of the above mentioned factors (Bauman, 1954). In fact, this project's conclusion was that those with a history of neurotic tendencies before blindness, showed neurotic adjustment following trauma.

It is assumed that how important a person's eyes were to his perception of himself, will have much to do with how he perceives his loss. If prior to disability his central values were physical beauty, strength, and skill, and these were the things upon which his security depended, his lack of sight (which prevents him from visually viewing himself, assessing

and enhancing his attractiveness or knowing how he is perceived by others, and performing with the same degree of effectiveness within specified time limits) will be viewed as a greater handicap, than it would for one of differing beliefs. There might be a tendency for lower self-regard, and adaptation might be impaired.

One who has relied on others throughout his life, who did not feel capable of making decisions will be expected to react quite differently from someone who has accepted responsibility for his actions and shows a high degree of independence in his approach to life. The former, may perhaps achieve some secondary gain from assuming the culturally accepted, passively dependent role of the blind, unable to make any adjustment.

If adapting means a return to a disagreeable job, to burdensome responsibilities of a family, or to threatening, unpleasant interpersonal relationships, the blinded person may prefer remaining immobile (Kind, 1962). Further, some people are, by reason of ego-strength, better prepared than others to meet situations involving suffering and loss, and to handle misfortune, and would, therefore, probably deal with the trauma more successfully (Garrett, 1962).

Patterns of Retreat and Compensation

In his writings, Cutsforth (1952) described two patterns of reaction to severe loss which would permit the affected individual to "establish ego-importance" (p. 176) and regain his security and self-assurance. The first, he called the Pattern of Compensation, and the person who adopts it develops along the lines of the compulsive personality, attempting to prove to himself and the group around him that no inadequacy exists. He becomes competitive, has a need for mastery and control, tries

always to be well prepared for any situation he encounters to insure success, and externalizes his failures should they occur. The social world tends to approve and exploit this directly assertive/aggressive posture, because it frequently leads to achievement.

The second adaptation, the Pattern of Retreat, characterizes the person who attempts to resolve his tensions from the experience of the loss and the anger it produces, by withdrawing. He accepts his feelings of inadequacy as a correct evaluation of his ego-importance, and, as a result, becomes depressed. He then proceeds to establish security and approval by a regressive route of dependence, docility, and compliance, seeking protection, while feeling hostile underneath. Rigidity develops, as do hysterical mechanisms, and a passive-aggressive orientation. The latter approach prevents the self from feeling and directly expressing the "natural, normal irritations, resentments and furies which are produced by failure of accomplishment" in one who has experienced severe loss. Such a person may be reinforced in his behavior by his social world if he is rewarded for his passivity by having others assume responsibility for him, and having fewer demands and expectations made of him. Cutsforth (1952) believed that the behavior of any one subject to such a loss is dominated by one of these patterns.

Nature of the Trauma

Blindness has no single cause, and, in fact, results from many diverse circumstances. To what extent does an individual develop specific patterns of reaction as a result of the causative agent (i.e. eye disease) which then determines whether and how he adjusts to visual loss? This is the problem to which the proposed study will address itself.

Several investigations between physical condition and personality have reached contradictory conclusions.

Barker, Gonick and Wright (1964) stated, "there is no evidence of a relationship between the kind of physical disability and the kind of adjustment behavior; within a wide range of physical disabilities, the behavior results do not differ." Tobias, Lowenthal, Belmont and Wright (1960) remark that personality variation is not correlated in any significant way with medical diagnosis. They go on to say that the manner in which people react does not differ in any systematic way as a function of the person's particular diagnosis, and, in fact, "personality variation is greater within than among categories." Bauman's (1954) results indicated no significant differences between well and poorly adjusted groups in either opthalmological diagnosis, etiology, or suddenness of visual loss. She concluded accordingly, "it is not these physical facts which make the difference between an individual's being self-supporting or dependent, socially accepted or a social misfit." However, her investigation compared the two groups on the basis of <u>whether</u> or not they made an adjustment to blindness, not on the basis of <u>how</u> that attempt was made and <u>if</u> there were similarities in <u>manner of adjustment</u>.

Berger and Zimet (1959) made an attempt to determine by systematic study whether individuals visually disabled by primary glaucoma evidenced traits or disturbances which differ qualitatively or quantitatively from those observed in people with other eye diseases. They observed no evidence for a particular personality pattern specific to glaucoma. Their data was obtained from a comparison of nineteen glaucomatous patients with sixteen who had non-glaucomatous disorders mated for age, sex, race,

socio-economic status and length of time of visual impairment. Subjects were given psychiatric interview, psychological testing and evaluated medically and for social history. Results revealed no significant differences from a sociological and psychiatric standpoint between the groups. They concluded that glaucoma occurs in people of very diverse personality make-up. Their results would appear to confirm the thinking of Barker et al (1964) and Tobias et al (1960). However, it should be noted that the purpose of the investigation was to study the role of emotional factors in eye disease, to assess whether a particular type of personality make-up predisposes one to develop glaucoma (the psychological influencing the physical), not whether once having been afflicted with the disease one develops specific characteristics (the physical influencing the psychological). The present study proposes to do the latter.

On the other hand, Ripley and Wolff (1960), Piers (1948), Hibbeler (1947), and Miller (1952) described typical qualities and maladjustive features which characterize those with glaucoma. These latter, include compulsivity, overconscientiousness. None of these investigators utilized satisfactory control groups. Thus, there is lack of clarity surrounding the problem of whether the nature of the trauma gives rise to specific types of response.

Blindness is a physical condition which may occur not only by itself, but also as part of another physical disorder or complication of it. It would, therefore, seem likely that as one component of a complex syndrome, personality characteristics would be affected by the overall systemic effect of the disease rather than by the singular factor of blindness. Barker, Gonick and Wright (1964) do allow for the possibility that

disabilities which require a "very special way of living or unique treatment over a long period of time, give rise to unique adjustments" (p. 5).

Blindness Resulting from Diabetes

One of the major causes of blindness, Diabetes Mellitus, a disorder due to metabolic defect (thought to be inherited) associated with impaired production and/or release of insulin, requires both a special way of living and unique treatment over a period of time. Hence, it necessitates unique adjustments and might be expected to produce characteristic ways of responding. Not all diabetics lose their vision, but of those who do, 95% die within 13 years of the onset of blindness (Rogot, 1965) and the average life-span following blindness is 5.8 years (Barkow et al, 1965). Thus, the latter, signals a severly deteriorating physical condition and very limited survival.

Clinical investigators have, up to now, found no evidence to indicate a uniform personality structure in diabetics in general (Noyes and Kolb, 1958), or in the blind diabetic in particular (Freedman, 1969). However, the nature of the illness, necessitating constant attention to health, dietary restrictions, curtailment of activities and social participations, would appear to foster an adjustment to being sick, to dependence, and helplessness. The diabetic must visit his doctor with regularity, his energy level fluctuates, he does not recover easily from what for others are relatively minor ailments, all of which induce concern and provoke uncertainty about his future ability to survive (Freedman, 1969). There is severe limitation on his food intake; he loses the freedom to gratify his hunger without penalty, the frustration of a basic satisfaction. He feels food is a poison, and if he eats he will be punished. The antidote

is insulin which must be administered repeatedly in injection form, resulting in questions regarding his physical attractiveness, because of cosmetic effect, and a sense of dependence on medication rather than his inner resources. Danger of child-bearing in the female, possible impotence in the male, create fears which may shape their roles.

Society, in the form of educational institutions, businesses, and camps, place limitations on the diabetic, often refusing job opportunities and placement, because they misunderstand the illness. The possible need to compromise on a career, to take into account his diabetes when making plans, increases the individual's feelings of non-acceptance and of being at the mercy of forces beyond his control, and further lowers his self-esteem. Reactions of the family (parents or spouses forbidding disruption of the prescribed regimen or chastising for small infractions) keep him feeling like a child, who must be watched over, make him feel deprived, arouse hostility, and encourage feelings of rejection and depression.

Denial is a frequently observed defense. The diabetic behaves as though he were indifferent to or oblivious of the real dangers of his illness, thereby permitting him to ward off his anxiety. If he is not sick and will not die, he can eat, and be accepted (Stearns, 1959). Additionally, though there is no universal agreement that strict control prevents such complications as visual loss (Geist, 1954), many doctors have counseled patients that following the prescribed medical routine eliminates such possibility. Thus if blindness occurs, guilt and the need for punishment follow, because the person blames himself for failing to take adequate care. A number of medical specialists have suggested a self-destructive component to the diabetic behavior (Stearns, 1959, Menninger, 1935). Shantz

(1962) in writing about those with severe chronic illness stated that they have an uncontrollable hostility inwardly or outwardly directed and feel their adult status is permanently and completely lost. Such defenses and reactions would seem to predispose the blind diabetic to resist physical and emotional well-being, and hinder his adaptation.

Because of external and internal pressures, the way in which he is treated, the threat of death if he asserts himself, the enforced dependency and the tendency for the environment to reinforce submissive, compliant behavior, the diabetic would seem prone to develop a Pattern of Retreat.

Blindness Due to Retinitis Pigmentosa

Retinitis Pigmentosa (RP), appears as a component of a number of pathologic syndromes, and is often present in members of families with congenital anomalies of the endocrine, musculoskeletal, genitourinary and central nervous systems. As such, it too, requires a special way of living, and would, therefore, "give rise to unique adjustments" (p. 5, Barker et al, 1964). The presence of RP personality characteristics are hypothesized to result in a predictable type of adaptation to blindness.

More specifically, Retinitis Pigmentosa is a hereditary degeneration and atrophy of the retina, a progressive disease that produces night blindness, blurred vision, and limits and constricts a person's visual field to what is directly in front of him. A person with this disorder has a condition for which there is no treatment, no way of predicting its course or the timing and extent of loss of sight, and which continues slowly to get worse (Young, 1962). Thus, he can exercise no control or preventive measures to arrest the blindness. As a consequence, it appears

likely that he may develop feelings of powerlessness, instability, lack of preparedness for and uncertainty about what is taking place around him, mistrust of his senses, and a sense of incompleteness.

A number of investigators who studied psychiatric patient populations noted that the emotional disorders most often seen in those with retinitis pigmentosa were characterized by paranoid systems (Wortis and Shaskan, 1939, Rebotan et al, 1962). Small and Desmarais' (1959) studied three generations of a family with a history of mental dysfunction and retinitis pigmentosa. They suggested symptomatology peculiar to this group included: nervousness, crying spells, sleep disturbances, and depression. Although the above-mentioned work was carried out only with severly disturbed, usually hospitalized individuals, non-psychiatric RP blinded may also, as a group, demonstrate common traits. Wortis and Shaskan (1939) described their surprise that nonmedically trained personnel were able to distinguish those with this type of blindness without prior knowledge by the associated behavior they observed. These workers in agencies for the blind reported a very high incidence of suspiciousness. Since an individual with RP cannot visually account for much of his environment, is unsure of what he sees, feels his senses betray him, and does not have a consistent picture of his world, because it is ever-changing, a predominant suspiciousness and even paranoid-like tendencies, might be expected.

He is confined to familiar people and surroundings, because of travel restrictions, particularly at night. Hence, limitations on his social attainment are expected. In clinical contacts with RP individuals, bluffing is a frequently reported technique which is used to prevent others

from discovering how uncertain is their visual perception. An RP is anxious that he may be "found out," so he may restrict himself to what is known. Rationalizing is a common defense ("the glass was too near the table's edge," not, "I didn't see it"). If an RP is unsure what to expect, and responses to what he thinks he sees are inappropriate, and result in rejection, ridicule, or lowered self-regard, he will probably be less inclined to risk error and more inclined to withdraw when the next opportunity presents itself. Hence, caution in approach to people and situations is a predicted characteristic which may affect his adjustment. The problem is vividly illustrated by an anecdote reported by a client receiving rehabilitation services at the Lighthouse. He described an incident in which he approached what he thought was an attractive female in a dimly-lit discotheque. After asking for a dance, he was horrified to learn "she" was a "he" with long hair who misunderstood his intentions and made fun of him. The client said, "that's the last time I take chances." So, a person with this disorder is more likely to be (1) wary and guarded, careful, and even perfectionistic about what he does, so that his felt inadequacy will not be apparent; (2) to be ill at ease in new or previously unfamiliar circumstances; (3) to feel a strong need for mastery and control, and to adapt accordingly.

As retinitis pigmentosa progresses, the person's relationship with the external environment becomes more constricted, he feels cut-off and begins to fill in for the perceptual gaps which occur. This consequence of his visual condition would appear to lead to an adoption of the Pattern of Compensation described by Cutsforth (1952).

Blindness Caused by Traumatic Injury

The most frequently mentioned criticism of research into adjustment to blindness has been the lack of control groups of any kind. Repeatedly,

investigators have cautioned that results cannot be taken as conclusive, because there is no way of knowing whether these findings are simply a function of "all blind" or "all maladjusted" or "all aged." Although it is hypothesized that the nature of the circumstances which cause blindness (i.e. eye disease) is responsible for the development of specific predictable personality characteristics which directly aid or retard adjustment, the role and importance of other factors in determining adjustment is not discounted. Familial relationships, emotional stability prior to deteriorating vision, may contribute to adaptation, as well. In order to assess the relative contribution of these factors, a third and unique category of visual impairment with many different causes of blindness: specifically, traumatic injury, will be studied.

This group, because of the acuteness of onset, provided no prior opportunity to develop particular ways of adaptation. In each case, the trauma which caused blindness may be different (e.g. lye, industrial accident, war injury). Thus, we have an opportunity to compare adjustment reactions within the group and among the groups. The sole common bond of all those blinded in this manner is the suddenness with which it occurred, and the lack of preparedness. Since there are no outside pressures over time to choose one of the two patterns of reaction (Retreat or Compensation) considerable variability should be seen. As Lowenfeld (1950) observed, a person who experiences visual loss in this manner is apt to react in the same way as we expect other people in extreme situations and under extreme stress to do. There is a sudden change in the environment about which the person feels powerless to do anything. This is associated with painful emotions and a sense of psychological impotence. Bauman (1954), in her

research indicated that reaction patterns and the defenses vary with the individual's established means of dealing with emotional crisis. It is hypothesized that no general pattern will emerge from the group of traumatically injured blind; but those who, prior to visual loss functioned adequately will be able to make the necessary adjustments more readily than those who did not.

The motivation for the proposed current research comes from personal clinical observation of the role that eye disease plays in adjustment to blindness. The literature reports no conclusive findings, and, in fact, does little to address itself to this question. Previous investigations have concentrated mainly on children and the aged, and results cannot automatically be generalized to other groups or assumed to apply or be relevant to them. Thus, the present study will concern itself with the large, mostly neglected, adult blind population (those over 18, but under 65 years of age). Findings may contribute to our understanding of the nature of visual disability, and demonstrate the shortsightedness of an approach which classifies <u>all</u> blind as possessing the same characteristics and manner of adaptation to environmental circumstances. In addition, it could be of assistance to medical, psycho-social and rehabilitation personnel in preparing the individual and his family to deal with blindness, and tailoring such program services as are offered in various settings to insure that they better meet the needs of the people for whom they are designed.

Hypotheses

When eye disease leading to blindness develops over a long period of time, the experiences of the person lead to the development of specific patterns of reaction. These are identifiable personality characteristics which, in part, determine the kind of adjustment made to blindness. Differences in adjustment among all three groups -- diabetes, retinitis pigmentosa, and traumatic injury are hypothesized.

Hypothesis A: Diabetics develop a Pattern of Retreat which retards their adjustment to blindness. The Pattern of Retreat is characterized by Passivity, Depression, Feelings of Inadequacy, Compliance, Docility, Repressed Hostility and Guilt, Withdrawal and Hysteria. This group will manifest a greater degree of each of these traits than the other groups.

Hypothesis B: Those with Retinitis Pigmentosa develop a Pattern of Compensation which assists their adjustment. The Pattern of Compensation is characterized by Assertiveness, Externalization, Overcompensation, Competitiveness, Need for Mastery and Control, Aggression, Achievement-Orientation, and Compulsivity. This group will manifest a greater degree of each of these traits than the other groups.

Hypothesis C: Individuals with Retinitis Pigmentosa will demonstrate better adjustment to blindness than will the Diabetic in terms of his independence in handling daily living tasks and mobility, attitude toward disability, and vocational readiness.

Hypothesis D: Since subjects in the Traumatically Injured Group will not have had the common experience associated with a gradual onset of blindness, they will show no uniform pattern as an entity. Greater variability is hypothesized within this group than within the other groups, because the causes of blindness tend to be different for each individual.

Hypothesis E: Diabetics tend to deny their disability and the limitations it may place on them. Thus, they view themselves more unrealistically than those with Retinitis Pigmentosa and the Traumatically Injured in terms of their adjustment to blindness. There will be a greater discrepancy for the Diabetic between self-report and the report of others in the direction of overestimation of adjustment.

Definition of Terms

Adjustment - As previously defined, adjustment involves utilizing one's resources in acquiring those skills necessary to permit one to carry out the functions of every day living necessary to his existence, and achieving economic and social adequacy within the limitations imposed by blindness (Carroll, 1961, Proctor, 1946, Lowenfeld, 1950).

Based on the above, the three criteria which will be employed in the current research to measure adjustment will be:

Independence - A. self-sufficiency in carrying out daily routines.

B. mobility (the ability to get around physically from place to place).

According to Sawrey and Telford (Bauman, 1954), "whether or not one has a practical need to get some specific place (a job), the immediate limitations in mobility following the onset of blindness inevitably represents a serious source of frustration." (p. 117). This frustration should be greatly relieved by a procedure which safely and effectively leads to independent travel. Clearly, an individual's adjustment to blindness is in part defined by the degree to which his mobility or lack of it limits his ability to carry out functions of daily living.

2. Relative Freedom from Depression - the depressed person focuses on negative aspects of his condition -- not what he can do, but what he cannot. It is assumed, therefore, that he will be hampered in acquiring new techniques for living and not "accept the realistic restrictions imposed by blindness." (Carroll, 1961). As defined by Fitting (1954), adjustment implies being neither optimistic nor pessimistic, but having a realistic confidence in one's ability to cope with problems which he may encounter as a result of his difficulty. One who is seriously depressed is pessimistic, lacks confidence in his coping ability, and, thus, has not adapted positively to his visual loss.

3. Readiness for Vocational Functioning - (whether it be homemaking, school, or job placement). The inclusion of this factor as critical to adjustment is based partially on Palacio's (1963) findings when studying whether job success may be regarded as a measure of adaptation. She observed that the blind adult who achieved a certain level of social, economic, and vocational independence (indicated by his ability to hold a job in competitive industry) seemed more capable of organizing and experiencing the world. On the other hand, the unemployed individual seemed quite helpless and passive in experiencing the world. She concluded that this variable held considerable weight in determining the adequacy of adjustment.

Although a person is prepared for employment, and capable of assuming job responsibilities, the labor market may not be in a position to find work for all who seek it. Thus, one may not be employed, because of economic conditions or employer and community prejudice, and not lack of adjustment. The present research will, therefore, confine itself to the criteria of readiness. For those visually handicapped people who

were not employed prior to blindness (housewives or students, for example), adaptation is defined in terms of ability to return to and carry out their former routine.

Method

Subjects:

Individuals were selected from among adults who have within the last five years or who are currently receiving rehabilitation services at the Lighthouse, New York Association for the Blind.[2] They have either contacted the organization on their own or been referred by the state agency, New York State Commission for the Visually Handicapped. Those who have chosen to avail themselves of such services are positively motivated to acquire the substitute skills and make the necessary changes to enable independent functioning. Equal numbers of subjects were selected from among those blinded in adulthood by Retinitis Pigmentosa, Diabetes, or Traumatic Injury. The first twenty of the most recent clients who had completed rehabilitation were chosen. Among those excluded were those who did not meet age limits. At the time of selection all subjects were living.

Each group consisted of twenty male subjects over 18 (for a total of 60), but under 65 years of age. Although previous investigations have indicated sex may play a role in adaptation, the limited number of women participating in the program who have sustained visual loss due to the above conditions precluded their inclusion in equal numbers for comparison.

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[2]In New York City, once a person has been classified opthalmologically as blind, the doctor is required to register this information with the state agency. The latter, is in touch with the person through an assigned counselor who indicates the opportunity to obtain adjustment training in a rehabilitation facility, should he so desire. The counselors send people allegedly on a random basis (with only minor attention to geographical consideration) to the three major agencies in the city (Jewish Guild for the Blind, Industrial Home for the Blind, and Lighthouse).

Extent of visual disability may influence adjustment. Each group included individuals with varying degrees of blindness, as well as those totally without light perception. Educational accomplishment for each group ranged from grade school completion to possession of a master's degree. Verbal I.Q.'s as measured by the Wechsler Adult Intelligence Scale range from Average to Very Superior. Groups were equated for the following variables: work experience, socio-economic status (description listed in Appendix C), degree of blindness, marital status, and family characteristics. No significant differences between the groups with respect to age, IQ, education or months blind were obtained. (See Appendix C). Ages ranged from 20 to 65 with a mean of approximately 38, IQs ranged from 97 to 140 and an approximate mean of 121.5, schooling mean was above high school graduation, and months blind ranged from 6 to 48 with a mean of slightly above 16.

Assessment Procedures

Information on each subject's initial status was obtained from social history and psychological test results. Later adjustment was obtained at the end of the rehabilitation program (see Appendix A for description of the program) by behavioral observation achievements, self and family reports and an attitude scale. This multi-faceted approach reflects the internal as well as the external frame of reference of the blinded individual, and the significant others who have regular contact with him.

Prior to entrance into the rehabilitation program, the subject was evaluated by the social worker regarding his education, work history, family and other interpersonal relationships. A history of his emotional

stability prior to blindness, along with his reactions and those of others to him, since incurring visual impairment, were noted. In addition, he received a battery of psychological tests including measures of intelligence, achievement, aptitude, interest, and personality, and a comprehensive report was prepared.

Measurement of Patterns - Sentence Completion Test

The Lighthouse Sentence Completion Test was administered to each subject. This test is an adaptation of the Rohde-Hildreth Completion Test; thirty-six of the forty sentences are identical. Rohde's scoring system which analyses the sentences in terms of Murray's needs and presses was used. (See Appendix B).

In order to test the hypothesis that Diabetics develop a Pattern of Retreat as manifested by Passivity, Depression, Feelings of Inadequacy, Compliance, Docility, Repressed Hostility and Guilt, Withdrawal and Hysteria, the following scores obtained by the Sentence Completion were related to each trait:

Pattern of Retreat

Trait	Score
Passivity	Pass. - Passivity (inactive)
Depression	Dej. - Dejection (disappointment, depression, grief)
Feelings of Inadequacy	Inf. - Infavoidance (inferiority feelings)
Compliance	Def. - Deference (follow, cooperate, obey)
Docility	Aba. - Abasement (acquiesce, resign, accept insult, take blame)

Pattern of Retreat Continued

Trait	Score
Repressed Hostility - Guilt	Blam. - Blamavoidance (avoid blame by inhibiting anti-social impulses)
Withdrawal	Harm. - Harmavoidance (avoid, flee from danger, fear injury, illness, death, hide)
Hysterical	Suc. - Succorance (seek aid, protection, sympathy)

To test the hypothesis that those with Retinitis Pigmentosa develop a Pattern of Compensation as manifested by Assertiveness, Externalization, Overcompensation, Competitiveness, Need for Mastery and Control, Aggression, Achievement-Orientation, and Compulsivity, the following scores were obtained:

Pattern of Compensation

Trait	Score
Assertiveness	Aut. - Autonomy (free and iridependent, resist coercion and restraint)
Externalization	Dfd. - Defendance (disavow blame, justify misdeed or failure)
Overcompensation	Cnt./Ach. - Counteraction Achievement (overcome weakness, inferiority, timidity, by doing dreaded thing, increase effort)
Competitive	Rec. - Recognition (seek praise, appreciation, honor, fame)
Need for Mastery and Control	Dom. - Dominance (influence or control others or things)
Aggressive	Agg. - Aggression (belittle, blame, ridicule, curse others)

Pattern of Compensation Continued

Trait	Score
Achievement-Oriented	Ach. - Achievement (work intensely and persistently toward a goal)
Compulsive	Org. - Organization (organize material, put things in order)

Each of the above was scored for strength on the basis of frequency plus intensity. Frequency is obtained by counting the number of occurrences of the variable. Intensity is estimated on a one to three scale (one-low, two-medium, three-high). A validation study of 100 high school students (50 male, 50 female) yielded a correlation between interviews and tests of .79 for girls and .82 for boys. Agreement among four raters was found to be 95.5 percent when thirty-six sentence completion tests were scored, and 78 percent agreement was obtained among five judges when twelve pages were considered. In the present study, two independent judges did the scoring.

Measurement of Adjustment

In order to test the hypotheses dealing with adjustment to blindness, the following measures were utilized: (1) evaluation reports dealing with independence in carrying out daily activities; (2) peripatologist's reports rating independence in mobility; (3) observational data regarding return to community, job or school placement to determine vocational readiness; (4) an adjustment to blindness scale, self-report, and family or close associate report dealing with attitude toward disability.

Evaluation Reports

A rating sheet summary of each subject's capabilities, progress, and adjustment was prepared at the end of the rehabilitation program by the instructors in Techniques of Daily Living and Personal Management courses (see Appendix B). Each item was rated on a five-point scale, and the 19 item score was summed. Reliability of teacher ratings was obtained by having the instructors of the same subject area independently rate twenty individuals in rehabilitation training at the time, on the above-mentioned instrument in the categories provided. Using Kendall's Coefficient of Concordance (W) which measures the degree of agreement among the teachers, an uncorrected reliability coefficient of .88, and .82 after correction was obtained, which shows the instructors have been applying essentially the same standard to the qualities being ranked.

Peripathologist Reports (Cane Travel Specialist)

A five-point rating scale devised by the mobility department to assess the individual's progress in travel was prepared by the instructor at the program's end for each subject (see Appendix B). Five peripatologists independently rated twenty individuals in training on their mobility proficiency. Perfect agreement in ratings utilizing the above-mentioned instrument was obtained, thus, yielding a reliability coefficient of 1.0.

Employment/Return to Community - Former Position

Each subject received scores categorized as successful or not successful, ready or not ready. More specifically, information regarding

whether employment has been secured or a return to his former position in the community has been effectuated was gathered for each individual. Since job offers in the desired field may have been tendered and rejected for reasons other than salary, poor working conditions or geographical location (e.g. attitude), the number of offers, acceptance of position and relevance to the field for which qualified, was noted. In addition, since unemployment may be due to factors other than lack of preparedness and readiness to assume job duties, successful completion of rehabilitation training at the Lighthouse was recorded, as was whether or not the individual is functioning outside.

Adjustment to Blindness Scale

This technique was devised by Cowen et al (1961) incorporating instruments previously designed by Fitting (1954) and Steingesser (1954), revised and changed to meet the needs of their study. Each of the items reflects either a positive or negative attitude toward blindness. The thirty item scale selected yielded a split-half reliability of .83 uncorrected, and .91 after application of the Spearman-Brown correction formula (see Appendix B). This scale was administered to each subject who was requested to respond "True" or "False" to each item. The score consists of the sum of positive attitudes.

Self-Report

Each subject who was ready to complete training was asked to directly respond to the following simple self-report rating sheet devised by two psychologists at the Lighthouse specifically for this study. Its utility was determined during the course of the investigation.

5	4	3	2	1
Always	Most of the time	Some-what	Rarely	Not at all

A. I carry out daily activities independently

B. I am able to travel on my own

C. I feel ready to return to my former position or one for which I have been retrained.

D. I am depressed and pessimistic

E. I lack confidence in my abilities

The score is the sum of the five item ratings.

Family or Close Associate Report

A family member or one with whom the subject comes into almost daily contact was asked to respond to the same questions as above (except in the third person) regarding the blind person at the time he completed training.

The latter two, along with instructor's reports also served as measures for testing the hypothesis that Diabetics view themselves more unrealistically, and a greater discrepancy in the direction of overestimation should obtain between self and report of others for this group than for either those with Retinitis Pigmentosa or the Traumatically Injured.

Results

Personality Patterns

It was hypothesized that Diabetics (D) develop a Pattern of Retreat while those with Retinitis Pigmentosa (RP) develop a Pattern of Compensation. Each group would, therefore, manifest a greater degree of the traits associated with the respective pattern than the other group or the Traumatically Injured (T) for which no pattern was predicted. Scores for subjects on each trait were obtained from the ratings of the Sentence Completion Test by two independent judges. Interjudge (Pearson product moment) correlations on each trait ranged from .85 to 1.0 with a median of .985. Analyses were based on the combination of the two ratings for each trait.

Initially an analysis of variance technique was employed to compare the three groups on each of the 16 traits. Strikingly high levels of significance were obtained. Primary concern was with the Diabetic and RP groups. Further parametric analysis of the data employing the Scheffe' F Test (Edwards, 1956) of significance determined the difference between pairs of groups for each trait. However, the large number of zero scores for some subjects resulted in considerable heterogeneity of variance violating the assumptions of normality and homogeneity of variance. Therefore, non-parametric analysis was used in addition to ANOVA.

Pattern of Retreat

Parametric Analysis

The analysis of variance for each of the eight traits of the Pattern of Retreat (Passivity, Depression, Feelings of Inadequacy, Compliance, Docility, Repressed Hostility and Guilt, Withdrawal and Hysteria)

yielded significant Fs between the three groups ($P < .05$). The Scheffe' F indicated that in most cases the Diabetic (D) group showed a higher mean score than the other two, consistent with the hypothesis. They differed substantially from the Retinitis Pigmentosa (RP) group in all 8 traits. In 3 of the traits the Ds did not differ from the Trauma (T) group. Analysis of variance summaries are presented in Table 1, Means, SDs and Scheffe' F in Table 2.

Non Parametric Analysis

Because of the lack of normality and heterogeneity of variance, a non-parametric method, a four-fold contingency table analysis was also employed to compare pairs of groups. The technique is derived from a binominal expansion by Fisher's exact method (Mainland et al, 1956). This procedure which entails no assumptions utilized median splits. The median scores, number of subjects in each category and P levels are presented in Table 3. In all but one trait there were more Ds above the median than RPs ($P < .01$). In the one case where there were discrepancies between results of the parametric and non-parametric tests, the data were examined to determine what contributed to the differences in findings. However, even in this case, the trait of Compliance showed a difference which approached significance at the .10 P level. For the T group, P levels were not as great as those obtained using the parametric statistic. Since the median split is a less powerful test for discerning differences, it was not surprising that sharp discriminations were less often perceived than with the analysis of variance. In general, the median split analysis tended to be consistent with ANOVA results. The hypothesis dealing with the Pattern of Retreat was essentially confirmed.

Table 1

Summaries of Analyses of Variance
for Each Trait in Pattern of Retreat

Trait	Source of Variance*	Sum of Squares	Mean Square	F	P
Passivity	Between	711.43	355.72		
	Within	5435.55	95.36		
	Total	6146.98		3.73	.029
Depression	Between	7680.63	3840.31		
	Within	31072.30	545.13		
	Total	38752.93		7.04	.002
Inadequacy	Between	4591.63	2295.82		
	Within	16698.55	292.96		
	Total			7.84	.001
Compliance	Between	180.13	90.07		
	Within	1646.20	28.88		
	Total	1826.33		3.12	.050
Docility	Between	1615.63	807.82		
	Within	8996.55	157.83		
	Total	10612.18		5.12	.009
Repressed Hostility/ Guilt	Between	1919.23	959.61		
	Within	12730.96	223.35		
	Total	14650.18		4.30	.018
Withdrawal	Between	2434.53	1217.26		
	Within	11768.20	206.46		
	Total	14202.73		5.89	.005
Hysteria	Between	1518.23	759.11		
	Within	10943.95	192.00		
	Total	12462.18		3.95	.024

* df for between groups is 2, within 57 in every case.

Note: N = 20 for each group.

Table 2

Means and Standard Deviations
of Diabetes, Retinities Pigmentosa and Trauma Groups
for the Pattern of Retreat
and Scheffe F Values for Differences Between Groups

Trait	Group	Mean	S.D.	Groups	Scheffe F
Passivity	D	12.05	14.46	D/RP	5.82**
	RP	4.60	6.80	D/T	5.36**
	T	4.90	4.04	RP/T	.01
Depression	D	42.15	27.00	D/RP	13.12***
	RP	15.40	10.94	D/T	.92
	T	35.05	26.55	RP/T	7.08**
Inadequacy	D	30.40	24.26	D/RP	15.62***
	RP	9.00	8.88	D/T	4.62*
	T	18.75	12.94	RP/T	3.24*
Compliance	D	4.90	6.08	D/RP	5.82**
	RP	0.80	1.47	D/T	.42
	T	3.80	6.57	RP/T	3.12
Docility	D	13.90	19.64	D/RP	10.14***
	RP	1.25	3.10	D/T	3.47*
	T	6.05	7.38	RP/T	1.75
Repressed Hostility/ Guilt	D	16.54	13.77	D/RP	8.58***
	RP	2.70	3.15	D/T	1.97
	T	9.90	20.90	RP/T	2.32
Withdrawal	D	20.50	19.92	D/RP	11.64***
	RP	5.00	5.70	D/T	4.19*
	T	11.20	12.62	RP/T	1.86
Hysteria	D	13.95	21.00	D/RP	7.69**
	RP	1.80	3.56	D/T	3.21*
	T	66.10	9.68	RP/T	.96

* $P < .05$
** $P < .01$
*** $P < .001$

Table 3

Number of Subjects Above Median for Each Trait of Pattern of Retreat and P Values for Differences Between Groups

Trait	Median Score	Group	Number Above Median	Groups	P
Passivity	.5				
		D	14	D/RP	.01
		RP	5	D/T	.20
		T	9	RP/T	.32
Depression	23				
		D	13	D/RP	.01
		RP	4	D/T	1.00
		T	12	RP/T	.02
Inadequacy	13.5				
		D	14	D/RP	.01
		RP	5	D/T	.52
		T	11	RP/T	.50
Compliance	0				
		D	11	D/RP	.10
		RP	5	D/T	.52
		T	8	RP/T	.50
Docility	4				
		D	16	D/RP	.00
		RP	3	D/T	.05
		T	9	RP/T	.08
Repressed Hostility/ Guilt	5.5				
		D	16	D/RP	.00
		RP	5	D/T	.05
		T	9	RP/T	.32
Withdrawal	7.5				
		D	16	D/RP	.00
		RP	4	D/T	.11
		T	10	RP/T	.09
Hysteria	0				
		D	15	D/RP	.00
		RP	5	D/T	.02
		T	7	RP/T	.72

Note: N = 20 for each group.

Pattern of Compensation

Parametric Analysis

The Pattern of Compensation analysis was treated in the same manner as the Pattern of Retreat. Six of the eight traits (Externalization, Competitiveness, Need for Mastery and Control, Aggressiveness, Achievement-Orientation, and Compulsivity) showed differences beyond the .05 level between the three groups. (See Table 4). The two traits which did not yield significant Fs were Assertiveness ($\underline{P}$ =.355) and Overcompensation ($\underline{P}$ =.10). Since the latter approached significance, specific differences between groups were tested for the trait. When the Scheffe' F was computed, the RP group was found to possess the 7 traits (including Overcompensation) in significantly greater degree than at least one and sometimes both of the other two groups, consistent with the hypothesis. Most often, RPs differed from the Ds who showed little, if any evidence of these traits. For one trait, Aggressiveness, the difference was between RPs and Ts. Means, SDs and Scheffe' F's are presented in Table 5.

Non-Parametric Analysis

Five of the eight traits which comprise the Pattern of Compensation differentiate the three groups, with the RPs as hypothesized, manifesting a greater degree of the traits than Ds and/or Ts. Those three traits which showed no differences were Assertiveness, consistent with the ANOVA, and Competitiveness and Need for Mastery and Control. The failure of those last two traits to demonstrate significance is in contrast to the analysis of variance (see Table 6 for Median scores, Number of subjects in each category and $\underline{P}$ levels). Examination of the

distribution revealed that the extremely high scores that were obtained by some RPs had a sizable effect on the mean resulting in a significant ANOVA, but not on the median. If the trait does occur, therefore, it is likely to do so to a greater proportion in RPs than in Ds or Ts. For Competitiveness, the data indicated that both the RP and T group have the same number of subjects above the median, preventing significance. However, the analysis of variance takes into account the actual scores rather than the number of subjects, and while the same number of Ts and only a few less Ds than RPs were above median, the latter received considerably higher scores. The trait of Overcompensation which only attained a borderline level of significance in the ANOVA revealed differences between RPs and Ds ($\underline{P} = .01$) and RPs and Ts ($\underline{P} = .05$). As in the parametric analysis RPs most often showed the largest differences when compared to Ds. For Aggressiveness, though, the RPs differed significantly with Ts who demonstrated the smallest degree of this trait ($\underline{P} = .01$).

Suspiciousness

A post-hoc comparison of the three groups on the trait of Suspiciousness was made, because indications in the literature and the author's experience suggested its relevance to RPs. Results revealed significant differences between RPs and both Ds and Ts. The analysis of variance showed a $\underline{P}$ level of .001. When differences between groups were examined, the Scheffe' F differentiated RPs from Ds and Ts at .05 (See Tables 7 ANOVA, Table 8 Means, SDs and Scheffe' Fs). Three-quarters of the RPs possessed this trait (15), while only 3 Ts and 2 Ds did when number above median is considered. Fishers' Exact Test shows RPs more Suspicious than either Ds or Ts ($\underline{P} < .001$). (See Table 9 for Number of Subjects Above Median and $\underline{P}$ Values).

Table 4

Summaries of Analyses of Variance
for Each Trait in Pattern of Compensation

Trait	Source of Variance*	Sum of Squares	Mean Square	F	P
Assertiveness	Between	98.53	49.27		
	Within	2653.40	46.55		
	Total	2751.93		1.06	.355
Externalization	Between	1591.63	795.81		
	Within	4923.10	86.37		
	Total	6514.73		9.21	.001
Overcompensation	Between	300.43	150.22		
	Within	3617.75	63.47		
	Total	3918.18		2.37	.101
Competitiveness	Between	389.20	194.60		
	Within	2761.65	48.45		
	Total	3150.85		4.02	.023
Mastery/Control	Between	1262.43	631.21		
	Within	6775.50	118.87		
	Total	8037.93		5.31	.008
Aggressiveness	Between	409.73	204.87		
	Within	2509.25	44.02		
	Total	2918.98		4.65	.013
Achievement-Orientation	Between	1198.43	599.21		
	Within	3562.30	62.50		
	Total	4760.73		9.59	.001
Compulsivity	Between	1649.20	824.60		
	Within	3766.80	66.08		
	Total	5416.00		12.48	.001

*df for between groups is 2, within 57 in every case.

Note: N = 20 for each group.

Table 5

Means and Standard Deviations
of Diabetes, Retinities Pigmentosa and Trauma Groups
for Pattern of Compensation and Scheffe F Values
for Differences Between Groups

Trait	Group	Mean	S.D	Groups	Scheffe F
Assertiveness	D	4.50	5.30	+	
	RP	6.80	8.83		
	T	3.80	5.15		
Externalization	D	3.20	6.89	D/RP	13.63***
	RP	14.05	12.76	D/T	.00
	T	3.05	5.99	RP/T	14.01***
Overcompensation	D	5.35	7.01	D/RP	4.18*
	RP	10.50	8.43	D/T	.14
	T	6.30	7.79	RP/T	2.78
Competitiveness	D	2.15	3.02	D/RP	7.93***
	RP	8.35	10.12	D/T	1.29
	T	4.65	5.14	RP/T	2.82
Mastery/Control	D	5.25	7.08	D/RP	6.51**
	RP	14.05	16.11	D/T	.23
	T	3.60	5.41	RP/T	9.19***
Aggressiveness	D	3.95	5.75	D/RP	2.47
	RP	7.25	9.44	D/T	2.18
	T	0.85	1.82	RP/T	9.30***
Achievement-Orientation	D	6.95	6.73	D/RP	17.44***
	RP	17.40	9.17	D/T	.92
	T	9.35	6.99	RP/T	10.34***
Compulsivity	D	1.60	4.60	D/RP	23.64***
	RP	14.10	10.52	D/T	2.07
	T	5.30	7.52	RP/T	11.72***

Note: N = 20 for each group.

* $P < .05$
** $P < .01$
*** $P < .001$

\+ for those variables for which a significant F (Analysis of Variance) was not obtained, post-mortem Scheffe F tests were not performed.

Table 6

Number of Subjects Above Median for Each Trait of Pattern of Compensation and P Values for Differences Between Groups

Trait	Median Score	Group	Number Above Median	Groups	P
Assertiveness	4				
		D	9	D/RP	1.00
		RP	10	D/T	.74
		T	7	RP/T	.52
Externalization	0				
		D	5	D/RP	.001
		RP	16	D/T	.72
		T	7	RP/T	.05
Overcompensation	5				
		D	6	D/RP	.01
		RP	15	D/T	.74
		T	8	RP/T	.05
Competitiveness	3				
		D	8	D/RP	.52
		RP	11	D/T	.52
		T	11	RP/T	1.00
Mastery/ Control	0				
		D	9	D/RP	.51
		RP	12	D/T	.74
		T	7	RP/T	.20
Aggression	0				
		D	10	D/RP	.52
		RP	13	D/T	.09
		T	4	RP/T	.01
Achievement-Orientation	9.5				
		D	6	D/RP	.01
		RP	15	D/T	.51
		T	9	RP/T	.11
Compulsivity	0				
		D	3	D/RP	.00
		RP	17	D/T	.08
		T	9	RP/T	.02

Note: N = 20 for each group.

Table 7

Summary of Analysis of Variance
for the Trait of Suspiciousness

Trait	Source of Variance*	Sum of Squares	Mean Square	F	P
Suspiciousness	Between	1068.13	534.07		
	Within	1875.60	50.45		
	Total	3943.73		10.59	<.001

*df for between group is 2, within is 57.

Note: N = 20 for each group.

Table 8

Means and Standard Deviations of Diabetes, Retinitis Pigmentosa and Trauma Groups for Trait of Suspiciousness and Scheffe F Values for Differences Between Groups

Trait	Group	Mean	S.D.	Groups	Scheffe F
Suspiciousness	D	2.80	3.60	D/RP	3.45*
	RP	11.70	10.65	D/T	0.08
	T	2.70	4.16	RP/T	3.39*

Note: N = 20 for each group.

* $\underline{P} < .05$

Table 9

Number of Subjects Above the Median
on the Trait of Suspiciousness

Group	Number Above Median	Groups	P
D	2	D/RP	$< .001$
RP	15	D/T	1.00
T	3	RP/T	$< .001$

Note: N = 20 for each group.

Individuals Within Group Possessing Pattern

Another way of viewing the data was to note the number of individuals within each group possessing a pattern. A subject who was above the median in a majority (5) of the traits in that pattern was defined as possessing the pattern. Thus, a simple count of subjects in D, RP, and T groups obtaining scores above the median in more than half the traits was made. (See Table 10 Pattern of Retreat, Table 11 Pattern of Compensation).

Pattern of Retreat

Fifteen of the Ds possessed the Pattern of Retreat as compared with eight of the Ts and only two of the RPs. In comparing pairs of groups using Fisher's Exact Test, there was a striking difference observed. The D/RP comparison showed a 15/2 breakdown ($\underline{P} = .001$). The D/T count was 8/2 ($\underline{P} = .05$), and the RP/T was 15/8 ($\underline{P} = .06$).

Pattern of Compensation

The same procedure was applied for the Pattern of Compensation, and the difference between each pair of groups is listed in Table 11. Thirteen of the RPs possessed the pattern, while only six of the Ts and three of the Ds did. Though there was no difference between the D and T groups. (3/6), each of whom showed only minimal possession of the pattern ($\underline{P} = .45$), they both differed from the RP in the predicted direction (RP/D - 13/3 $\underline{P} = .003$, and RP/T - 13/6 $\underline{P} = .05$ respectively).

Adjustment to Blindness

It was hypothesized that individuals with Retinitis Pigmentosa would demonstrate more adequate adjustment to blindness than those with Diabetes. Adjustment to Blindness consisted of four measures of behavior

including, Independence in Handling Daily Living Tasks, Independent Mobility, Vocational Readiness and Attitude Toward Disability. All of the behavioral measures differentiated Diabetics from those with Retinitis Pigmentosa, the latter showing significantly better adjustment.

Independence

Handling Daily Living Tasks

Teacher evaluations of performance in Techniques of Daily Living and Personal Management courses were obtained for each subject. Scores ranged from a low of 70 to a high of 152. The analysis of variance for the three groups yielded a significant F ($P = .003$). The Scheffe' F Test indicated that both the RP and T groups were judged better adjusted than the Ds ($P < .01$). The difference between the RP and T groups was not significant. (See Table 13 for Means, SDs and Scheffe' Fs). The summary ANOVA is presented in Table 12.

Mobility

Analysis of variance of the groups' Independence in Mobility determined by peripatologist ratings revealed a significant F ($P = .001$) (See Table 12). When the Scheffe' Test was applied the RPs were seen to be significantly more mobile than either the D or T groups ($P < .001$), with Ds doing least well. However, the differences between the T and D groups was not significant (See Table 13).

Table 10

Number of Subjects above the Median
on 5 or More of the 8 Traits of Pattern of Retreat

Group	Number Above Median	Groups	P
D	15	D/RP	.001
RP	2	D/T	.05
T	8	RP/T	.06

Note: N = 20 for each group.

Table 11

Number of Subjects above the Median
on 5 or More of the 8 Traits of Pattern of Compensation

Group	Number Above Median	Groups	P
D	3	D/RP	.003
RP	13	D/T	.45
T	6	RP/T	.05

Note: N = 20 for each group.

Table 12

Summaries of Analyses of Variance for Behavioral Ratings (TDL/PM Ratings, Mobility Ratings and Adjustment to Blindness Scale) for the Diabetic, Retinitis Pigmentosa and Trauma Groups

Variable	Source of Variance*	Sum of Squares	Mean Square	F	P
TDL/PM Ratings	Between	8285.69	4142.84		
	Within	35240.06	618.25		
	Total	43525.75		6.70	.003
Mobility Ratings	Between	17.10	8.55		
	Within	56.30	.99		
	Total	73.40		8.65	.001
Adjustment to Blindness Scale	Between	325.43	162.71		
	Within	799.50	14.03		
	Total	1124.93		11.60	.000

*df for between groups is 2, within 57 in each case.

Note: N = 20 for each group.

Table 13

Means, Standard Deviations and Ranges
for Diabetes, Retinitis Pigmentosa and Trauma Groups
on Behavioral Measures of Adjustment
(TDL/PM and Mobility Ratings and Adjustment to Blindness Scale)
and Scheffe F Values for Differences Between Groups

Variable	Group	Mean	S.D.	Obtained Range	Groups	Scheffe F
TDL/PM Ratings	D	115.5	28.8	70-152	D/RP	12.86***
	RP	139.7	17.8	89-152	D/T	5.90**
	T	130.6	24.8	85-152	RP/T	1.34
Mobility Ratings	D	3.6	1.2	1-5	D/RP	14.58***
	RP	4.8	1.2	4-5	D/T	.23
	T	3.8	1.1	22-5	RP/T	11.16***
Adjustment to Blindness Scale	D	17.7	3.8	9-23	D/RP	23.16***
	RP	23.4	2.9	19-28	D/T	5.00**
	T	20.4	4.2	11-28	RP/T	6.63**

Note: N = 20 for each group.

* $F = 3.15$ $P < .05$
** $F = 4.98$ $P < .01$
*** $F = 7.76$ $P < .001$

Vocational Readiness

Readiness for vocational functioning was assessed by rehabilitation personnels' dichotomous ratings of successful or unsuccessful completion of training and job opportunity. Fisher's exact test for differences between each group was performed. The P values are presented in Tables 14 and 15.

When successful versus non-successful rehabilitation was compared, the groups differed from each other. Ds were more likely to be unsuccessful than either RPs (P =.02) or Ts (P =.05), though the latter two were not different from each other. With respect to both job availability and/or acceptance and successful rehabilitation defined as readiness, the groups also differed. Again, Ds were least ready when compared to the other two (P =.03), but RPs and Ts were identical with respect to this variable.

Attitude Toward Disability

Attitude Toward Disability

The subject's attitude toward disability was measured by the Adjustment to Blindness Scale. A high score represents the most positive attitude. The distribution of scores was such that the range for the Ds was 9 to 23, clearly lower than that of the RPs (19 to 28), while the T range tended to overlap (11 to 28). The Means, SDs, Ranges and Scheffe' Fs are presented in Table 13. The analysis of variance between groups yielded a significant F ($P < .001$) (See Table 12). Scheffe's Test showed that the mean adjustment score for RPs (23.45) was significantly higher than either the D (17.75) or T (20.45) groups ($P \leq .01$). Especially noteworthy was the hypothesized difference between RPs and Ds (Scheffe' F = 23.16, $P < .001$). The Ts also differed from the Ds (Scheffe' F = 5.00, $P < .01$).

The last group was clearly the least well adjusted of the three groups in their attitude toward blindness.

Trauma Group

As hypothesized, subjects in the Traumatically Injured group showed no uniform pattern. From the analyses of the Pattern of Retreat and Compensation, it was noted that the group differed from either RPs or Ds or both on some traits, but not on others. The direction was not consistent within patterns. They possessed none of the traits in greater proportion than the predicted group (i.e., Retreat Pattern for D and Compensation Pattern for RP). While the largest differences occurred between Ds and RPs for 13 of the 16 traits, the Ts were the extreme scoring group on ANOVA on three traits. They were found to be least Aggressive, to Externalize least, and to have the least Need for Mastery and Control. This last trait was found to have inconsistent significance. With respect to their Adjustment to Blindness, the Ts fell between the Ds and RPs (See Tables 2 and 3 Pattern of Retreat, Scheffe' F and P levels respectively, 5 and 6 Pattern of Compensation, Scheffe' F and P levels respectively and 13 for Behavioral Adjustment measures Scheffe' Fs).

Although it was predicted that there would be greater variability in terms of both Patterns and Adjustment measures within this group than within the other two, there was no consistent evidence to support this hypothesis. The variability of the distribution was not greatest for the T group with one exception, the trait of Repressed Hostility and Guilt. The latter, was affected by one extremely high score in the sample (See Tables 2 Pattern of Retreat, 5 Pattern of Compensation and 13 Behavioral Adjustment Measures for SDs).

Table 14

Number of Successful or Non-Successful Rehabilitants in Diabetic, Retinitis Pigmentosa and Traumatically Injured Groups and P Values for Differences Between Groups

Group	Successful	Non-Successful	Groups	P
D	12	8		
			D/RP	.02
RP	19	1		
			D/T	.05
T	17	3		
			RP/T	.60

Note: N = 20 for each group.

Table 15

Number of Vocationally Ready* Subjects
in Diabetic, Retinitis Pigmentosa and Traumatically Injured Groups
and P Values for Differences Between Groups

Group	Ready	Not Ready	Groups	P
D	11	9		
			D/RP	.03
RP	18	2		
			D/T	.03
T	18	2		
			RP/T	1.00

Note: N = 20 for each group.

* Readiness defined as job availability and/or acceptance of position and successful rehabilitation.

Unrealistic Self-Perception

It was hypothesized that Diabetics view themselves more unrealistically than those with Retinitis Pigmentosa or the Traumatically Injured, overestimating their adjustment. Unrealistic self-evaluation was defined as the difference (overestimation) between self rating (Self Report) and the rating of a close associate (Other Report). Both the Self Report and the Other Report scale consisted of 5 items; three dealt with the independent management of daily activities and mobility and vocational readiness. Two items measured attitude toward disability.

Total Self minus Other Score

The analysis of variance comparing Total Self-Other Report revealed a significant F ($P < .001$). (See Table 16 for ANOVA summary). Using Scheffe's Test it was demonstrated that the Diabetics overestimated their own adjustment as compared with other's evaluations more than do either the Trauma or RP groups ($P < .001$), confirming the hypothesis. There was no difference between the latter two groups with respect to this variable (See Table 17 for Means, SDs and Scheffe' Fs).

Subsets of Self-Other Report

Independence and Vocational Readiness

A breakdown of the two sets of questions into content areas was made. Three items dealt with independence in daily activities and travel, and vocational readiness, two items with attitude toward disability. It was observed that in the first instance there were significant differences between groups at the .01 level (Table 16 Summary ANOVA). Results after applying Scheffe's Test demonstrated that the Ds overestimated their

adjustment on independence and vocational readiness more than RPs or Ts ($P < .05$) (See Table 17 Means, SD and Scheffe' F).

Attitude Toward Disability

On the other hand, when a comparison of the three groups was made with respect to attitude, no differences between groups for Self-Other ratings were observed. (See Table 16 Summary ANOVA).

Total Self Report

Analysis of variance comparing the three group's Total Self Report (5 items) revealed no significant differences between them in the way they perceived their adjustment ($P = .11$) (See Table 16 for Summary ANOVA).

Subsets of Self Report

Independence and Vocational Readiness

An examination of the items covering independence and vocational readiness only, yielded no significant differences in ratings between groups ($P = .22$). (See Table 17 for Means, SDs and Scheffe' Fs).

Attitude Toward Disability

The subject rating of attitude toward blindness for D, RP and T groups similarly revealed no difference ($P = .16$). (See Table 17 Means, SDs and Scheffe' Fs).

Ds rate themselves as high as do RPs and Ts on the Self Report. However, when comparisons of Self-Other ratings were made, Ds consistently overestimated their adjustment when compared with the other two groups. It may be inferred that the high self-rating on the part of the Ds represented unrealistically positive perception, while the high self score of

the RPs and Ts reflects more realistic appraisal. These findings are in accord with the hypothesis which deals with accuracy of self evaluation.

Total Other Report

When group differences were analyzed for Total Other Report, significant differences were obtained consistent with the previously noted behavioral measures (P =.002). (See Table 16 Summary ANOVA). Those with RP were rated as better adjusted than both D and T ($P < .01$). No significant differences occurred between the D and T groups. The Means, SDs and Scheffe' F are presented in Table 17.

Subsets of Other Report

Independence and Vocational Readiness

Analysis of variance for the three groups in terms of others' evaluation of their self-sufficient management of activities and travel, and vocational readiness resulted in differences (P =.02). (Table 16 Summary ANOVA). Application of Scheffe' F revealed that the RPs were judged significantly better adjusted than the Ds ($P < .01$). No differences were evidenced between D and T or between T and RP groups. (See Table 17 for Means, SDs, Scheffe' F).

Attitude Toward Disability

When a comparison was made of the Other Report for each of the groups with respect to attitude toward blindness, the RPs have the lowest, the Ds the highest ratings. (See Table 16 Summary ANOVA). Significant differences (P of .007) obtained. Scheffe's Test indicated specifically that Ds were judged as having a more negative outlook than either RPs or Ts ($P < .001$, $P < .05$, respectively). No significant differences were

Table 16

Analyses of Variance for Self, Close Associate (Other) and Self-Other Ratings of Diabetic, Retinitis Pigmentosa and Trauma Groups

Variable	Source of Variance*	SS	MS	F
SELF RATING (Independence, Vocational Readiness)	Between	21.73	10.86	
	Within	397.00	6.96	
	Total	418.73		1.55
SELF RATING (Attitude)	Between	13.30	6.65	
	Within	201.95	3.54	
	Total	215.25		1.87
SELF RATING (Total)	Between	68.03	34.02	
	Within	837.30	14.69	
	Total	905.33		2.31
CLOSE ASSOCIATE (OTHER) RATING (Independence, Vocational Readiness)	Between	65.43	32.71	
	Within	428.75	7.52	
	Total	494.18		4.34***
CLOSE ASSOCIATE (OTHER) RATING (Attitude)	Between	32.70	16.35	
	Within	169.90	2.98	
	Total	202.60		5.48***
CLOSE ASSOCIATE (OTHER) RATING (Total)	Between	197.63	98.2	
	Within	310.30	5.44	
	Total	507.93		18.15****
SELF-OTHER RATING (Independence, Vocational Readiness)	Between	27.10	13.55	
	Within	175.75	3.08	
	Total	202.85		4.39***
SELF-OTHER RATING (Attitude)	Between	2.03	1.02	
	Within	244.15	4.28	
	Total	246.18		.24
SELF-OTHER RATING (Total)	Between	197.63	98.82	
	Within	310.30	5.44	
	Total	507.93		18.15****

Note: N = 20 for each group.

* df between = 2, within = 57 for each.

** $P < .05$
*** $P < .01$
**** $P < .001$

Table 17

Means and Standard Deviations
for Self, Close Associate (Other) and Self-Other Ratings
and Scheffe F for Differences Between Groups

Variable	Group	Mean	S.D.	Groups	Scheffe F
SELF RATING (Independence, Vocational Readiness)	D	12.50	2.31	+	
	RP	13.60	1.80		
	T	12.20	3.35		
SELF RATING (Attitude)	D	4.65	2.17	+	
	RP	5.30	1.70		
	T	5.80	1.57		
SELF RATING (Total)	D	7.85	4.15	+	
	RP	8.30	3.03		
	T	5.85	3.93		
CLOSE ASSOCIATE (OTHER) RATING (Independence, Vocational Readiness)	D	11.50	2.75	D/RP	8.33***
	RP	14.05	1.46	D/T	1.61
	T	12.60	3.43	RP/T	2.61
CLOSE ASSOCIATE (OTHER) RATING (Attitude)	D	7.25	1.48	D/RP	10.87***
	RP	5.45	1.72	D/T	3.69*
	T	6.20	1.83	RP/T	1.88
CLOSE ASSOCIATE (OTHER) RATING (Total)	D	4.25	3.18	D/RP	14.97***
	RP	8.55	2.40	D/T	2.20
	T	5.90	4.40	RP/T	5.68**
SELF-OTHER RATING (Independence, Vocational Readiness)	D	1.00	2.47	D/RP	4.78*
	RP	-0.45	0.92	D/T	4.46*
	T	-0.40	1.36	RP/T	1.64
SELF-OTHER RATING (Attitude)	D	0.60	2.78	+	
	RP	0.15	1.46		
	T	0.40	1.53		
SELF-OTHER RATING (Total)	D	3.60	2.80	D/RP	27.06***
	RP	-0.25	1.97	D/T	27.06***
	T	-0.25	1.95	RP/T	.00

Note: N = 20 for each group.
Independence/Vocational Readiness--High score means positive adjustment.
Attitude--Low score means positive attitude.
Self-Other--Low score means underestimate.

+ for those variables in which a significant F (Analysis of Variance) was not obtained, post mortem Scheffe F Tests were not performed.

* $P < .05$
** $P < .01$
*** $P < .001$

apparent between the latter two groups (See Table 17 for Means, SDs, Scheffe' Fs).

Interaction of Personality with Disease

The adjustment levels of subjects from all three groups (D, RP and T) who possessed the Pattern of Retreat (N =25) and those with the Pattern of Compensation (N =22) were assessed (See Table 18). Forty-eight percent of the Retreat group showed poor adjustment,[3] while 92 percent of the Compensation group demonstrated good adjustment. When the disease process was examined, 60 percent of the Diabetics made a poor adjustment, while 95 percent of the RPs did well. The data suggest that the disease is important in determining adjustment. When the disease and the pattern are noted, 67 percent of the Diabetics with the Retreat pattern did poorly, and 100 percent of the RPs with the Compensation pattern made a good adjustment. Thus, it appears that the illness interacts with personality in such a way as to produce characteristic reactions which affect the adjustment.

[3]Poor adjustment was defined as low scores on a majority of the behavioral measures (Independence in Daily Living Tasks, Independent Mobility, Attitude Toward Disability, Vocational Readiness, Successful Completion of Rehabilitation), good adjustment as high scores on a majority of them.

Table 18

Pattern and Adjustment
for Diabetic, Retinitis Pigmentosa and Traumatically Injured Groups

Group	Retreat		Compensation		No Pattern	
	Good	Poor	Good	Poor	Good	Poor
D	5	10	1	2	3	1
RP	2	0	13	0	5	1
T	6	2	6	0	5	1
	13	12	20	2	13	3
	25		22		16	

Note: N = 20 for each group.

Two subjects in the Diabetic group possessed both the Pattern of Retreat and the Pattern of Compensation; one showed good adjustment, the other poor adjustment.

One subject in the Retinitis Pigmentosa group who showed good adjustment possessed both Patterns of Retreat and Compensation.

Discussion

The present investigation demonstrated a relationship between physical disability and personality. The type of eye disease which caused blindness was related to a specifically identifiable pattern of reaction that either assisted or retarded adjustment. Results strongly supported the hypothesis that Diabetics develop a Pattern of Retreat which interfered with adjustment, while those with Retinitis Pigmentosa develop a Pattern of Compensation which assisted their rehabilitation efforts.

Three-quarters of the Diabetics in the sample possessed the Pattern of Retreat, defined as a majority (5) of the traits subsumed under this pattern, (Passivity, Depression, Feelings of Inadequacy, Compliance, Docility, Repressed Hostility and Guilt, Withdrawal and Hysteria). Indeed, all but one had at least half of the traits. Diabetics as a group possessed all eight traits to a significantly greater degree than those with Retinitis Pigmentosa (RP) or the Traumatically Injured, and their adjustment to blindness was poorer than either of the other two groups.

The Pattern of Compensation also differentiated the groups, although to a lesser degree than the Retreat Pattern. Almost two-thirds of those with Retinitis Pigmentosa possessed the Compensation Pattern (Assertiveness, Externalization, Overcompensation, Competitiveness, Need for Mastery and Control, Aggressiveness, Achievement-Orientation, and Compulsivity). RPs as a group had 5 of the traits in significantly greater degree than the Diabetic or Trauma groups, and were shown to make a better adjustment to blindness than the other two.

Interaction of Personality with Disease

The adjustment levels of subjects from all three groups (D, RP and T) who possessed the Pattern of Retreat, and those with the Pattern of Compensation were noted. Forty-eight percent of the Retreat group showed poor adjustment, while 92 percent of the Compensation group demonstrated good adjustment. When the disease process was examined, 60 percent of the Diabetics made a poor adjustment, while 95 percent of the RPs did well. The data suggest the disease is more important than the pattern in determining adjustment. However, when both the disease and the pattern are noted, 67 percent of the Diabetics with the Retreat pattern did poorly, and 100 percent of the RPs with the Compensation pattern made a good adjustment. Therefore, it seems that the illness interacts with personality in such a manner as to produce characteristic reactions which affect adaptation. Present results differ from previous studies reporting that personality variation is not related to medical diagnosis (Bauman, 1954, Tobias et al, 1960, Barker, Gonick and Wright, 1964). Most investigations were not systematic.

Pattern and Adjustment

There are aspects of the disease process of the Diabetics which fosters the development of a hopeless, depressed reaction. It is characterized by repressed anger and resistance to emotional well-being which may be progressive and which results in a poor prognosis for rehabilitation. Those with Retinitis Pigmentosa, on the other hand, seem to develop mechanisms designed to overcome or bypass their imposed limitations and which are of invaluable assistance in adjustment. The Traumatically Injured show no uniform pattern of response either to their environment or to their blindness which would retard or hasten their adaptation. All three groups

had only one major trait in common: Depression. This is consistent with other studies which showed depression to be the most striking characteristic of those blinded (Cholden, 1953).

In both the Retinitis Pigmentosa and Traumatically Injured good agreement was noted between the behavioral evaluations of subjects' adjustment to blindness by other persons (external) and by the self-reports (internal). A good deal less congruence was found between Diabetics' self-reports and others' estimates. The discrepancy was in the direction of an unrealistic appraisal on the part of the Diabetics. They preceived themselves as better able to function effectively than did presumably more objective outside raters. They also tended to deny any limitations.

Diabetics - Pattern of Retreat

Although on a direct, verbal level, Diabetics may overestimate their adjustment, their behavior and their attitude, as indicated by the Pattern of Retreat, reflect an actual underestimation of their capacities. Their adjustment is to illness, to dying, a pessimistic focus on their limitations rather than a positive future. Instructors questioned indicated their belief that Ds had the potential to perform at higher levels of proficiency than that demonstrated, but that their "negative attitude" "cynicism," "bitterness," "expectation of early death," "wish to force others to care for them to make them pay for their health" frequently prevented their success. Thus, they underperform. By vocally overestimating they may be avoiding or denying their illness, indulging in a kind of magical thinking, because they cannot tolerate the anxiety such acceptance arouses. On the other hand, they know they are in a state of deteriorating health, are consciously or unconsciously aware of their mortality, and cannot consistently

sustain the feeling that "I'm all right." Their attitude on the Adjustment to Blindness scale is poor, in contrast to their expressions on the Self-Report. Though both are self-evaluations, the former, which is in the third person, is less subject to conscious control and it is less threatening to admit actual negative feelings.

The Pattern of Retreat is in line with the publicly accepted, stereotypic view of the blind person, as helpless, dependent and withdrawn, (Myerson, 1950), and, as such, may, following blindness, be reinforced still further by those he encounters. It is likely that he was treated as less capable than most, because of his diabetes and developed these traits prior to loss of sight. Blindness then compounds the negative public reaction, further solidifying the view that he should not try on his own, because it is too dangerous. After being discouraged, he then goes into rehabilitation training, where he is suddenly encouraged to be independent. Thus, it is difficult to make the necessary readjustments, and, in fact, such participation probably creates contradictions and additional conflicts.

According to Fitting (1954) the way an individual learned to cope with his major life problems and emergencies before blindness, largely determines his recovery capacity. Since diabetics learn to retreat, they are less likely to adjust adequately, precisely the findings of this investigation.

Can the Pattern be Modified

By the time the diabetics seek the services of rehabilitation agencies, the pattern is already set, so that the encouragement of autonomy, may, at this point, come too late to alter the traits. The reactions

of family and others in large measure contribute to the development of the Pattern of Retreat. The Veterans Administration study of 1958 showed that oversupport and pity on the part of close associates limits adjustment. This behavior was evident in the situation of a diabetic studied in the investigation. While he was receiving rehabilitation services, a special staff meeting was requested by instructors whose efforts to motivate him to acquire the necessary skills were stymied. They were responding to his cries of self-pity and helplessness by feeling sorry for him, indirectly communicating their agreement that he was too sick to manage, and even so, the effort was not worth it, because he was a dying man. Those areas where he was progressing were taught by individuals who ignored and dismissed his "oh poor me" attitude, concentrated not on his depression and hysteria, but instead on assigning realistic tasks he could handle, and indicating the expectation that he would suceed. As in the case of this young man, other individuals involved with and important to a diabetic may be reacting in similar fashion, and inadvertently fostering a Pattern of Retreat.

It would be equally beneficial to study and observe the behavior of families toward their diabetic relative, their reaction to his words and actions, and what they may be doing to reinforce a negative pattern. A subject in the study reported that his wife had cautioned him, "If you eat this, it'll kill you!" Family counseling may be of value in changing such behavior. Noting the reaction of physicians is also recommended, since they too, by their advice may be creating a climate in which the Retreat Pattern can flourish. One opthalmologist who broke the news of the permanency of visual disability to one of the rehabilitants communicated an attitude of unnecessary and unrealistic helplessness by his words. To indicate finality,

he said, "You'll never work again" rather than, "You'll never see again." Recognition and modification of the attitude and behavior of those around the diabetic, so that a less restrictive, punitive, guilt-inducing environment is created, may increase the likelihood of improved adjustment to blindness.

Rewarding a diabetic for passivity, docile, compliant, dependent and demanding behavior by having others handle things for him, and by expecting less of him, in terms of managing his life, sorely limits his adaptation. Instead, noting the discrepancy between capacity and performance, early intervention in an attempt to prevent the Pattern of Retreat from taking hold, is obviously desirable. Emphasis should be on what the person can do rather than what he will do or what it is thought he can safely do. Realistically appraising his capacities and assisting him to realize his potential by encouraging competence consistently, may limit his falling below his maximum ability repeatedly. Such an approach may prevent the development of the vicious circle in which the individual expects to be inadequate and confirms his expectancy (he is not allowed, so he doesn't, which makes him think he can't, so eventually he won't try). Preventing this is crucial, because, it may, in large measure, determine whether he can take part in every-day activities, and feel his life has meaning, or will seek a protected and sheltered existence. Personnel in diabetes associations should be trained to offer counsel to family members early in the development of the disease, to encourage autonomy and discourage unnecessary dependence, long before blindness occurs.

The Dilemma of the Pattern of Retreat

In part, the Diabetic's negative outlook may be realistic. He does have a serious physical illness which may have severe consequences.

The traits of the Pattern of Retreat (e.g. Withdrawal, Passivity) may actually assist his physical well-being. Many physicians (Merck, 1966, Dolge and Seeman, 1965) believe that excess stress and emotional involvement tend to exacerbate the condition, increasing the risk of complications. If this is so, an absence of competitive, driven, achievement-oriented behavior reduces the likelihood of worsening of symptoms. The adoption of the Retreat traits may serve as a mechanism for survival. Thus, the dilemma: by developing the traits, the Diabetics may prolong their lives by controlling sugar spillage (a good physical adjustment), but they also, thereby, assure limited adaptation to blindness (a poor emotional adjustment). Since statistics (Rogot, 1965, Barkow et al, 1965) show that mortality rates for blind diabetics are so high (all but 15 percent die within eight years of visual loss), it could be argued that their adjustment is more appropriate than it appears superficially, because they are adjusting to the reality of death. One of the Diabetics commenting on his resistance to rehabilitative efforts in his behalf, stated that as long as he had to die, it was preferable to make no attempts to make his daily routines easier, pleasanter, or more independent. The reasoning was expressed in the following statement, "it is less painful to leave a world where your life is unhappy, than to depart from one where you are satisfied."

Retinitis Pigmentosa - Pattern of Compensation

While no definitive comparison can be made because of differences in the measures used, the association of Retinitis Pigmentosa with the Pattern of Compensation was less striking than Retreat and Diabetes. Diabetes is a more limiting disease than RP, and may, therefore, lead to a

more consistent personality constellation. In relation to the traits hypothesized for those with Retinitis Pigmentosa, the study points out that the following traits tend to form a generalized picture of the individual: Externalization, Overcompensation, Aggressiveness, Achievement-Orientation, and Compulsivity. Three of the Compensation traits did not uniformly apply to this group as compared to the other two groups. They were: Need for Mastery and Control, Competitiveness and Assertiveness. With regard to the first two, at least some of the subjects possessed the trait to a high degree. But for the last, RPs were not found to be any more Assertive on the projective test than Diabetics or the Traumatically Injured. When one considers that it was predicted that the RP group would be more cautious, less willing to take risks, would find avoidance of a situation preferable to being unprepared for it, and unwilling to act unless certain, it is not surprising that they were not observed to be assertive. It may be that they have a potential for behavior of this sort, but develop it slowly as they become familiar with the circumstances with which they are to deal, become used to their environment, and have worked out ways of coping with it.

The Pattern of Compensation proposed by Cutsforth (1952) is not a complete conceptual model for describing the personality pattern associated with Retinitis Pigmentosa. Since both personal observation and reports in the literature (Wortis and Shaskin, 1939) indicated that RPs tend to be suspicious of the world and those around them, because of the visual inconsistency enforced by their eye disease, this trait, (Suspiciousness), though not part of the Compensation pattern, was studied. Findings[4] showed RPs to be significantly more Suspicious than either of the

[4]Number of RPs 15, Number of Ts 3, Number of Ds 2

other two groups, so it is apparently a trait which characterizes those with this eye disease. It is proposed, therefore, that a more limited pattern subsumed under the title Compulsivity and Control be ascribed to this group which might also include Suspiciousness. Their alertness to detail, directedness of attention, purposefulness, anticipating and constructing images from clues, and their increased efforts to "prove" their adequacy and competence, are all of assistance in their effort to adjust to blindness. The results have, in fact, demonstrated the beneficial effects of these traits to rehabilitation, showing RPs to adapt significantly better than Diabetics and Traumatically Injured.

Hysteria/Compulsivity Dichotomy

Each group (D and RPs) possessed one trait which appears to most clearly represent their reaction to the disease which produces blindness, and, to have a major effect on the adjustment process. For Diabetics, it is Hysteria; for those with Retinitis Pigmentosa, Compulsivity. Speculatively, the Hysteria/Compulsivity dichotomy may more clearly differentiate the groups. The Diabetic is faced with a chronic, debilitating disease, and has, over a period of time learned to live within the structure created by the illness. He must be constantly aware of and attuned to his body and its physical requirements, watching for danger signals, taking medication, visiting his physician, following an exercise, diet, activity regimen based on his condition. It is likely that his orientation would include a preoccupation with his health, and that this preoccupation would limit the energies available to him for investment in the new learning activities necessary to adjust to blindness. On the other hand,

the RP, because of the narrowing of his visual field, develops the need to fill in the gaps, and attend to everything in his immediate environment so as not to risk physical danger or social shame. He makes a deliberate effort to account for what goes on around him. He provides a framework within which he can function comparatively successfully. His sharply focused attention and concentration and his active, searching attempts to apprehend are precisely those qualities most necessary for satisfactory adjustment to blindness. Someone without sight will need to do "mental mapping" to visualize, to order the world so as to make it manageable, to find a place for and arrange each of his belongings, to organize his experience-in other words, to be compulsive. Thus, the RP, because of the nature of his eye disease develops a style that has an advantage over the Diabetic in dealing with blindness.

Trauma Group - Externalization

The Traumatically Injured, as expected, revealed no pattern of traits specific to them as a group, but they were shown to externalize less than either Diabetics or RPs on the parametric measures. The basis for this phenomenon is probably multidetermined in that both relatives and the public at large tend to be blamed. Retinitis Pigmentosa and Diabetes are thought to be inherited conditions, so that these individuals might be more likely to blame their parents. This would be particularly true if they are confronted with other family members who possess the same disability or who have remarked on their felt responsibility for the condition. Additionally, the diabetics, especially, have had a period of time in which to experience possible negative reactions of the community at large toward them. The Ts, on the other

hand, have had less time to have dealt with the public's attitude or their own fear of others' response to a physical handicap. Thus, the RP and Diabetic may have more opportunity for externalizing.

Aggression and Need for Mastery and Control

In line with this, the Ts also were found to be the least aggressive and to have the least need for mastery and control. While all three groups studied have been blind for essentially the same time, RPs and Diabetics have experienced and had to deal with a physical disability in whatever form, over a longer period. They appear to have developed their traits in response to external and internal pressures. The T group may eventually evidence similar traits as a consequence of confrontation with body changes. These may not manifest themselves in the early stages studied in this investigation, when depression and a tendency to direct anger inward are the most striking characteristics of the subjects. They may be less aggressive in terms of searching out ways of handling the restrictions imposed by blindness, but this may be a temporary condition, not a persistent or permanent trait. They may begin to make more demands as they proceed through readjusting to their environment. Further, although the Diabetic is described as Compliant, and Docile, he showed signs of considerable Repressed Hostility. He did show less direct anger than the RP, but was passively aggressive.

The Traumatically Injured displayed the least need for mastery and control. They grow up with a sense of physical integrity, so it is likely that their body image is more intact than the Ds or RPs. If they are more secure, and have had only one catastrophic experience of loss of

control of their environment, they have less opportunity to develop behavior which entails mastery. Their condition is usually stablized, so they know essentially what they have to deal with, while both RPs and particularly Ds can anticipate further debilitation. Often the Ts have greater hope that their vision can be restored than the others who know their blindness is related to a specific disorder and irreversible.

Adjustment

The Traumatically Injured group adjusted better to blindness than the Diabetics. The latter had not reached the nadir of the disease course, and blindness may be viewed as merely another step towards a future filled with progressive deterioration. On the other hand, one may say poetically that the Trauma group is adapting to living not to dying as are the Diabetics. They are alive after what was almost invariably a near-miss from death; the worst is over; and they have a future, however uncertain or unpleasant it may appear.

Conclusions

The measures utilized in this study to identify patterns and the knowledge of the traits themselves can be of value to rehabilitation personnel by alerting them to look for the Pattern of Retreat in Diabetics, and, if it is observed, to take some action to ameliorate its effects by fostering autonomy and discouraging the eight traits. The reader is cautioned not to interpret this study as an attempt to add to the stereotyping of blind people. The author is opposed to the too prevalent classification of "the blind" as a specific, distinct entity by the general

public as well as by researchers and professional personnel. The traits which were demonstrated to apply to the groups tested can help us understand, but should not be used to make predictions about behavior. Knowing they may be present could be of value to psychotherapists by assisting their comprehension of possible inner motivation or factors influencing their patients' behavior. While a treatment approach which encourages autonomy is suggested, specific ways of dealing with a person should be dictated by his unique needs.

It is not known whether one can interfere or intervene in the process. Therefore, it is important to study the factors in the rehabilitation program itself which may have caused subjects to profit from it or not. Rewarding or rejecting relationships with rehabilitation staff and clients have been previously shown to be relevant to the success of such efforts or lack of it (Sondheimer, 1970). Efforts to evaluate various types of rehabilitation settings and programs to determine whether it is possible to change adjustment level with different approaches, is recommended. Behavior modification diagnosis may be a helpful technique in this endeavor.

As previously mentioned, family attitudes may contribute to the success or failure of adjustment efforts. In line with this, there was essential agreement between the family/close associates' estimate of subject's adjustment to blindness and the rehabilitation personnel's evaluation. Frequently the family is blamed for interfering with progress by both the person receiving rehabilitation training and agency personnel. It is claimed that the family's perception of what their relative can do is often distorted and/or unrealistic. Although the present results would seem to disprove these conclusions, there were occasional contradictions between

family reports of adjustment and their actual behavior toward the rehabilitant. Though they may have responded that their blind family member was able to carry out independent functioning, their willingness to permit him to engage in these activities was often limited, and many expressed reluctance and fear. Thus, although some of their words suggest confidence, their attitudes connote anxiety, which, if communicated to the blind person may slow down his adjustment. Greater family involvement in the process is suggested, so that members are counselled in how to maintain the gains their rehabilitated relative has accomplished, once return to the community has been effected.

The findings with regard to the Diabetics were pessimistic. When facilities for rehabilitation are limited, the temptation might be to screen out poor prognostic cases. However, it should be noted that although the rate of success was lower for the diabetic than for the other two groups, about half of the D group did manage to function adequately. Further, the subtle defeatist attitude of family, physician and agency personnel could well affect the outcome of the diabetic's rehabilitation resulting in a self-fulfilling prophesy. Rather than limiting services, it is the responsibility of the agency to undertake efforts to alter such attitudes which may then lead to an enhanced rate of success.

Suggestions for Further Investigation

Other Populations

The present study was confined to males, since a female population of comparable size was not available at the rehabilitation center utilized. Some investigators (Brown 1939, Sommers 1944, Bauman 1954, Anastasi 1958) have reported differing degrees of success of adjustment

due to sex of the rehabilitant. Therefore, it is necessary to determine whether the personality patterns discovered to apply to Diabetic and RP men and to affect their adjustment can also be ascribed to women with the same eye disease.

I.Q. and educational level have previously been shown to positively affect level of adjustment (Veteran's Administration, 1958, Bauman 1954, Cowen et al 1961). Both of these variables were unusually high in the population studied (Superior I.Q. and above 12th grade level schooling were the means for all groups). Thus, it is suggested that the study be replicated at other agencies with more heterogeneous subjects.

Other Disorders

The positive findings in this study suggest that it is worth investigating other eye diseases which result in blindness, such as congenital cataracts or optic atrophy, to assess whether and the degree to which these patterns (Retreat and Compensation) may characterize the groups or whether different groups each have their own unique pattern. Other diseases which result in blindness and are as debilitating and progressive as diabetes, such as multiple sclerosis, would seem likely to produce a pattern similar to it.

Degree of Disorder

It would appear that the development of the Pattern of Retreat occurs in diabetics over a period of time, probably prior to blindness, and is reinforced by the latter condition. Study of the non-blind diabetics to determine whether they possess these traits, and at what point in the course of the disease they manifest themselves, seems particularly important with respect to the possible implications for rehabilitation training. Since

diabetes involves a complex of medical symptoms, body changes and complications and no universal agreement or conclusive evidence exists regarding psychological - physical interaction, additional medical investigation is proposed, to rule out a biochemical basis for the observed traits.

Type of Intervention

The most appropriate and effective means for eliciting positive motivation, discouraging a focus on death, and encouraging independent functioning needs to be systematically studied to foster adjustment to blindness, particularly for diabetics. An attempt to see whether a behavioral modification diagnosis can be helpful in determining the ways in which the actions of those with whom the blinded individual comes in contact either reinforces or dissipates a negative pattern might be made. If this is helpful, study of the application of these techniques to help develop independence is suggested. Which rehabilitative efforts, at what point, offered by whom, and under what circumstances are most likely to produce success? Alternate approaches in different settings might be explored and evaluated. The agencies themselves might also be studied in an effort to see whether they, too, may unknowingly be contributing to a Pattern of Retreat, because of their need for self-perpetuation. There might be instances when rehabilitative efforts would be better served if blind people were offered services in a generic agency rather than one set up specifically to deal with visual disability.

Timing

One of the criteria used to measure adjustment to blindness was successful completion of rehabilitation training. No attempt was made,

however, to note the speed with which training was completed. It might be important to know whether one group of subjects assimilates the material quicker as a further indicator of adaptation. Observation of the diabetics in the present study indicated that they took much longer to finish their training than those with retinitis pigmentosa.

The point of referral for rehabilitation services is another factor whose influence on adjustment is worth considering, particularly with regard to the traumatically injured. How long after an individual became blind were services initiated, and what was the waiting period from the time application was first made for rehabilitation until active participation in the program was realized. Because of the physical concommitants involved in most traumatic injuries, it is likely that those people affected have been in the hospital prior to their entrance into rehabilitation. One of the subjects in this study was confined to a hospital bed for thirteen months during which little attention was given to his visual disability while physical therapy and social/emotional therapeutic programs directed to his other injuries were actively instituted. As a result he was unable to deal with his feelings surrounding his blindness and thus to resolve them in any way. If active rehabilitation services for blindness were initiated during this time it may be possible to abort both the depressive reaction which has been reinforced and to decrease the delay of adjustment.

It would be helpful to follow up individuals after rehabilitation services have been completed to determine if gains have been consolidated or tend to be reduced as a consequence of interaction with the environment. Since blindness and its social meaning would appear to contribute to the

Pattern of Retreat, possible reinforcement rather than diminution would be noted in diabetics. Those with retinitis pigmentosa probably will not show the Pattern of Retreat traits, because, though blind, their attempts at bluffing, bravado and concealment, their compulsivity in mastering their environment, prevents many with whom they come in contact from recognizing their disability and so limits their receipt of negative public attitudes. Professional education for those in and outside the field might be called for to lower the likelihood of fostering such a negative pattern of traits. Particularly important will be an investigation of the Traumatically Injured on a longitudinal basis. Although no particular pattern of behavior emerged at the point of study, the necessity of dealing with a physical handicap over time may produce the kind of internal and external pressures which result in the development of specific patterns of coping.

Summary

Although previous investigators failed to demonstrate any relationship between type of eye disease and personality traits, speculative and anecdotal material reported in the literature, as well as the author's clinical experience at a large metropolitan agency for the blind were contrary to the reports. Some researchers indicated that individuals responding to a long term condition resulting in disability may react in a specifically predictable manner. Cutsforth (1952), who studied people's reactions to loss, proposed that they all choose one of two means of dealing with their situation. He labeled these attempts to manage the Pattern of Retreat and the Pattern of Compensation, each characterized by eight traits. The former is a passive, dependent orientation; the latter, an active, competitive approach to overcoming stress.

The present study was undertaken to determine whether the cause of blindness is related to particular patterns of reaction that influence adjustment. It was hypothesized that the external and internal pressures created by a gradually developing disability which results in visual loss and over which an individual can exercise no control should produce characteristic modes of behavior.

Three causes of blindness were studied; two of them gradually developing: Diabetes and Retinitis Pigmentosa (RP), and the third: Traumatic Injury. Sixty male clients receiving rehabilitation services were divided equally according to visual disorder.

The following hypotheses were tested: Diabetics develop a Pattern of Retreat which hampers their adjustment; RPs develop a Pattern of Compensation which assists their adjustment. No pattern of reaction was

hypothesized for the Trauma group, since they have no opportunity to develop specific coping mechanisms over a period of time.

A measure of the traits which comprise the Patterns of Retreat and Compensation was obtained from a sentence completions test. Rohde's scoring method was used. Adjustment was defined as ability to carry out daily routines and travel independently, to be relatively free from depression, and to be vocationally ready. These were measured by: staff evaluation reports, an attitude to blindness scale, observational data on successful completion of rehabilitation and return to community, and self and close associate ratings of these criteria. The results strongly supported the hypotheses.

Diabetics were found to be more Passive, Depressed, Docile, Compliant, Withdrawn, and Hysterical, and to have greater Feelings of Inadequacy and more Repressed Hostility and Guilt (Pattern of Retreat traits) than the other groups. They adjusted more poorly to blindness. It was concluded that the life-style necessitated by the disease fosters such a pattern. Although they verbally deny their limitations, their behavior reveals underachievement, a focus on death and a resistance to emotional well-being. The Pattern is reinforced by the publicly accepted, stereotypic view of the blind as helpless and incapable. A major finding was the dilemma of the Diabetics. To retreat and be submissive may be physically healthy because they avoid stress which is thought to produce a worsening of symptoms. Thus, adoption of the Pattern of Retreat has survival value and may prolong life, but it is emotionally unhealthy, because it limits adjustment to blindness.

On the other hand, RPs were found to be more Achievement-Oriented, Aggressive, and Compulsive, to Externalize to a greater extent and to Overcompensate (Pattern of Compensation traits) more than the other groups.

Three of the Compensation traits (Assertiveness, Competitiveness and Need for Mastery and Control) did not consistently differentiate the groups. RPs were shown to adjust better to blindness than either Diabetics or Traumatically Injured. The Pattern of Compensation did not seem an adequate model to describe their personality. A pattern conceptualized as Compulsivity and Control, which included Suspiciousness more effectively characterized the RPs.

The Hysteria/Compulsivity dichotomy most clearly differentiated the two groups, and determined their adjustment to blindness. The Diabetics fit into the structure created by their illness, become preoccupied with health, limiting the energies available to them for investment in learning new techniques to cope with blindness. The RPs create their own framework within which they function - becoming directed in attention, and actively searching out ways of apprehending their environment, an advantage, since these are qualities needed for adjustment to blindness (mental mapping, ordering their life space, organizing and managing their possessions and activities).

As predicted, the Trauma group possessed no pattern which could be identified.

The findings of this study have meaning for rehabilitation and psycho-social personnel whose concern is with providing the most effective services to blinded individuals to insure their independent functioning. The application of a behavioral approach to identify non-constructive attitudes and reactions on the part of family, physician, and rehabilitation personnel was suggested. The consistent encouragement of autonomy was recommended as a means for minimizing the effects of the Pattern of Retreat.

Investigating alternate rehabilitation training programming, professional education, family counseling, generic agency involvement, and longitudinal study, were all recommended.

Appendix A -- Description of the Rehabilitation Program

APPENDIX A

The Rehabilitation Program

The rehabilitation training program offered at the Lighthouse consists of an initial four week diagnostic period in which the unique needs of each individual are evaluated by a team which consists of medical worker, special education teachers, rehabilitation counselor, social worker and psychologist.

Skilled instructors evaluate his communication skills (written and oral), spatial orientation and mobility, personal management techniques (daily living and home economics skills), and manual dexterity. He participates in weekly group discussions, to determine his attitude toward blindness and assess the need for more intensive counseling. Recreational activities are offered to determine physical fitness. Individual counseling sessions are particularly beneficial in determining objectives and goals, and how realistic they may be. Each individual attends six 50- minute sessions a day, five days per week.

During this time, there is a thorough review of medical and opthalmological records-diagnosis, duration, severity of visual disorder, degree of impairment, family history of the disease, complications, restrictions in physical activities, as well as audiometric testing results.

Rehabilitation Plans

Following this period, a rehabilitation plan is formulated which will enable the individual to recapture lost skills, cope with, resolve and take care of some of his social, emotional and vocational needs, and function as an independent blind person.

Most often this involves participation in a thirteen week adjustment program which provides instruction and guidance in the areas of need. During this time, in addition to the classroom training, group therapy may be offered by staff psychologists to provide an opportunity for expression of fears and frustrations in an atmosphere where others may be experiencing similar feelings. If it is deemed necessary, individual therapy may also be part of the program. Although the program is generally set up to run for thirteen weeks, it does vary in duration and intensity of specific instruction with the individual.

Appendix B -- Material Used in the Study

The Lighthouse Rehabilitation Services

Sentences 12, 18, 30 and 33 not scored

SENTENCE COMPLETIONS TEST FOR USE WITH VISUALLY HANDICAPPED

Name_____ Age____ Sex____ Date_____

Examiner_____ Degree of Vision_____ When Blinded_____

Degree of Education_____

Instructions: Complete these sentences to express your real feeling. Try to answer every one. Be sure to make a complete sentence.

1. Our family _____
2. I feel _____
3. Fighting _____
4. Money _____
5. Work _____
6. I suffer _____
7. My friends _____
8. My mother _____
9. My mind _____
10. My greatest longing _____
11. My imagination _____

_____

13. I fear _____
14. My greatest trouble _____
15. Earning my living _____
16. I secretly _____
17. I cannot understand what makes me _____

_____

19. Religion _____

20. My worst _____

21. I am very _____

22. My childhood _____

23. Suicide _____

24. My father _____

25. I envy _____

26. My eyes _____

27. The dark _____

28. My chief worry _____

29. I feel the most proud of _____

_____

31. Death _____

32. My greatest ambition _____

_____

34. Love _____

35. I get pleasure from _____

36. At home _____

37. I feel hurt _____

38. Children _____

39. I become embarrassed _____

40. I am ashamed _____

MOBILITY DEPARTMENT CLIENT PROGRESS REPORT

Name of client: Name of instructor:

Date:

1. Human Guide -- Successful completion of the basic introductory lesson in mobility, depending upon some physical support from the instructor. A beginning trust in his sense of touch.
2. Indoor Travel and Cane -- Successful mastery of simple routes and good sound localization from room to room and floor to floor.
3. Residential Travel -- Successful mastery of paralleling traffic, using a particular cane technique, and an ability to order sequence street crossings, with emphasis on avoidance of traffic. Demonstrated ability to distinguish right from left. Ability to use these techniques in mapping and traveling.
4. Business Area -- Efficient use of traffic. Recognition of street patterns and street relationships using cardinal compass points. Successfully locating objectives and using stores and offices; using multiple turns and crossings.
5. Public Transportation -- The ability to use buses and subways; how to solicit aid and refuse aid, and how to navigate through irregularities in the path of travel (e.g. construction, parades, etc.).

(Ascending in order, on a five point scale, 5 represents greater accomplishment in terms of independence than does 1 through 4).

ADJUSTMENT TO BLINDNESS SCALE Cowen et al

1. A blind person might as well accept the fact that blindness makes people pretty helpless.
2. Most blind people feel that they are worthless.
3. A blind person should not have to meet the same standards as others.
4. Most blind people are dissatisfied with themselves.
5. The blind have as many interests as the sighted have.
6. Many blind people are economically independent.
7. It is possible to know the beauty of the world without sight.
8. It made me feel a little guilty to know that I could see when others could not.
9. Acceptance of blindness is the same as acceptance of anything else in life.
10. The blind adult is not quite as mature or "grown-up" as the sighted adult.
11. Most blind people think and act alike.
12. It is very difficult to make a blind person change his mind once he has decided on something.
13. One can live in a competitive society and still compete successfully without sight.
14. A blind person can never really be happy.
15. Blind people are more easily upset than sighted people.
16. It's difficult to understand the blind, because they keep so much to themselves.

17. It must be bitterly degrading for a blind person to depend so much on others.
18. Blind people are constantly worried about the future.
19. On the whole, blind children seem to be less intelligent than sighted children.
20. I feel that blindness is as hard to bear as complete paralysis.
21. A blind person can't afford to talk back to people.
22. You should not expect too much from a blind person.
23. Blindness does not change a person any more than any other physical handicap.
24. Blindness has little or no effect upon intelligence.
25. A blind person is constantly worried about what might happen to him.
26. A blind person is not afraid to express his feelings.
27. Blind people are used to failing in most of the things they do.
28. My attitude towards a blind person would be based more upon his personality than upon the fact that he is blind.
29. There are things worse than being blind.
30. Blind people do not have as much initiative as sighted people.

Appendix C -- Descriptive Data on Subjects

General Characteristics of Subjects

	Diabetes	Retinitis Pigmentosa	Trauma	F	P
Age					
Mean	38.3	37.4	38.4		
S.D.	12.4	11.9	13.4		
Range	21-60	20-54	22-65	.03	.96
I.Q.					
Mean	121.10	121.30	122.05		
S.D.	9.5	9.0	11.0		
Range	101-135	103-140	97-140	.14	.86
Education					
Mean	12.6	13.1	13.4		
S.D.	2.7	2.4	2.9		
Range	8-18	9-18	8-19	.44	.65
Months Blind					
Mean	16.2	18.0	16.2		
S.D.	11.7	10.4	10.0		
Range	6-48	6-42	6-48	.18	.84

Marital Status of Subjects

	Diabetes	Retinitis Pigmentosa	Trauma
Single	8	10	10
Married	10	7	5
Separated	2	2	2
Divourced	0	0	2
Widowed	0	1	1

Occupations of Diabetic Subjects
in the Study

Subject Number	Occupation Pre-Blindness	Occupation Post-Rehabilitation
1	Student	Student
2	Professional	Unemployed
3	Professional	Unemployed
4	Own Business	Unemployed
5	Student	Student
6	Unskilled Labor	Unskilled Labor
7	Skilled Labor	Unemployed
8	Student	Professional
9	Own Business	Unemployed
10	Skilled Labor	Student
11	Clerical	Unemployed
12	Professional	Clerical
13	Unskilled Labor	Unemployed
14	Professional	Unemployed
15	Clerical	Unemployed
16	Clerical	Unemployed
17	Own Business	Unemployed
18	Clerical	Unemployed
19	Unskilled Labor	Clerical
20	Clerical	Student

Occupations of Retinitis Pigmentosa Subjects in the Study

Subject Number	Occupation Pre-Blindness	Occupation Post-Rehabilitation
21	Student	Student
22	Professional	Student
23	Student	Student
24	Professional	Unemployed
25	Business Management	Unemployed
26	Business Management	Librarian
27	Clerical	Unemployed
28	Unemployed	Unemployed
29	Business Management	Business Management
30	Professional	Professional
31	Clerical	Clerical
32	Student	Unemployed
33	Student/Clerical	Professional
34	Student	Student
35	Professional	Professional
36	Unskilled Labor	Unemployed
37	Clerical	Clerical
38	Student	Student
39	Clerical	Professional
40	Skilled Labor	Business Management

Occupations of Trauma Subjects
in the Study

Subject Number	Occupation Pre-Blindness	Occupation Post-Rehabilitation
41	Student	Business Management
42	Skilled Labor	Student
43	Business Management	Professional
44	Professional	Professional
45	Professional	Unemployed
46	Skilled Labor	Unemployed
47	Professional	Professional
48	Professional	Professional
49	Student	Professional
50	Unskilled Labor	Student
51	Skilled Labor	Student
52	Skilled Labor	Unemployed
53	Professional	Professional
54	Professional	Professional
55	Professional	Professional
56	Student	Student
57	Skilled Labor	Clerical
58	Farmer	Unemployed
59	Unskilled Labor	Professional
60	Unskilled Labor	Unemployed

Type of Trauma

Street Accident	1
Auto Accident	4
Industrial Accident	1
Home Accident	1
Snowmobile Accident	1
Mercury Poisoning	1
Lye Burn	1
Alcohol	1
Attempted Suicide	1
Bar Fight	1
Mugging	1
Brain Tumor	4
Tubercular Meningitis	1
Unknown	1

Number of Subjects Scoring Above the Median in the Traits of Pattern of Retreat

Number of Traits	Number of Subjects in the Group		
	D	RP	T
8	4		1
7	4 (8)	1	1
6	3 (11)	1	3
5	4 (15)		3
4	4 (19)	1 (18)	4
3		1 (17)	1
2	1	5 (16)	3
1		6 (11)	1
0		5	3

Note: N - 20 for each group.

Number of Subjects Scoring Above Median
in Traits of Pattern of Compensation

Number of Traits	Number of Subjects in Group		
	D	RP	T
8		6	
7	1	3 (9)	2
6	2	3 (12)	1
5		1 (13)	3
4	3	1	2
3	3 (14)	1	3
2	6 (11)	4	3
1	3 (5)	1	4
0	2		2

Note: N - 20 for each group.

Interjudge Correlations for Patterns of Retreat and Compensation Traits

Pattern of Retreat	r
Passivity	.85
Depression	.99
Inadequacy	.99
Compliance	.96
Docility	.99
Repressed Hostility/ Guilt	.99
Withdrawal	.99
Hysteria	1.00
Pattern of Compensation	
Assertiveness	.97
Externalization	.98
Overcompensation	.98
Competitiveness	.98
Need for Mastery and Control	.99
Aggressiveness	.98
Achievement Orientation	.97
Compulsivity	.99

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