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THE REACTION TO DISABILITY IN
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DISSERTATION
Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By
Constantina Safilios Rothschild, Diploma, M. Sc.

* * * * * *

The Ohio State University
1963

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TO MY HUSBAND
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CHAPTER I

INTRODUCTION

Historical Background

The historical development and the nature of two important social programs under which a disabled worker usually falls, will be briefly examined before the research problem is presented. The two programs of concern in this study are the Rehabilitation and Workmen's Compensation program.

The rehabilitation program

The term rehabilitation can be found as early as the Middle Ages, referring to one's restoration to a previously held (and subsequently lost) nobility title or, later, to the re-establishment of one's good name. In the last hundred years the term has been often used with a variety of connotations ranging from public housing to penology. Rehabilitation only very recently, however, came to mean "the restoration of the handicapped to the fullest physical, mental, vocational, and economic usefulness of which they

2Ibid., p. 1.
are capable." The traditional man's attitude toward malformed or crippled individuals could well be the outstanding reason for this belatedness in the modern concept of rehabilitation.

In early civilizations victims of crippling or malformations were abandoned to their destiny and were often turned into beggars. In ancient Sparta malformed children were thrown down a precipice together with murderers and traitors. Christianity gave the first spur to elementary welfare activities by preaching the dignity and essential worth of human life and equality of all men in the eyes of God. However, because of the many surviving superstitions and the mysticism surrounding religion during the Dark Years of the Middle Ages crippled and malformed individuals were considered to be cursed by the Devil or possessed by him. As such, they were feared, hated, and often persecuted and tortured as collaborators of the Evil One and bringers of all kind of misfortunes to their town and fellowmen.

Following the awakening and enlightenment of the Renaissance mentally and physically handicapped individuals were no longer persecuted. Usually they found refuge amidst their large and tightly knit families, where they were still socially isolated but integrated within the family circle. Individuals suffering from severe mental disorders and some

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3 This is a definition issued by the National Council on Rehabilitation in 1942; ibid., p. 2.
kinds of physical disorders were given custodial care in asylums. Some chronic diseases became even popular if not desirable in the Post-Renaissance era, for instance tuberculosis among artists.

Although qualitative and quantitative differences surely exist, the social forces behind the development of the modern rehabilitation movement in both Europe and the United States are generally similar. We will proceed by outlining how this development took place in the United States.

A hundred years ago "The economic and political climate of the time was that of Laissez-faire and that was matched with the biological philosophy of survival of the fittest." The ideological foundations for social legislation on rehabilitation were provided, however, by the modern conception of democracy together with the Protestant doctrine emphasizing hard work as a means of salvation, active mastery of the secular world, and delegating all responsibility upon men to establish God's kingdom on earth.

Nevertheless, the first true rehabilitation efforts originated only around the turn of the twentieth century, a century of social concern for human welfare. At that time,


several social changes precipitated the legislation of rehabilitation and other welfare laws. The most important change was the transformation of the nation from a predominantly rural to a predominantly urban society with the replacement of farming by industry as the main productive activity. This change brought about a higher standard of living and a burgeoning economy which was not congruent with the abandonment of handicapped persons to subsist on charity roles. Another social change brought about to a large extent by the urbanization and industrialization were alterations in the family structure accentuating the need for special services for the handicapped. The nuclear family replaced the traditional family and the multiple functions of the latter were relegated to other societal institutions. Thus, disabled family members were often confined to asylums or to custodial care of some sort. However, it is claimed that "With the social and economic pressures of our great urban populations of today, relegating the handicapped to home confinement or to a lifetime in an institution is both morally and financially unsound." Furthermore, by means of advanced medical knowledge many individuals who had suffered severe injuries or ordinarily fatal diseases are now saved. Thus, the number of surviving crippled and disabled persons increased every day.

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6Allan, op. cit., p. 4.
7Ibid., p. 6.
Private groups, such as the Shriners, and specialized organizations, such as the National Tuberculosis Association first made some rehabilitation efforts. In 1899, the Cleveland Rehabilitation Center was the first pioneering venture in this new field. However, only in 1918 did the Smith-Sears Veterans' Rehabilitation Act initiated a nationwide vocational training program. Massachusetts and New Jersey were the first states to enact rehabilitation laws for the vocational training of disabled civilians and by 1920 a dozen states had similar legislation. In 1920, the Congress passed the Vocational Rehabilitation Act, which provided on an experimental basis federal funds to each state so that vocational training, counseling, and job placement could be offered to disabled civilians. Finally, "In 1935 the vocational rehabilitation program was established nationally on a permanent basis under the provisions of the Social Security Act." Rehabilitation programs developed at a very fast pace and became quite comprehensive during World War II. The public grew aware and became interested in such programs, while professionals and, especially, medical scientists found an opportunity and a challenge in rehabilitation for application of their knowledge and skills. The following important

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8Ibid., pp. 6-7.
9Ibid., p. 9.
10Ibid., p. 9.
developments stimulated interest and concern in rehabilitation: (1) advances in surgical techniques (especially orthopedic surgery and neurosurgery) and drug therapy, (2) Armed Forces and Veterans' Administration medical care and rehabilitation programs, (3) "selective placement" of disabled individuals in industry where they contributed to national defense, (4) interest in the job placement of returning veterans, (5) the so-called Barden-LaFolette Act (July 1943) expanding and improving the vocational program for civilians as well as generally expanded federal and state rehabilitation programs, (6) growth of rehabilitation facilities, (7) development of physical and occupational therapy as effective disciplines in the physical restoration of handicapped persons, which led to the establishment of physical medicine as a new medical specialty. 10

At present, rehabilitation is considered as a "third phase" of medicine after prevention and treatment. There are indications, however, pointing to the lack of interest of many physicians in rehabilitation beyond the scope of the actual treatment. 11 Ideally, rehabilitation starts from the time a patient is treated and is carried through during and

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10 Allan, pp. 8-13.
11 Ibid., p. 29.
after convalescence. The objectives of rehabilitation according to a medical authority in the field are:

(1) To eliminate the disability if that is possible. (2) To reduce or alleviate the disability to the greatest degree possible. (3) To restrain the person with a residual physical disability to live and to work within the limits of his disabilities but to the hilt of his capabilities.12

Within the spirit and ideal of rehabilitation, for the first time in the history of man, mentally or physically handicapped individuals are not objects of hatred, ridicule, curiosity, pity, compassion, or philanthropy. On the contrary, they are helped to become as much as possible independent, self-caring, self-supporting, and especially, self-respecting.

The Workmen's Compensation program

In the particular case of a worker injured at work, the Workmen's Compensation program provides him with certain advantages and disadvantages, especially with regard to his rehabilitation. Before Workmen's Compensation laws were enacted an injured worker had recourse to poor relief or he could sue his employer for damages, but he had then to prove that his injury was due to negligence by the employer. The

court procedures were "slow, costly and uncertain."\textsuperscript{13} In the beginning of the twentieth century and before the nation-wide rehabilitation legislation the Workmen's Compensation laws were passed.\textsuperscript{14} The federal government initiated the program in 1908 (Civil Employees Act), but the first law actually to take effect was in Wisconsin in 1911. By 1930 all but six states had passed similar legislation; all states were covered by Compensation laws in 1948.\textsuperscript{15}

Workmen's Compensation aimed at preventing accidents by setting the premiums to be paid on the basis of the accident rate in the particular industry. The second and, in a way, the most important aim of this program was to provide sure and prompt benefits to replace at least a reasonable part of the normal, expected wages of injured workmen. "Medical care was considered a supplementary benefit; cash indemnity was the primary consideration."\textsuperscript{16}

The economic theory underlying Workmen's Compensation is known as "the doctrine of occupational risk." According

\begin{itemize}
  \item \textsuperscript{13}Analysis of Workmen's Compensation Law (prepared by the Chamber of Commerce of the U.S., Washington, D.C.), p. 3.
  \item \textsuperscript{14}Kessler writes that "Civilian rehabilitation was originally a child of Workmen's Compensation," in Kessler, p. 23.
  \item \textsuperscript{15}Allan, \textit{op. cit.}, p. 130.
  \item \textsuperscript{16}An excellent discussion of Workmen's Compensation is provided by Kessler, Low Back Pain in Industry, pp. 13-25. This particular reference is from pp. 13-14.
\end{itemize}
to this doctrine "The economic loss which results from . . . disablement is . . . considered a cost of production, and should be incorporated into the price of production in accord with the current price system." This legislation rendering the employer responsible for personal injury in the course of employment and by providing the worker with a certain financial security constituted a step ahead in progress and human welfare.

During the last years, however, the entire compensation program has been attacked and criticized and its beneficial effects upon the injured workmen greatly doubted. More specifically, the compensation program is failing to restore quickly and fully the disabled worker to gainful employment. Some of the reasons for this failure are: (1) Awards are made not on the basis of physical injury but rather on the basis of disability produced by an injury at work. This then raises technical, legal difficulties with regard to the definition and delineation of the "compensable disability." Larson states that there are two ingredients in the legal definition of disability.

.... the first ingredient is disability in the medical sense, as evidenced by obvious loss of members or by medical testimony that the claimant can not make the necessary muscular movements and

17 Analysis of Workmen's Compensation Law, p. 3.

exertions; the second ingredient is de facto inability to earn wages, as evidenced by proof that claimant has not in fact earned anything.\(^{19}\)

Due to the second ingredient of disability described above, in some cases compensation actually rewards the unwillingness to return to some kind of gainful employment. Especially, as many disabled workers fear that even if they succeed in finding work, they may be soon dismissed due to a (true or alleged) disability-connected absenteeism or low level of performance. It is, then, understandable why some workmen (particularly the unskilled ones) may prefer the low but easy and certain income of compensation to the uncertainties and difficulties encountered in finding, securing, and holding a job when disabled.

2) **The extreme emphasis on cash benefits obstructs effective medical care and prevents the successful rehabilitation of the disabled workers.\(^{20}\)** The injured worker, realizing that his earning capacity as well as his employability have been jeopardized, attempts to secure a financial compensation that will, in a way, make up for his losses. Supported by quite a widespread and emotionally charged belief that no physical loss is ever adequately compensated by money, he tends to find that all payments made

\(^{19}\)Ibid., p. 2.

to him are inadequate.\textsuperscript{21} He often employs an attorney who, in turn, has non-altruistic motives since his fees are a percentage of the final settlement. This attorney often urges the injured worker to seek medical care not necessarily from an expert doctor but from one who will cooperate and adeptly testify in Court.\textsuperscript{22} Both the attorney and the cooperating doctor discourage the afflicted worker from attempting to return to some kind of gainful employment; he finally rejects any program of physical or vocational rehabilitation prior to the determination of his award. By the time the worker finally receives an award his disability is usually "fixed" and his physical restoration becomes a very difficult if not an impossible task. Besides, the long period of unemployment has often, as least in the case of unskilled and semi-skilled workers, rendered them reluctant to think in terms of vocational planning or vocational training.

In case of lump sum settlements some workers feel this capital is their life opportunity to establish a small business and become independent. Lump sum settlements, however, are usually much smaller than what the worker estimates. The sum of money is soon wasted, possibly due to lack


\textsuperscript{22}Aitken, \textit{op. cit.}, p. 10.
of experience, and the worker is left disabled and unprepared for gainful employment.

Two available studies of patients suffering from low back pain (the most widespread disability among industrial workers) indicate that: (a) Compensation and liability patients do not respond as satisfactorily to surgical intervention as do private patients;\(^2\) (b) fewer compensation patients than private patients were rated as improved at time of discharge from hospital, improvement being measured largely on subjective grounds (the patients were considered unimproved if they still complained of pain and failed to return to work regardless of objective improvement\(^2\)); (c) more compensation patients than private ones delayed for a longer time seeking treatment;\(^2\) (d) compensation patients often receive inadequate therapy for a prolonged period of time (for example, heat therapy is the only kind of physical therapy they usually receive) so that they develop prejudices and extreme resentment against doctors, hospitals, physical therapy modalities, and treatment in general.\(^2\)


\(^2\)Ibid., p. 1131.

\(^2\)Ibid., p. 1131.
In conclusion, then, the Workmen's Compensation program is limited because instead of facilitating it often hinders the physical and vocational rehabilitation of the injured worker. Instead of a tax consumer the injured worker could become a productive taxpayer by returning to normal working capacity, if rehabilitation would become an integral part of Workmen's Compensation Programs.

Rehabilitation under Workmen's Compensation

Rehabilitants with claims to industrial compensation are often caught in a conflict between dependence and independence. On the one hand, rehabilitation programs provide them with the opportunity and the means to become independent by reducing or alleviating their disability and returning them to gainful employment. The workmen's compensation system, on the other hand, provides long term regular payments or a lump sum settlement for those who cannot return to work because of their disability. Thus, while rehabilitation emphasizes the residual capacities the disabled person still possesses, compensation tends to accentuate the disability. Because "damage award is emphasized rather than the return to gainful employment the claimant comes to feel that his security is enhanced for himself and his family by favoring his disability and continuing to collect benefits." 27

27 Keifer, et al., op. cit., p. 71.
Compensation, therefore, often becomes a hindrance to the full utilization of rehabilitation services. Claimants sometimes reject physical and vocational rehabilitation because they fear that such services are offered with the sole purpose of reducing the amount of the award.

Through the compensation system it is the responsibility of employers to meet and solve problems stemming from industrial impairments. The magnitude of the problem can be illustrated by the number of people afflicted. In an average work day 62 workers are killed by accidents that occur on the job, 350 become permanently impaired and 7600 suffer injuries that will keep them from work for an average period of about 18 days. Both permanent and temporary disabilities result in loss of time and wages as well as expenditures for medical and hospital care. Paradoxically, there are indications that the amount of time lost from work does not increase with the severity of the disability. On the contrary, it seems that the reverse is true in some cases. In other words, minor injuries often result in longer time loss.

On the basis of this discussion, it can be concluded that other factors in addition to the nature and severity of the physical disability determine the future course of

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29 Keifer, et al., op. cit., p. 70.
recovery and rehabilitation. Important among such extra-medical factors is the definition of the disability on the part of the person afflicted. This assumption is in agreement with the general proposition of the "definition of the situation" which states that situations have different meanings for different individuals. Background experiences and personality traits are of particular import in the definition of the situation. The meaning and significance of disability to a disabled person will, to a great extent, determine his reaction to it as well as his response to recovery and rehabilitation. Furthermore, it is assumed that differences in definitions of the situation would manifest themselves in different overt reactions to the disability.

The research problem

The primary objective of this research is the delineation and study of rehabilitants' reactions to disability. As previously discussed, it is assumed that it is the rehabilitant's definition of the disability and not the nature of the disability per se that determines their behavior, and more specifically, the type of reaction to their disability. For this reason the role of nonmedical as well as medical factors in the formation of different types of reactions will be examined.
The specific objectives of this study are:

a) The construction of a theoretical typology of reactions to disability and the testing of this typology as to its applicability to the available data.

b) The examination of the typology of reactions to disability with regard to a number of antecedent variables including some of the rehabilitants' personal, social, and medical characteristics.

c) The investigation of the consequences the different types of reactions have upon the rehabilitants' response to rehabilitation.

Significance of the problem

Results obtained through the present research are expected to have important theoretical as well as practical implications. The examined problem provides for the testing of theoretical models such as those related to self-conception, deviant behavior, reactions to disasters and life reorganization. The study is also expected to shed some light on the social psychological components of disability and their role in the dynamics of rehabilitation.

From the practical point of view, results should be of value to health practitioners especially in the field of rehabilitation. The findings and their implications should provide therapists and counselors with verified knowledge to be utilized in screening and in rendering services to physically handicapped persons.
CHAPTER II
THEORETICAL ANALYSIS

Theoretical Outline

It is a well established social norm that sick individuals not only can but are also required to relinquish their normal social roles, provided this is legitimized by the doctor’s orders.¹ Due to this special privilege accorded to patients, illness sometimes becomes an escape from undesirable or burdensome social responsibilities. The role of the doctor requires of him to distinguish between the "truly" sick and the "malingering." This distinction is becoming, however, increasingly difficult especially in the case of diseases in which emotional components play an important role in etiology and symptomatology.

Persons who have assumed the sick role legitimately may find the privileges of this role so convenient that they are not eager to relinquish them. In this way, they deviate from another important social norm governing the sick role, namely that individuals who have resumed this role must seek expert help (medical care) and use all available resources to regain health.²

²Ibid., p. 437.
In the case of certain illnesses residuals stay with the afflicted individuals after the termination of medical treatment. Depending upon the nature and the severity of those residuals the disabled persons may be legitimately exempted from certain normal social responsibilities. Again, at least ideally, a medical expert should legitimize the presence of residuals. In this case, however, the determination of the degree of disability—even when feasible by means of elaborate tests—is not always meaningful in specifying which social roles the rehabilitant is unable to perform. Persons with exactly the same degree of medically determined disability may perform a completely different range of normal social roles due to differences in background characteristics (such as sex, age, education, occupation) and socio-psychological characteristics (such as social class, attitude toward the disability). Thus, it is not the disability itself but the definition of the disability in terms of characteristics, attitudes, and experiences that determines the behavior of disabled persons. For example, an arm amputation may be defined as a calamity by a manual worker for whom it definitely constitutes a handicap but may be defined only as an inconvenience by a secure college professor. Furthermore, medical legitimation of some

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disabilities such as back disabilities can become difficult and uncertain especially in cases where objective findings are not significant but the person claims he is experiencing a disabling and incapacitating pain. Furthermore, some individuals among those who experience such an ill-defined pain are willing and able to perform all or most of their normal social responsibilities and others are not. Individuals, then, with low back pain can at best be only "semi-legitimately" exempted from normal expected social roles.

In the American culture where a great emphasis is laid upon physical and financial independence, disability is an undesirable state. Disabled persons are disfunctional when they remain unproductive and do not fulfill certain social responsibilities. In order to check this loss in productive members, society developed a system of social control for disability: The rehabilitation system. Since such a service now exists, disabled persons are under the obligation to seek the available rehabilitation services, to be motivated to become rehabilitated and to fully cooperate with efforts rendered toward this goal.

Since disability entails at least "semi-legitimately" certain exemptions from social roles it can become a devious means for escaping the performance of these roles. In such a case the disabled persons may postpone for a long time, or forever, seeking rehabilitation services and thus remain with their potentially controllable physical limitations and the
resulting granted or claimed exemptions from social roles. Some of them may eventually be required to seek rehabilitation services by being referred to a rehabilitation center (or a similar service) by their attending physician or some agency (such as the Industrial Commission).

Within the framework of the American culture activity in general and more particularly, in the case of men, the performance of the occupational role is predominantly stressed. Furthermore, all workers in the present sample have some limitation in the area of work.

It is, therefore, assumed that this role exactly would be the one role "malingering" sick or disabled persons may mostly desire to escape. When such individuals are admitted to a Rehabilitation Center they may either resist any rehabilitation effort or they may be willing to cooperate with parts of the program aimed at reducing their pain or generally improve their physical condition. However, when physically improved to the extent of becoming capable to resume the working role, persons who derive secondary gains from disability may suddenly regress physically, deny any

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3The term "malingering" implies that always the person is consciously "faking" his symptoms. We do not want to imply that this is always true for all persons retaining illness or disability for the "secondary gains" derived from it. It may well be that at least some of them are not at all aware of an emotional mechanism operating probably subconsciously to provoke pain or other symptomatology.
improvement and, threatened to lose their privileges, may request to be discharged.

Disability may lead to deviant behavior even more when it is "compensable" as in the case of industrial workers injured at work. Success, particularly monetary success is emphasized as the primary cultural goal for Americans of all social classes although the means and chances of achieving the goal are very unevenly distributed in the different classes. According to Merton, whenever the institutionalized goals and means are not well integrated for all members of a society a strain toward anomie is produced, and these members may become deviants. Since, therefore, in the American culture the emphasis is mainly on the goals and not on the means, people tend to deviate mostly with regard to the means. Merton's typology of Modes of Individual Adaptation describes the different kinds of responses of individuals according to whether the institutionalized goals or means are rejected. According to this typology, "innovators" accept the goal of monetary success but not having access to institutionalized means they are willing to use "semi-legitimate" or illegitimate means to achieve the valued culture goal. It is expected that some disabled workers

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5Ibid., pp. 134-140.
6Ibid., pp. 134-140.
may react to their disability by becoming "innovators." They may use non-institutionalized means—namely the Workmen's Compensation—in order to attain a large sum of money through a "successful" settlement with the Industrial Commission. Toward this end they may hire a competent attorney, consult a physician who will skillfully accentuate their disability in Court, and resist any rehabilitation effort.

Other disabled workers may react to their disability with "retreatism," which is characterized, according to Merton, by rejection of both the goal and the means. Such workers would reject both the cultural goal of monetary success—financial independence and the institutionalized means of hard work by planning to retire from the occupational world.

Both the "conformist" and "ritualistic" adaptations described by Merton involve an acceptance of the institutionalized means; what distinguishes the two modes of adaptation is that although in the latter the cultural goal of monetary success is rejected, institutionalized means are used steadily and routinely. Disabled workers who "conform" by accepting both the institutionalized means of hard work and the goal of monetary success are probably few.

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7Ibid., pp. 142-144.
8Ibid., pp. 140-142.
Possibly some skilled workers and foremen, belonging to the lower-middle class may really believe in the goal of success since wages from work often provide them with a fairly comfortable living. Skilled workers may react to their disability by planning to establish a small repair business in the area of their skill, often realizing an old dream. Such a plan falls still under the range of institutionalized means. However, the majority of semi-skilled and unskilled workers are expected to react by "ritualism" when they plan to return to work. Most of them reject the goal of monetary success which they recognize is outside their reach and are resigned to this fact. They may find work quite important, however, as an activity in itself, although they may know they are not going to achieve success through it. They may desire to work even when their disability forces them to accept jobs with less status or pay.

Merton describes "rebellion" as: "This adaptation leads men outside the environing social structure to envisage and seek to bring into being a new, that is to say, a greatly modified social structure. It presupposes alienation from alienation from reigning goals and standards."⁹ It is expected that some disabled workmen who are physically able to return to their former jobs—that are open to them—may

⁹Ibid., pp. 144-146.
reject this vocational alternative in a quest for prestige. They may reject their position in the social structure and attempt to use non-institutionalized means—such as the services of the Bureau of Vocational Rehabilitation—in reaching the goal of "status-improvement." Although self-improvement is a dominant value in the American culture, when it is sought despite insurmountable educational, vocational and motivational shortcomings, it lacks realism as a vocational plan. It is expected that such workers would tend to be predominantly young as there are indications that rebelliousness is characteristic of young lower class persons and it is replaced by apathy in older age. This category of workers who reject their former routine and uninteresting jobs in an unrealistic plan to achieve more prestige without

\[10\] When a disabled worker is physically able to return to his former job which is open to him, he is not considered to have a substantial handicap and is not eligible for vocational training through the Bureau of Vocational Rehabilitation. It is then obvious that he simply desires to improve his status which is not, however, one of the Bureau's services. From a personal interview with Perry Hall, Vocational Rehabilitation Counselor at the Ohio Rehabilitation Center, Columbus, Ohio.

\[11\] According to Parsons' typology of directions of deviant orientations, the "conforming" disabled workers are the non-deviant ones, the "ritualists" fall in the "compulsive performance orientation," the "innovators" into the "compulsive acquiescence in status-expectations," the "rebellious" in the "rebelliousness" category, and the "retreatists" in the "withdrawal" category. Parsons, *op. cit.*, pp. 256-258.

really working for it may be considered to be "rebellious" not exactly in Merton's usage of the term but rather in a more general of the term, such as to include all rebellious tendencies and rejection of the existing social structure.

Summarizing the theoretical outline:

1) Disability may become a deviant mean in escaping the performance of normal expected social roles, especially the occupational role.

2) Disabled workmen who derive some kind of secondary gain from their disability (such as exemption from the occupational role) are expected to resist rehabilitation and generally not to improve while at the Rehabilitation Center. When also the disability is compensable, the financial compensation involved, increases the inclination for deviancy.

3) In case of disability the legitimation of exemption from social responsibilities is based not only on the nature and degree of disability, but also on the afflicted individual's background, social, and psychological characteristics.

4) Applying the general principle: "it is not the situation but the definition of the situation that determines behavior," in the case of compensable disability we can hypothesize that: It is not the degree or the nature of disability but rather the definition of disability by the disabled workmen that determines their reaction to disability.
5) Disabled workmen who derive some kind of secondary gains from their disability (such as exemption from the occupational role) are expected to resist rehabilitation and generally not improve while at the Rehabilitation Center.

**Definition of Terms and Specific Hypotheses**

1. **Background characteristics**

   (a) Age at onset of disability and age at admission to Rehabilitation Center.—There are indications that the older worker encounters difficulties in finding employment in industry. In industry a worker is usually considered to be old if he is over forty-five. Disability, on the other hand, disqualifies many workers from employment in certain types of work and in certain industries. It is hypothesized that among disabled workers the older ones will tend to discontinue their working roles, or that advanced age is negatively related to planned continuity of the working role.

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13 In the case of most background characteristics no definition of the terms or any additional discussion is needed as they are self-explanatory and measured in the standardized fashion. They are mentioned only with regard to specific hypotheses concerning them.

14 A discussion of the restrictive policies and practices which bar older workers from employment at a time when they mostly need employment for support as well as for accumulation of assets for the retirement years may be found in *Developments in Aging, 1959 to 1963*, a Report of the Special Committee on Aging, United States Senate (Washington, D.C.: Government Printing Office, Report No. 8, 1963), p. 47.
(b) **Education.**—Since education is measured in years of formal schooling and the educational achievements of industrial workers will most probably be included within a narrow range of schooling years, education is not expected to be significant in the definition of, and the reaction to, disability. The type of occupation, disabled workers with the same amount of education, engage in after they leave school is assumed to be much more revealing of their attitudes and values. The hypothesis is stated as a null hypothesis, namely that there is no relationship between education and reaction to disability.

(c) **Number of dependents.**—Rehabilitants with a large number of dependents may feel under a great pressure to establish the pre-Injury economic level and therefore could be expected to be the most anxious to return to their former employment or to some other kind of gainful employment (that would guarantee them a similar economic level). On the contrary, rehabilitants with a small number of dependents are expected to feel freer to discontinue their working role and probably live on a reduced income or to take certain risks (especially that of an uncertain income) by establishing a small business. Therefore, we hypothesize that the number of dependents is related to the type of reaction to disability.

(d) **Marital status.**—Due to the rather advanced median age of the rehabilitants under study it is expected that the
vast majority of them will be married at the time of admis-

sion to the Rehabilitation Center, with the exception of a

very small number of widowed or divorced rehabilitants.\textsuperscript{15}It is believed that it is not the marital status itself but

rather the satisfaction derived from the marital status that

is an important determinant of attitudes and behavior.

Therefore, it is hypothesized that marital status is not

related to the type of reaction to disability.

(e) Marital history.—Two variables relevant to the

rehabilitant's marital history were available in our data:

(1) Length of last marriage and (2) Number of times the

rehabilitants had been widowed, divorced, or separated.

(For the different categories of the latter variable see

Appendix I).

It is established that divorce and separation is quite

acceptable and frequent in both the working and lower class.

It is, therefore, possible that divorce (or separation) is

also indicative of other values held by working and lower

class persons, such as little value placed upon work and

economic independence and a relative lack of a sense of

responsibility toward maintaining their family at a somewhat

\textsuperscript{15}The median age of 126 rehabilitants with back

impairments admitted to the Ohio Rehabilitation Center from

1956-1960 is known to be 41 years, from Saad Z. Nagi,

"Characteristics of the Industrial Back" at the Ohio

Rehabilitation Center." Paper read before the Ohio State

University Seminar on Rehabilitation of Industrial Back

Injuries, Columbus, Ohio.
comfortable standard of living. We hypothesize that: The existence of divorces or separations in the marital history is negatively related to planned continuity of the working role.

We may furthermore assume that a long marriage (referring to the rehabilitant's last marriage) indicates a certain degree of satisfaction from it and also that the rehabilitant feels attached and responsible toward his family. The rehabilitant then probably holds the lower-middle class value of respectability and a constellation of other values going with it.\(^\text{16}\) We can hypothesize, then, that: the length of the last marriage is positively related to planned continuity of the working role.

2. Socio-psychological variables

(a) Social class.—The concept of social class is important because of the values and attitudes "ideally" permeating each class. By determining whether the rehabilitants belongs to the lower-middle, working, or lower class we also determine to some extent their attitudes toward work, their goals, and their predominant values.\(^\text{17}\) We would expect that lower-middle class rehabilitants, who value respectability, family responsibility, and financial independence, to plan to

\(^{16}\text{Kahl, op. cit., pp. 202-205.}\)

\(^{17}\text{Ibid., pp. 184-217.}\)
continue their working role. On the contrary, working class disabled workmen who have always found work meaningless and burdensome but an unescapable necessity to "get by" may be more inclined to discontinue their working role and continue going on a probably reduced but stable income from Workmen's Compensation. We finally could expect that lower class disabled workmen who have never valued steady work or financial independence (since they may have previously subsisted on Welfare or financial help from relatives and friends) to welcome this "semi-legitimate" opportunity which disability offers them in regard to a discontinuation of their working role and to live thereafter on Workmen's Compensation. Therefore, we hypothesize that: higher social class is positively related to planned continuity of the working role.

The rehabilitants' social class was measured on the basis of their occupational rank as determined by the North-Hatt Scale (for further details see "Measurement of Social Class" in the Methodology Section). In assigning the social class to occupational ranks, Kahl's class assignment of occupations was utilized.21

18 Ibid., pp. 202-205.
20 Ibid., pp. 210-215.
21 Ibid., pp. 76-82.
(b) **Lapse of time between onset of disability and admission for rehabilitation.**—We consider this variable to be a socio-psychological one because the length of time the disabled worker waits before he seeks rehabilitation services may indicate his motivation and desire to overcome his disability. According to our discussion in the Theoretical Outline we would expect that disabled workmen who enjoy the exemptions from expected social roles due to their disability, would tend to postpone rehabilitation plans. On the contrary, workmen who are dissatisfied with limitations their disability imposes upon the performance of social roles, would tend to be eager to become physically restored and fit to perform these expected social roles. Furthermore, if for any reason workers stay for many years unemployed with intermittent periods of medical treatment and sometimes unsuccessful attempts to work, they may finally become so demoralized that they are unwilling to return to work altogether. We hypothesize then that: (1) The **lapse of time between onset of disability and admission for rehabilitation is related to the type of reaction to disability,** and (2) a **long lapse of time between onset of disability and admission for rehabilitation is negatively related to planned continuity of the working role.**
3. Medical variables

(a) Number of disability-connected surgical operations.—Individuals afflicted with incapacitating low back pain due to injury or other causes may be either given conservative treatment (consisting mainly of physical therapy) or may be submitted to one or more surgical operations. It seems that surgical measures have been taken often unnecessarily and with poor results.22 There are indications, however, that after conservative treatment has been tried for a length of time to no avail and the patients seem to be good surgical risks, surgical treatment may improve them to the extent that they are fit to return to work.23 Whether disabled workers who have undergone surgery owe their physical improvement and eventual return to work to the beneficial results of surgery or they were given the benefits of surgical treatment because they seemed to be willing to return to work, we could hypothesize that:24 conservative treatment


24Rehabilitants who have been given only conservative treatment have not been freed of incapacitating pain since they have been admitted to the Rehabilitation Center. The reason, then, that they were not recommended for surgery could be that they were thought to be unwilling to get well (unless, of course, they themselves were opposed to surgery).
of low back pain is negatively related to planned continuity of the working role

(b) Nature of disability-connected surgical operations.

There are two kinds of surgical operations that persons with low back pain most often undergo: **laminectomy** and **fusion**. Dorland's Medical Dictionary defines laminectomy as "the excision of the posterior arch of a vertebra" and spinal fusion or spondylosyndesis as "operative immobilization or ankylosis of the spine." Kessler describes laminectomy as a "decompression of the roots (that) offers some chance for relief of pain" but it seems that the results from it are not often satisfactory. Spinal fusion is sometimes performed with a laminectomy while some surgeons reserve fusion for patients who complain of severe pain after having undergone one or more laminectomies. It seems that even after the involved vertebrae have been fused, the incapacitating pain may persist if the performed fusions have not consolidated and a "pseudoarthrosis" has been created.

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26 Ibid., p. 1288.


28 Ibid., p. 62.

29 Ibid., p. 62.
There are indications, however, that workers with low back pain who have undergone fusion tend to improve physically and achieve rehabilitation goals much more often than those who underwent only laminectomies. Possibly, fusion representing the last resort in the medical treatment of low back pain may offer to the rehabilitant symbolic as well as medical benefits. Therefore, we hypothesize that:

fusion is positively related to planned continuity of the working role

(c) Severity of disability.—The severity of disability is often assessed on the basis of a clinical judgment usually made by a physician. In such a case, it is not exactly known what is measured by "severity of disability" since the criteria entering into the clinical judgment are not precise and explicit. If the concept is narrowed down to a particular reference, something may be lost in information about the general picture of the individual's abilities and disabilities but a great deal is gained in clarity and specificity. The research schedules devised by the Social Research Staff of the Rehabilitation Center include four areas of activities in reference to which severity of disability is measured: Functional activities of daily living (ADL), Communication Activities, Travel Activities, and Work Activities (see Appendix I).

30 Nagi, Paper read before the Ohio State University Seminar on Rehabilitation of Industrial Back Injuries, Columbus, Ohio
For the purposes of this study two specific measures for severity of disability will be separately used: (1) the degree of severity of the handicap in work and (2) the number of areas (ADL, Communication, Travel, Work) in which the rehabilitant has as a handicap. The degree of severity of handicap in work was chosen as a measure of severity of disability because: (a) all examined rehabilitants with back impairments had a handicap in work, (b) 80 of the 147 examined cases (54.5%) had a handicap only in work, and (c) of the 67 cases, which presented a handicap in other areas except work, forty (70.6%) presented the same degree of handicap in work as in the other involved areas. For example, if a rehabilitant has a slight handicap in work, he also has a slight handicap in the other(s) involved areas of travel, communication, or ADL.

On the basis of the number of areas for which the disability is a handicap, rehabilitants are classified into the following four categories:

1. Rehabilitants with a handicap in work only.

2. Rehabilitants with a handicap in work and a handicap in either communication or functional ADL. (No case with a handicap in two areas presented a handicap in travel activities.)

3. Rehabilitants with a handicap in work and in two other areas of activities.
4. Rehabilitants with a handicap in all four areas of activities.

As presented in the Theoretical Outline our central proposition is that: It is not the nature and degree of disability but rather the definition of the disability that affects behavior. From this proposition we can easily derive the more specific hypothesis that: The severity of disability is not related to the type of reaction to disability.

4. Work morale

The rehabilitant's work history reflecting past occupational attitudes and experiences is expected to be a crucial factor in the determination of future vocational planning. Included in the work history are several variables such as: work morale, occupational stability, length of gainful employment, average job tenure, and existence of vocational problems. Some of these variables are rather vague and hard to define and measure. For example, it is extremely difficult to establish objective criteria for judging the stability of work of individuals engaged in different occupations. Especially, in the case of semi-skilled or unskilled workers who, by the nature of their work may move frequently, the concept of occupational stability becomes practically meaningless.

In the present study there are no complete data available for many variables pertaining to work history with the
exception of length of gainful employment, work morale, existence of vocational problems, and length of employment at last job.\textsuperscript{31} We assume that the most important variable in a person's work history is his work morale since it is the only variable that gives indications about satisfaction from work, attitudes toward work and general values. Every work situation can be analyzed into the monetary rewards and the non-monetary satisfactions it may offer to the employed individual. Non-monetary satisfactions may consist of opportunities for exercising initiative, leadership, or for expressing creativity and originality. If work morale is defined as one's involvement in one's work, it can be assumed that individuals of high morale would derive non-monetary satisfactions from their job. Their job provides them with much more than wages; it provides them with a sense of pride, accomplishment, and satisfaction often derived from the very performance of the work involved. Such individuals tend to identify with their occupation while, on the contrary, persons of a low work morale due to the usually mechanical nature of work performed are detached emotionally from their jobs.\textsuperscript{32} Workers low in morale are only interested

\textsuperscript{31}There were complete data for the average job tenure but they were not useful because the rehabilitant was considered to have changed his job only if he moved from one Census occupational group to another.

\textsuperscript{32}D. Brunner writes: "The man or woman who works in a factory has no real attachment to his particular job unless he is quite highly skilled," "Why White Collar Workers
in the pay check they bring home at the end of a week of drudgery.

A nationwide survey of the labor force conducted by Morse and Weiss indicated that men working at "the less interesting, less prestigeful, and less autonomous jobs would like most to change their jobs if the opportunity were provided." The compensable disability provides this opportunity to the examined rehabilitants. It is expected, then, that rehabilitants high in work morale will plan to continue their working role and will be therefore motivated to improve physically as much as possible. On the contrary, rehabilitants of low work morale, attracted by the steady income provided by the Workmen's Compensation, are expected to plan to discontinue their working role. Such income is not much lower than their usual wages and it is sufficient to free them of their meaningless routine jobs. We can hypothesize then that: low work morale is negatively related to planned continuity of the working role.

Attitude toward disability

There is a high degree of concensus among investigators that (1) a disability affects the afflicted person's


self concept and (2) the definition of the disability on the part of the individual determines to a large extent his attitude toward it. The following discussion of the attitude toward disability will be based upon the above established facts and the socio-psychological position that normally persons have a generalized self-concept—relatively stable and persisting—and a number of self-images changing from situation to situation.

An injury brings about usually a number of changes in the physical appearance and/or the bodily sensations of the injured individual, or otherwise a number of changes in his body image. The nature and magnitude of this change in the body image will determine the modifications that will become necessary in one or more of the afflicted person's segmental self-images. Furthermore, the nature and magnitude of the modifications in the segmental self-image(s), as well as the individual's attitude toward his generalized self-concept, will finally determine whether the injury will

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result in a change and discontinuity in the over-all self-conception.

Generalized self-conceptions are usually persisting and self-sustaining. When one or more self-images are modified due to an injury the disabled individual in an attempt to maintain his self-continuity may either: (a) restructure and localize the modifications, brought about by the injury, to as few self-images as necessary or (b) accept the occurred changes temporarily till they disappear or are "explained away." Disabled persons who restrict modifications to the involved self-images have a practical and "realistic" knowledge of their abilities and disabilities. They have accepted their disability but their over-all identity is stable and they are willing to perform within their assessed capacities.

The disabled individual who strives continually to eliminate all disability residuals and is at some point forced to "make-believe" his disability does not exist, is rejecting his disabled status. It is assumed that in such individuals the modifications, that occurred in their self-image(s), render the latter incompatible with the other self-images and require, therefore, an over-all change in

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37 Shibutani, op. cit., p. 230.

the self-conception. Such a threatening self-discontinuity is avoided by this category of injured persons, at any rate, even at the expense of reality.

A third category of injured persons, who had negative feelings toward their self-concept prior to the injury, may willingly bring about changes and discontinue their self-concept, even when the changes necessitated by the injury could be localized or made to disappear through medical treatment. Such individuals derive secondary gains from their disability which they use as a "semi-legitimate" excuse to avoid undesirable roles and activities and to cover inabilities and shortcomings.39

Litman's findings from his study of orthopedically disabled persons (using the term "acceptance" of disability with a similar meaning) support studies indicating that acceptance of disability is positively related to response to treatment.40 We can formulate then the following hypothesis: acceptance of disability is positively related to response to rehabilitation treatment.

39The derivation of secondary gains (such as escaping impossible situations or covering shortcomings) from illness has been discussed by E. Weiss and O.S. English, Psychosomatic Medicine (W. B. Sanders and Co., 1957), p. 112, also by Leo W. Simmons and Harold G. Wolff, Social Science in Medicine (New York: Russell Sage Foundation, 1954), pp. 186-187.

40Litman, op. cit., p. 567.
Reaction to disability

The majority of studies pertaining to individual reactions to physical impairment have had a psychological or psychoanalytical orientation. The reactions studied represent either emotional states such as anxiety, depression, resentment, resignation\(^{41}\) or defense mechanisms, such as withdrawals, denial, compensation\(^{42}\) which are developed by disabled persons in response to disablement.

A few socio-psychological studies have dealt with the adjustment to physical impairment (Fishman,\(^{43}\) Dembo et al.\(^{44}\)) but there is no study in which the disabled persons' plans for life reorganization are examined with relation to their response to rehabilitation.

In the present study the rehabilitants plans for life reorganization are considered to be their "long-range" reaction to their disability. Since all examined cases are

\(^{41}\)R. G. Barker, B. Wright, L. Meyerson, and M. Ginick, Adjustment to Physical Handicap and Illness: A Survey of the Social Psychology of Physique and Disability (Social Science Research Council, Bulletin 55, revised, 1953); brief summaries and discussions of research studies by Wittkower, pp. 141-142, and by Randall, Ewalt, and Blair, pp. 136-137.

\(^{42}\)Ibid., brief discussions and summaries of research studies by Landis and Bolles, pp. 125-130, and by V. S. Sommers, pp. 307-308.

\(^{43}\)Ibid., brief discussion and summary of Fishman's research study, pp. 83-84.

\(^{44}\)Dembo, et al., op. cit., pp. 80-96.
males, the main decision in their planning is that related to vocational activities. This decision, of course, has serious implications and is closely connected with a number of decisions in other areas of their lives. Therefore, operationally the reaction to disability could be identified with the rehabilitant's vocational planning while receiving rehabilitation services at the Ohio Rehabilitation Center.

It is assumed that two variables are crucial in the definition of reactions to disability: The rehabilitant's attitude toward his disability and his work morale. The latter variable predisposes the rehabilitant either toward continuing his working role or toward discontinuing it after the occurrence of the compensable disability. The attitude toward disability, on the other hand, representing the influence the disability has had upon the rehabilitant's self-concept, predisposes him toward a specific type of work or a specific way of avoiding work altogether. By combining the categories for attitude toward disability with the categories for work history we obtain the theoretically expected types of reactions:

<table>
<thead>
<tr>
<th>Attitude toward Disability</th>
<th>Disability accepted</th>
<th>Secondary gains derived from disability</th>
<th>Disability rejected</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Work Morale</td>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>Low Work Morale</td>
<td>D</td>
<td>E</td>
<td>F</td>
</tr>
</tbody>
</table>
Reaction A.—Rehabilitants of this group have a favorable work history which predisposes them toward continuing working. They have accepted their disability, which means that they have assessed their potentials and shortcomings and are willing to live with necessary modifications in some roles. Rehabilitants in this category are expected to plan to return to some kind of renumerative employment and to be quite flexible in their vocational alternatives. They are also expected to respond better to rehabilitation treatment than rehabilitants in other groups.

Reaction B.—Rehabilitants in this group derive secondary gains from their disability but they are highly motivated toward working. Their vocational plans are expected to be a compromise between the two forces (not necessarily contradictory). Thus, the reaction may be the realization of a cherished vocational plan, for example, the establishment of a small business.45

45This reaction is an expected one on the basis of the general disaster theory. According to C. E. Fritz, important social changes and social reforms take place in times of big social disasters. The sudden interruption of ordinary life provides an unstructured social situation that favors change. "People see the opportunity of realizing certain wishes which remained latent and unrealizable under the old system. They see new roles that they can create for themselves." See Charles E. Fritz, "Disaster," mimeographed draft of a chapter to be published in Contemporary Social Problems, Robert K. Merton and Robert A. Nisbet (eds), pp. 49-50.
Reaction C.--Rehabilitants in this category plan to continue working and the fact that they reject their disability determines the type of work they plan to do. They are decided upon return to their previous job because only this would possibly re-establish the life they led prior to the injury.

Reaction D.--Among those included in this category, persons with mild degrees of disability and work potential are expected to be caught in an conflict as to whether they should return to work or not.

Reaction E.--The opportunity for secondary gains provided by the disability is reinforced for this group of rehabilitants by their negative motivation toward work. They are expected to plan for withdrawal from working roles. Disability is used as a socially legitimized avenue for escaping work.

Reaction F.--Rehabilitants in this category would like to re-establish the conditions of life they experienced prior to injury. However, due to their negative motivation toward work, they are not eager to return to their previous jobs. Their dilemma is expressed in an aggressive projection of the responsibility for their disability onto the community at large. They are expected to concentrate on activities.

46 They may tend to feel that the community "owes" them a high compensation for the disrupting effects disability has on their lives.
leading to a higher compensation settlement with the Industrial Commission. In the following pages of this dissertation we will refer to reaction A as "flexible," to reaction B as "independent employment," to reaction D as "conflict," to reaction E as "retirement," and to reaction F as "compensation." These brief titles representing the rehabilitants' vocational plans are thought to be the shortest and most effective means of referring to the types of reactions to disability.

6. Consequents of reactions to disability

(a) Rehabilitation achievement.—Rehabilitation is a difficult concept to define or to measure. It may refer to the disabled person's potential of returning to work or it may be defined as "the extent to which the person is using the physical abilities he has." Most definitions of rehabilitation involve conceptual and practical unclarities and shortcomings.

For the purposes of this study, rehabilitation will represent the successful completion of the rehabilitation program in the Ohio Rehabilitation Center. The measure of this rehabilitation will be the rehabilitation achievement which is a combination of the rehabilitant's improvement and

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David J. Kallen, "The Socio-Economic Correlates of Rehabilitation"; Paper read at the Cleveland Symposium on Behavioral Research in Rehabilitation, Cleveland, Ohio, November 4, 1959, p. 2.
achievement at the time of discharge. Improvement is assessed by comparing the ADL (Activities of daily living), communication, travel, and work evaluations on admission with the evaluations at discharge. Achievement, on the other hand, is assessed on the basis of whether the rehabilitant has met, at the time of discharge, the rehabilitation goals set for him (by the rehabilitation team) after the admission evaluations.

Rehabilitants can be classified into three different categories according to their rehabilitation achievement: (a) Rehabilitants who had both improved and achieved, (b) rehabilitants who had either achieved only or improved only, and (c) rehabilitants who had neither improved nor achieved.

We could expect rehabilitants to respond differentially to rehabilitation treatment, their response depending largely on their vocational plans. As discussed in the Reactions to Disability section those who are flexible in their vocational planning are expected to respond better than all other rehabilitants. Furthermore, rehabilitants who plan to discontinue their working role may respond poorly to rehabilitation efforts because probably disability provides an excuse for doing so. We could then formulate the following hypotheses: (1) the type of reaction to disability is related to response to rehabilitation and (2) planned discontinuity of the working role is negatively related to good response to rehabilitation.
(b) **Length of stay at the Rehabilitation Center.**--The great majority of disabled persons admitted to the Ohio Rehabilitation Center at first undergo an evaluation that usually lasts about two weeks. According to a standardized letter that the Center continually sends to the physician or agency that referred the rehabilitant:

Retention beyond this period (evaluation) is dependent upon the ability of staff and patient to devise individually adapted rehabilitation activities and goals. Minimum requirements are that a patient must be able to develop ability and initiative in his own rehabilitation, and be able to adapt himself to the "groups requirements" of a rehabilitation center.

From these official criteria it can be concluded that if the rehabilitants cooperate with the rehabilitation and were motivated to improve physically so that they may be able to return to some kind of gainful employment they would generally stay as long as needed.

Having already hypothesized that the type of reaction to disability is related to the rehabilitation achievement and that the discontinuity of the working role is negatively related to rehabilitation achievement, we could expect: (1) Rehabilitants who plan to discontinue their working role to stay a relatively shorter time at the Center, even if from a medical point of view they require further rehabilitation services. The first hypothesis then can be formulated as: **Discontinuity of the working role is negatively related to the length of stay at the Rehabilitation Center.** (2)
Rehabilitants who plan to return to their former job or are quite flexible in their vocational planning are expected to stay a relatively longer time provided they need services for an extended period. We can hypothesize, then, that:

The type of reaction to disability is related to the length of stay at the Rehabilitation Center.

(c) Type of discharge.—Rehabilitants were discharged from the Ohio Rehabilitation Center before/after evaluation services were completed, or before/after rehabilitation services were satisfactorily completed. Discharge could have been either requested by the patient himself or could have been ordered by the rehabilitation staff probably due to the rehabilitant's inability to make use of the offered services.\(^{48}\)

Since we previously hypothesized that rehabilitants who plan to discontinue their working role tend to have a poor rehabilitation achievement, we could expect these persons to be most often discharged by the staff before completion of recommended rehabilitation services. Hence the hypothesis: Planned discontinuity of the working role is negatively related to discharge after completion of rehabilitation services.

\(^{48}\)Whether rehabilitants are discharged before or after satisfactory completion of services determines their length of stay at the Center. At least in the cases where the needed rehabilitation services require about the same length of time.
(d) Medical status at discharge.—Medical status, in this instance, refers to whether discharged rehabilitants needed further medical treatment or not. We expect medical status to be related with the degree of disability rather than with the type of reaction to disability and we hypothesize that: medical status at discharge is not related to the type of reaction to disability.

(c) Vocational status at follow-up.—Disabled persons who wish to work encounter various difficulties and prejudices on the part of employers. It is possible, then, that some rehabilitants who planned to return to work may get discouraged and remain unemployed. Or rehabilitants who planned to establish a small repair business may either find their families opposed to these plans or abandon the idea due to great competition. On the contrary, some of the rehabilitants who planned to discontinue their working role may return to work after closing their case with the Industrial Commission. We expect, however, that the majority of rehabilitants will realize their vocational plans. Thus, we hypothesize that: (1) vocational plans are related to eventual vocational status and (2) planned discontinuity of working role is negatively related to eventual resumption of the working role.
CHAPTER III

METHODOLOGY

Study population

The study population is composed of people admitted to the Ohio Rehabilitation Center during the six year period, 1959 - 1961, with a primary diagnosis of back impairment. The population was further limited to males due to the importance of the occupational role for men. Back impairments were selected because they constitute the largest proportion among the Center's admissions. Another important consideration in the selection of this population was the fact that it showed a relative homogeneity with respect to several variables important for this study. More specifically, all rehabilitants with back impairments: (1) were adults and had already some work experience prior to the injury, (2) had suffered an industrial accident "compensable" under the Workmen's Compensation laws, and (3) showed a relative uniformity in the types of impairments and their etiologies. In sum, the following criteria define the study population:

(1) - Admission to the Ohio Rehabilitation Center during 1956 - 1961.

(2) - Adult male.
(3)- Back impairment as primary diagnosis.
(4)- The impairment is work-connected; in other words, it resulted to a claim for workmen's compensation.

Operational procedures of the Ohio Rehabilitation Center

The Ohio Rehabilitation Center is part of the Ohio State University Health Center. It offers a program of comprehensive rehabilitation. Evaluative and therapeutic services of a multi-disciplinary nature are carried out by a rehabilitation team. Team members represent medicine, social work, psychology, vocational counseling, occupational and physical therapy, and other specialties as they are needed. Weekly meetings are held to discuss and evaluate potentials and progress of rehabilitants receiving services.

The disability and potentials of every person admitted to the Center are evaluated during the initial two or three weeks. These evaluations are comprehensive in nature and represent all areas mentioned above. Services are continued for those expected to benefit from them.

The nature of the data

Fairly complete records and medical charts are kept for all Ohio Rehabilitation Center admissions. These records include comprehensive reports on results of the initial evaluations. They also include weekly progress
reports and final discharge evaluations. Some data about the follow-up status of the rehabilitants can also be found in the records. The fact that the records provide information about the rehabilitants in three consecutive stages, namely admission, discharge, and follow-up, is helpful in understanding the dynamics involved in the rehabilitation process.

**Methods of data collection**

Information concerning most of the rehabilitants' characteristics and aspects of their rehabilitation will be obtained from a set of research schedules devised by the Social Research Staff of the Rehabilitation Center (see Appendix I). Most of the clinical data included in the records were organized in a systematic fashion and transcribed to the research schedules. The reliability of the above research schedules has been tested and found satisfactory.

However, in collecting information about the rehabilitants' reaction to disability as well as about their attitude toward it the method of content analysis was utilized. This method was selected because it provides a precise means of describing the contents of qualitative material. Berelson defines content analysis as "a research technique for the objective, systematic, and quantitative description of the
manifest content of communication."\(^1\) If the requirements for objectivity and quantification called for in the application of content analysis are fulfilled, then the resulting data may be: (1) "objective" or reproducible, (2) susceptible to measurement and quantitative treatment, (3) significant for some systematic theory, and (4) fit to be generalized beyond the specific set of analyzed material.\(^2\) The requirements for objectivity are: (a) explicit specification of the variables in terms of which descriptions are to be made (The two variables examined in this study are specified in the section of "definition of terms"); (b) explicit specification of the system categories used with each variable, in order to make the analysis reproducible (The categories are also specified in the "definition of terms" section); (c) explicit rules specifying what features of the content are to be taken as indication that it falls into one category rather than into another. (More specifically, the "recording unit," the "context unit," and the "indicators must be specified before the content analysis is undertaken. In the present study the recording units for both variables are: The social worker's initial report and the program notes. The context unit, however, cannot be limited to any particular section of the record and consists of the entire record.

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\(^2\) Ibid., 435.
The development of the "indicators" (criteria) was realized in several steps as will be described below; (d) Development of an a priori analysis outline to be adopted in a "self-conscious and orderly fashion" in order to fit the content being studied. In this fashion, the necessary modifications are brought about explicitly and systematically (This requirement was fulfilled in this study through the development of a theoretical outline resulting in the categories and criteria for the "reaction to disability" and "attitude toward disability" variables. The modifications brought about by these categories and criteria are examined below.)

The requirements for quantification are: (a) specification of the "unit of enumeration," which is the unit in terms of which quantification is performed. (In the present study this unit is the individual record representing a rehabilitant); (b) specification of the system of categorization, that is the relation existing among the categories of each variable.

The methodological steps taken in the application of content analysis were:

1. The variables ("dimensions") "reaction to disability" and "attitude toward disability," in terms of which the

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analysis will be made, were defined (cf. "definition of terms").

2.- Categories and criteria were specified for each variable on the basis of existing literature references and on the basis of the theoretical framework developed in this study (cf. "definition of terms").

3.- A preliminary content analysis was attempted on about one half of the records (70 records) utilizing the above mentioned categories and criteria for each variable. As was expected, in the process of this analysis the specifications of some categories became sharper, many of the criteria were modified, some of them were omitted, and new ones added. The final set of categories was obtained (see Appendix II) by editing the theoretical categories as well as the criteria to fit better the content analyzed.

4.- A 10% random sample of records was drawn on the basis of random numbers and was analyzed separately by the writer and an independent judge (a graduate student of sociology).

Table 1 presents the results of the analysis of the fifteen randomly selected cases using the final set of categories and criteria for each variable. As Table 1 shows there was one disagreement between the writer and the independent judge with respect to the attitude toward disability (case 578). The independent judge gave as
TABLE 1
CONTENT ANALYSIS OF FIFTEEN RANDOMLY SELECTED CASES, BY THE WRITER AND AN INDEPENDENT JUDGE

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Reaction to Disability</th>
<th>Attitude to Disability</th>
<th>Reaction to Disability</th>
<th>Attitude to Disability</th>
</tr>
</thead>
<tbody>
<tr>
<td>248</td>
<td>Exploitative</td>
<td>Rejection</td>
<td>Exploitative</td>
<td>Rejection</td>
</tr>
<tr>
<td>291</td>
<td>Flexible</td>
<td>Acceptance</td>
<td>Flexible</td>
<td>Acceptance</td>
</tr>
<tr>
<td>318</td>
<td>Independent employment</td>
<td>Secondary gains</td>
<td>Independent employment</td>
<td>Secondary gains</td>
</tr>
<tr>
<td>382</td>
<td>Status improvement a</td>
<td>Rejection</td>
<td>Status improvement</td>
<td>Rejection</td>
</tr>
<tr>
<td>390</td>
<td>Flexible</td>
<td>Acceptance</td>
<td>Flexible</td>
<td>Acceptance</td>
</tr>
<tr>
<td>425</td>
<td>Previous employment</td>
<td>Rejection</td>
<td>Flexible of prev. empl.</td>
<td>Rejection</td>
</tr>
<tr>
<td>477</td>
<td>Flexible</td>
<td>Acceptance</td>
<td>Flexible</td>
<td>Acceptance</td>
</tr>
<tr>
<td>509</td>
<td>Flexible</td>
<td>Acceptance</td>
<td>Flexible</td>
<td>Acceptance</td>
</tr>
<tr>
<td>530</td>
<td>Flexible</td>
<td>Acceptance</td>
<td>Flexible</td>
<td>Acceptance</td>
</tr>
<tr>
<td>578</td>
<td>Status improvement</td>
<td>Acceptance</td>
<td>Status improvement</td>
<td>Secondary gains</td>
</tr>
<tr>
<td>596</td>
<td>Flexible</td>
<td>Secondary gains</td>
<td>Flexible</td>
<td>Secondary gains</td>
</tr>
<tr>
<td>668</td>
<td>Status improvement</td>
<td>Acceptance</td>
<td>Status improvement</td>
<td>Acceptance</td>
</tr>
<tr>
<td>674</td>
<td>Retirement</td>
<td>Secondary gains</td>
<td>Retirement</td>
<td>Secondary gains</td>
</tr>
<tr>
<td>708</td>
<td>Flexible</td>
<td>Acceptance</td>
<td>Flexible</td>
<td>Acceptance</td>
</tr>
<tr>
<td>723</td>
<td>Previous employment</td>
<td>Rejection</td>
<td>Previous employment</td>
<td>Rejection</td>
</tr>
</tbody>
</table>

aThe "Status improvement" reaction to disability is the same as the "Conflict" reaction described in the section of definition of terms. The name was changed because in the process of the preliminary content analysis it was found that rehabilitants caught in a conflict as to whether to return to work or not planned to improve their status.
rationale for his judgment the fact that the rehabilitant used his disability for a secondary, gain, namely to improve his status, by obtaining a higher prestige job than the one he held previously. He felt, however, that this was the only criterion of this category met by the rehabilitant, while most criteria of the acceptance category were met. It was then jointly decided that, since only one criterion of the "use of disability for secondary gains" category was met, the rehabilitant should not be classified under the category, but rather under the acceptance category (of which he met three criteria).5

With respect to the reaction to disability variables there was also one disagreement, namely in case No. 425. Here, the independent judge stated that the rehabilitant fluctuated between the "return to previous employment" and the "flexible" type of reaction to disability. He thought, however, that the prevalent reaction was the "return to previous employment." It was then jointly decided that in cases in which a rehabilitant fluctuates between two categories of reaction to disability, the prevalent reaction should be recorded.6

5This disagreement led to a joint decision concerning the number of criteria of each category that should be met before the rehabilitant is classified under a particular category (cf. Appendix A).

6The reaction to disability, which the rehabilitant exhibits continuously during the terminal period of his stay at the Rehabilitation Center, is considered to be the prevalent one.
The writer and the independent judge had a 99.33 percent agreement on both examined variables.

5.- The final content analysis of the 147 cases was undertaken by the writer, using the final set of categories and criteria. (The result of this content analysis will be given in the "Presentation of Findings" section.)

In determining the rehabilitants' work morale a much simpler form of content analysis was utilized. This was possible because the categories and criteria needed for the analysis were easily and clearly derivable from the definition of work morale. The criteria for the first category of "high work morale" were:

(1) Indication that the job held at the time of onset of disability provided for the rehabilitant some kind of satisfaction beyond the monetary reward. He may have derived this satisfaction from pleasant working conditions, identification with the job, pride in the nature of performed work, responsibility, independence, initiative, or high status attached to the job. (2) Indication that the rehabilitant has valued work in itself; although he has had no identification with any particular job, work has been a very important activity in his life. There should be also an indication that the rehabilitant never subsisted on unemployment compensation but has always sought and been engaged in any available type of work.7

7Although the second criterion does not indicate a high work morale in terms of satisfaction derived from the
The criteria for the second category, namely that of "low work morale" were:

(1) Indication of dissatisfaction with job held at the time of onset of disability. This dissatisfaction may be evidenced in the existence of vocational problems such as problems in interpersonal relations, problems in relation to authority or in the disliking of the nature of work, the working conditions, or the lack of any possibility for advancement.

(2) Indication that the job held at onset of disability as well as previous jobs were only tolerated, although they were boring and meaningless, because the wages were necessary for the support of the family. The monetary reward has been the only goal and the job a means of achieving it.

(3) Indication that work is not valued as an activity and the rehabilitant has in the past relied upon unemployment compensation or other welfare agencies for the support of his family.

nature of work, it indicates the rehabilitant's value upon continuous gainful employment and independence from federal aid or other welfare agencies aiding the unemployed and their families. This value being of extreme importance when examining the rehabilitants' attitude toward Industrial Compensation was considered a sufficient criterion for inclusion in the "High Work Morale" category. This criterion was not derived from the theoretical definition of work morale but was developed in the process of analyzing the examined cases.
5. **Design of Analysis**

The first step in the analysis is concerned with examining whether the data on reactions to disability support the theoretical model. More specifically, it will be calculated what percentage of rehabilitants exhibiting a certain type of reaction to disability, present also the theoretically expected attitude toward disability and level of work morale.

The further analysis of the data is undertaken in two phases: (a) The reactions to disability are considered a dependent variable and its relationships with a series of independent variables—the "antecedents"—are statistically tested. These antecedents consist of: background variables, such as age at onset of disability, marital status, number of dependents, education; social-psychological variables such as, social class, lapse of time between onset of disability and admission for rehabilitation, and medical variables, such as severity of disability, number and type of disability connected surgical operations. (b) The reactions to disability are considered an independent variable and its relationships are examined with respect to certain selected dependent variables—the "consequents." These variables are related to the rehabilitation outcome of the disabled workers and consist of the length of stay at the Rehabilitation
Center, the type of discharge, the medical status at discharge, the rehabilitation achievement and employment status at follow-up.

The particular statistical techniques used in the analysis of the data is discussed in detail in Appendix III.
CHAPTER IV

PRESENTATION OF FINDINGS

A. The Reaction to Disability

1. The content analysis of reactions to disability

During the process of content analysis it was decided to exclude three cases from the examined sample. One case was excluded as non-applicable since the 65 year old rehabilitant had already retired before admission for rehabilitation. A second case was excluded due to lack of adequate information and a third case because the type of reaction to disability could not be determined. The sample was then reduced from 149 to 146 cases.

The content analysis presented the following distribution of rehabilitants in each type of reaction to disability.

TABLE 2

NUMBER AND PERCENTAGE OF REHABILITANTS BY TYPE OF REACTION TO DISABILITY

<table>
<thead>
<tr>
<th>Types of reactions to disability</th>
<th>Flex.</th>
<th>Indep.</th>
<th>Prev-</th>
<th>Status</th>
<th>Retire-</th>
<th>Com-</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
</tr>
<tr>
<td>37</td>
<td>26</td>
<td>11</td>
<td>8</td>
<td>20</td>
<td>14</td>
<td>25</td>
</tr>
</tbody>
</table>

141 100

63
The size of the sample in the above table is 141 because five rehabilitants who were psychiatrically diagnosed as seriously mentally disturbed did not fit the criteria of any reaction to disability. These cases were excluded from the analysis.

Table 2 indicates that rehabilitants tend most often to have flexible vocational plans or to retire while they seldom plan to establish a small business.

The first analytical step purported to examine whether the theoretically constructed typology of reactions to disability was supported by the results of content analysis. Table 3 gives the results of content analysis with respect to the rehabilitants' attitude toward disability which support the assumed relationship between this variable and the type of reaction to disability. Only in the case of rehabilitants who were mainly interested in receiving a large amount of workmen's compensation the deviation from the theoretically expected attitude toward disability is somewhat greater. Indeed, during the process of analyzing the four deviating cases we had noted that there were definite indications of planned discontinuity of the working role. A possible interpretation could be that these four persons were not willing to return to work after their case
TABLE 3
ATTITUDE TOWARD DISABILITY BY REACTION TO DISABILITY

<table>
<thead>
<tr>
<th>Reactions to disability</th>
<th>Attitude toward disability</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Accepted</td>
<td>Rejected</td>
<td>Second gains</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
</tr>
<tr>
<td>Flexible</td>
<td>36</td>
<td>94.6</td>
<td>2</td>
<td>5.4</td>
<td>38</td>
</tr>
<tr>
<td>Indep. Empl.</td>
<td>1</td>
<td>9.1</td>
<td>10</td>
<td>90.9</td>
<td>11</td>
</tr>
<tr>
<td>Prev. Empl.</td>
<td>20</td>
<td>100.0</td>
<td></td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Status Impr.</td>
<td>23</td>
<td>92.0</td>
<td>1</td>
<td>4.0</td>
<td>1</td>
</tr>
<tr>
<td>Retirement</td>
<td>1</td>
<td>3.0</td>
<td>32</td>
<td>97.0</td>
<td>33</td>
</tr>
<tr>
<td>Compensation</td>
<td>11</td>
<td>73.3</td>
<td>4</td>
<td>26.7</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
<td>33</td>
<td>49</td>
<td>141</td>
<td></td>
</tr>
</tbody>
</table>

with the Industrial Commission would be closed.  However, all four cases were quite typical for the "compensation" reaction to disability.

Typical statement of rehabilitants who had accepted their disability after they were told that there is nothing else that can be done for them from a medical point of view, are as follows:

Everybody has a little something wrong with him but he makes a go of it and so can I.

I have made up my mind that I will have to live with the pain for the rest of my life.  I am reconciled with that.

Follow-up information on the employment status of these rehabilitants proved that two of them were unemployed and not interested in working, one was dead and one could not be located.
All my life I have done hard labor. I can't do that anymore but I am ready to do some lighter work that won't hurt my back as much.

Typical statements of rehabilitants who rejected and attempted to deny their disabilities are the following:

If only I could get rid of this pain I would get back to work.

My back hurts constantly and it hurts no less when I am quiet than when I am working, so I may as well go back to my job.

The injury was a very traumatic experience for him and disability threatens to alter the adjustment he had made through work.

I don't want to admit that I am not a "perfect man." I want to leave from here (the Center) with my back as good as possible— a "perfect back."

Finally, the following quotations illustrate best the attitude of rehabilitants who derive secondary gains from their disability:

He has already used all benefits allowed by the Industrial Commission and at present, he needs his disability as an excuse for not returning to work and living off his wife's wages.

His symptomatology is the only honorable solution. He could not tolerate the insult to his ego, his self-esteem and his masculinity that his shortcoming (in the occupational area) and his sexual impotency would be for him.

The distribution of work morale, the second variable assumed to be significant in the determination of the rehabilitants' reactions to disability, is presented in Table 4.
TABLE 4

WORK MORALE BY REACTION TO DISABILITY

<table>
<thead>
<tr>
<th>Type of reaction to disability</th>
<th>Work Morale</th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
<td>Low</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Flexible</td>
<td>33</td>
<td>89.2</td>
<td>4</td>
<td>10.8</td>
</tr>
<tr>
<td>Indep. Empl.</td>
<td>8</td>
<td>80.0</td>
<td>2</td>
<td>20.0</td>
</tr>
<tr>
<td>Prev. Empl.</td>
<td>17</td>
<td>85.0</td>
<td>3</td>
<td>15.0</td>
</tr>
<tr>
<td>Status Improv.</td>
<td>5</td>
<td>21.7</td>
<td>18</td>
<td>78.3</td>
</tr>
<tr>
<td>Retirement</td>
<td>6</td>
<td>20.0</td>
<td>25</td>
<td>80.0</td>
</tr>
<tr>
<td>Compensation</td>
<td>3</td>
<td>23.1</td>
<td>10</td>
<td>76.9</td>
</tr>
<tr>
<td>Total</td>
<td>72</td>
<td>62</td>
<td>134</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The total size of the rehabilitants is 134 instead of 141 in Table 3 because in 7 cases the type of work morale could not be determined. Six out of those 7 cases were rehabilitants who planned to discontinue their working role and for two among them (who were mainly interested in compensation) there was inadequate information obtained during the interviews concerning their attitude toward work.²

The results of content analysis also with respect to the variable of work morale, support the theoretical typology of reactions to disability. The following

²The slightly smaller percentages of expected work morale among the last three reactions in Table 3 is probably due to the concentration of the undecided cases in these reactions.
quotations from various records illustrate high work morale in disabled workers:

There are jobs that pay more money but I like my own work. There is glory in doing this job, you are your own boss, and the few times you don't know exactly what to do this is known only to you.

Working has been a very satisfactory way of living for him. He feels a job well done is better than a huge income. He likes to work. More than the money involved, he gets a pleasure from doing a good job and from pleasing people with a job well done.

He is proud of being a welder.

He is proud that he has been working all his life and that he was never unemployed and he never applied for unemployment compensation. He said he always thought that no matter what kind of work you do it's better to earn money by working than subsist on the low income from unemployment compensation. . . . After he became ill with hepatitis he took a lighter job with a cut in pay.

Rehabilitants, on the other hand, of low work morale can best be illustrated with the following excerpts from records.

The job he has been holding for 15 years has no inner rewards of its own; the only thing he has gained from it is just the pay check. . . . He has found many frustrations in this job . . . he has been under continuous pressures to perform and produce without ever having the satisfaction of seeing the finished product.

He has an extremely unstable work history with no particular goals or attachment to any job. Being single he has had no responsibilities till now and he has drifted from place to place and from job to job. His only preference has been: easy jobs and easy money.
His family has been on welfare for seven years.

... the jobs he felt most comfortable with were those of a very routine nature and those which did not require him to take any responsibility. He seems to want a job merely for the purpose of providing himself with an income.

2. Description of the reactions to disability

The different types of reactions to disability will be described, first, in terms of a few selected background characteristics of the included rehabilitants and, second, on the basis of illustrative content material.

As table 5 indicates about two-thirds of the rehabilitants in most reactions to disability are between 40 and 54 years old. Two reactions make an exception: (a) the compensation reaction where about 70 per cent of the disabled workers are between 35 and 49 years old (and nobody older than 49 years); and (b) the status-improvement reaction where about three-fourths of the rehabilitants are between 30 and 44 years old (and nobody older than 44 years).

Taking into consideration that 60 per cent of the rehabilitants in the status-improvement reaction are younger than 34 years, while in the other categories workers of the same age range from zero (in the independent-employment reaction) to one-fourth of the total number in the category (as in the compensation reaction), we conclude that young rehabilitants tend to concentrate in the status-improvement reaction more often than in any other. Probably younger persons of a low
<table>
<thead>
<tr>
<th>Age at admission</th>
<th>Type of reaction to disability</th>
<th>Flexibly</th>
<th>Independently</th>
<th>Previous Emp.</th>
<th>Compensation</th>
<th>Status</th>
<th>Retirement</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
</tr>
<tr>
<td>Under 30</td>
<td></td>
<td>4 10.8</td>
<td>-</td>
<td>3 15.0</td>
<td>2 13.3</td>
<td>6 24.0</td>
<td>2 6.1</td>
<td>17 12.1</td>
</tr>
<tr>
<td>30-34</td>
<td></td>
<td>5 13.5</td>
<td>-</td>
<td>3 15.0</td>
<td>2 13.3</td>
<td>9 36.0</td>
<td>3 9.1</td>
<td>22 15.6</td>
</tr>
<tr>
<td>35-39</td>
<td></td>
<td>9 24.3</td>
<td>4 36.4</td>
<td>6 30.0</td>
<td>5 33.3</td>
<td>7 28.0</td>
<td>3 9.1</td>
<td>34 24.1</td>
</tr>
<tr>
<td>40-44</td>
<td></td>
<td>12 32.4</td>
<td>2 18.2</td>
<td>4 20.0</td>
<td>2 13.3</td>
<td>3 12.0</td>
<td>8 24.2</td>
<td>31 22.0</td>
</tr>
<tr>
<td>45-49</td>
<td></td>
<td>5 13.4</td>
<td>3 27.3</td>
<td>2 10.0</td>
<td>4 26.7</td>
<td>-</td>
<td>-</td>
<td>5 15.2</td>
</tr>
<tr>
<td>50-54</td>
<td></td>
<td>1 2.7</td>
<td>-</td>
<td>1 5.0</td>
<td>-</td>
<td>-</td>
<td>6 18.2</td>
<td>8 5.7</td>
</tr>
<tr>
<td>55-59</td>
<td></td>
<td>1 2.7</td>
<td>2 18.2</td>
<td>1 5.0</td>
<td>-</td>
<td>-</td>
<td>6 18.2</td>
<td>10 7.1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>37 99.9</td>
<td>11 100.0</td>
<td>20 100.0</td>
<td>15 99.9</td>
<td>25 100.0</td>
<td>33 100.0</td>
<td>141 100.1</td>
</tr>
</tbody>
</table>
work morale, inclined to discontinue their working role are most often caught in a conflict as to whether to return to work or not. Young persons are more imperatively than older ones required by societal norms to be productive except in cases of extremely severe disability. Many of the younger persons seem to have compromised between the societal norm of work and economic independence (which they seem to have internalized to some extent since they accept their disability) and their low work morale, by planning to give up their dull jobs in order to secure vocational training and probably more prestigious and interesting jobs. They plan, then, to discontinue their working role with a possibility of return to work in the future if they succeed in securing the type of job they desire.

It is also interesting that no disabled worker younger than 34 years plans to establish a small business. The reasons for this may be that workers between 20 and 30 years old are predominantly married, they have small children and they have heavy expenses from buying a house or furniture. The wives usually do not work due to the young age of the children so that the disabled workers must carry the financial responsibilities of many dependents. Under such conditions they could not be expected to be willing to take the risks involved in the establishment of a small business.
Table 6 indicates that 85.3 per cent of all rehabilitants were married while only 4.3 per cent of them were single. This, of course, was to be expected in terms of the age distribution of rehabilitants. All rehabilitants, however, who planned to return to their former jobs were married, which indicates that probably non-married persons do not generally feel an urgent need to re-establish as much as possible the pre-injury conditions. On the other extreme, one-third of the rehabilitants who were mainly interested in industrial compensation were single, divorced, widowed or separated. This probably indicates that individuals with no responsibilities toward maintaining a family may, sometimes, be inclined to discontinue their working role and project their disability in order to succeed a "good" settlement with the Industrial Commission.

Table 7 shows that only 9.9 per cent of all rehabilitants were negroes. No negro planned to establish a small business, a fact that may be well understood in the light of existing racial prejudice against them that would probably lead them soon to failure in a competitive business field. Negroes, on the other hand, constitute the one-fifth of all rehabilitants who are interested mainly in compensation. This tends to agree with the stereotype of a negro as a lazy worker who is happy to find an excuse for not working and get money for doing nothing. Fifty-seven per cent of all negroes, however, planned to continue their working role as
### TABLE 6
THE REHABILITANTS’ MARITAL STATUS BY TYPE OF REACTION TO DISABILITY

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>Flexible (No. %)</th>
<th>Independent (No. %)</th>
<th>Previous (No. %)</th>
<th>Compensation (No. %)</th>
<th>Status Improvement (No. %)</th>
<th>Retirement (No. %)</th>
<th>Total (No. %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>3 8.1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1 6.7</td>
<td>1 4.0</td>
<td>6 4.3</td>
</tr>
<tr>
<td>Married</td>
<td>30 81.1</td>
<td>10 90.9</td>
<td>20 100.0</td>
<td>10 66.7</td>
<td>21 84.0</td>
<td>30 90.9</td>
<td>121 85.8</td>
</tr>
<tr>
<td>Widowed</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1 6.7</td>
<td>-</td>
<td>-</td>
<td>1 0.7</td>
</tr>
<tr>
<td>Divorced</td>
<td>4 10.8</td>
<td>1 9.1</td>
<td>-</td>
<td>1 6.7</td>
<td>2 8.0</td>
<td>1 3.0</td>
<td>9 6.4</td>
</tr>
<tr>
<td>Separated</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2 13.3</td>
<td>1 4.0</td>
<td>1 3.0</td>
<td>4 2.8</td>
</tr>
<tr>
<td>Total</td>
<td>37 100.0</td>
<td>11 100.0</td>
<td>20 100.0</td>
<td>15 100.0</td>
<td>25 100.0</td>
<td>33 99.9</td>
<td>141 100.0</td>
</tr>
</tbody>
</table>

### TABLE 7
THE REHABILITANTS’ RACE BY TYPE OF REACTION TO DISABILITY

<table>
<thead>
<tr>
<th>Race</th>
<th>Flexible (No. %)</th>
<th>Independent (No. %)</th>
<th>Previous (No. %)</th>
<th>Status Compensation (No. %)</th>
<th>Retirement (No. %)</th>
<th>Total (No. %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whites</td>
<td>31 83.8</td>
<td>11 100.0</td>
<td>18 90.0</td>
<td>12 80.0</td>
<td>23 93.0</td>
<td>127 90.1</td>
</tr>
<tr>
<td>Negroes</td>
<td>6 16.2</td>
<td>-</td>
<td>2 10.0</td>
<td>3 20.0</td>
<td>2 8.0</td>
<td>14 9.9</td>
</tr>
<tr>
<td>Total</td>
<td>37 100.0</td>
<td>11 100.0</td>
<td>20 100.0</td>
<td>15 100.0</td>
<td>25 100.0</td>
<td>141 100.0</td>
</tr>
</tbody>
</table>
compared with only 48 per cent of all whites who made the same plans.

Table 8 indicates that about 70 per cent of all rehabilitants had completed between 5 and 10 years of formal schooling. Furthermore, Table 7 shows that rehabilitants in the status improvement reaction to disability were the best educated of all other since 56 per cent of them had completed between 9 and 12 years of schooling and nobody had finished less than 5 years. Although they are the best educated they are also the ones that most often request further vocational training. Possibly, since some of them have finished high school but did not utilize this diploma in order to get some kind of clerical or sales position, they feel frustrated that they remained manual workers. The type of work they perform may seem to them more routine and uninteresting than to less educated workers and this fact possibly increases even more their alienation from the job. Disability, then, offers them with the opportunity of a possible way out of a vocational impasse to either a more prestigious job or an escape from the vocational role. The least well educated are the rehabilitants who plan to retire (78 per cent of them have completed less than 8 years of formal schooling) closely followed by those who plan to return to their former job. (70 per cent of them have completed less than 8 years). It seems that the least well
<table>
<thead>
<tr>
<th>Years of Schooling</th>
<th>Flex­ible</th>
<th>Indep.</th>
<th>Previous</th>
<th>Compensation</th>
<th>Status</th>
<th>Retirement</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
<td>No. %</td>
</tr>
<tr>
<td>Under 5 years</td>
<td>13.5</td>
<td>9.1</td>
<td>5.0</td>
<td>-</td>
<td>-</td>
<td>15.6</td>
<td>12</td>
</tr>
<tr>
<td>5-6 years</td>
<td>10.8</td>
<td>9.1</td>
<td>15.0</td>
<td>8.0</td>
<td>13.3</td>
<td>6.3</td>
<td>14</td>
</tr>
<tr>
<td>7-8 years</td>
<td>29.7</td>
<td>36.4</td>
<td>50.0</td>
<td>36.0</td>
<td>53.3</td>
<td>56.3</td>
<td>60</td>
</tr>
<tr>
<td>9-10 years</td>
<td>29.7</td>
<td>27.3</td>
<td>10.0</td>
<td>36.0</td>
<td>13.3</td>
<td>6.3</td>
<td>29</td>
</tr>
<tr>
<td>11-12 years</td>
<td>12.2</td>
<td>18.2</td>
<td>15.0</td>
<td>20.0</td>
<td>20.0</td>
<td>12.5</td>
<td>23</td>
</tr>
<tr>
<td>13 and over</td>
<td>5.0</td>
<td></td>
<td>1</td>
<td></td>
<td>3.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>99.9</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>90.9</td>
<td>100.1</td>
<td>140</td>
</tr>
</tbody>
</table>
educated either tend to retire because they feel all they had to offer the employers was a strong back but now they can offer nothing or they feel urged to return to their previous jobs believing this is the only way to stay in the labor force. Among disabled workers with less than 8 years of formal education probably such factors as the number of dependents, the lapse of time between onset of rehabilitation and the work morale determine finally what will the specific vocational plans of the workers be.

Table 9 presents the distribution of rehabilitants by Census occupational group and reaction to disability. The three prevalent groups for all rehabilitants are: (a) craftsmen, foremen and kindred workers; (b) operatives, mine workers and kindred workers and (c) laborers except farm. The highest percentage of rehabilitants in each reaction except the previous employment reaction are found in the operatives and mine workers occupational group. All rehabilitants who plan to establish a small business are either craftsmen and foremen or operatives and mine workers. This indicates that at least half of the disabled workers who plan to establish their own businesses are skilled. This, of course, was to some extent expected since most of them wanted to open a small repair store.

Content material from rehabilitants' records will probably best illustrate the dynamics of each type of reaction to disability.
TABLE 9

THE REHABILITANTS' OCCUPATIONAL GROUPS, BY TYPE OF REACTION TO DISABILITY

<table>
<thead>
<tr>
<th>Census Occupational Groups²</th>
<th>Types of reaction to disability</th>
<th>Flexible</th>
<th>Indep.</th>
<th>Empl.</th>
<th>Previous Empl.</th>
<th>Compensation Status</th>
<th>Retirement</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Professional, technical &amp; kindred</td>
<td>1 7</td>
<td>1 4</td>
<td>1 3</td>
<td>3 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Managers, officials &amp; proprietors</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Clerical, sales &amp; kindred</td>
<td>3 8</td>
<td>1 5</td>
<td>2 8</td>
<td>1 3</td>
<td>7 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Craftsmen, foremen &amp; Kindred</td>
<td>7 19</td>
<td>5 45</td>
<td>8 40</td>
<td>5 33</td>
<td>7 28</td>
<td>7 21</td>
<td>39 28</td>
<td></td>
</tr>
<tr>
<td>Operatives, mine workers &amp; kindred</td>
<td>15 40</td>
<td>6 55</td>
<td>6 30</td>
<td>4 27</td>
<td>11 44</td>
<td>17 52</td>
<td>59 42</td>
<td></td>
</tr>
<tr>
<td>Service workers except priv. household</td>
<td>5 15</td>
<td>--</td>
<td>--</td>
<td>1 7</td>
<td>--</td>
<td>--</td>
<td>1 3</td>
<td>7 5</td>
</tr>
<tr>
<td>Laborers except farm</td>
<td>7 19</td>
<td>--</td>
<td>5 25</td>
<td>4 27</td>
<td>4 16</td>
<td>5 15</td>
<td>25 18</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>37 100</td>
<td>11 100</td>
<td>20 100</td>
<td>15 101</td>
<td>25 100</td>
<td>33 100</td>
<td>141 101</td>
<td></td>
</tr>
</tbody>
</table>

²The following census occupational groups were not represented in our sample: Farmers and farms managers, farm laborers and foremen, and private household workers.
The following case illustrates well rehabilitants who fall under the category of flexible vocational plans:

Mr. X, a 48 year old negro "shake-down" man for an Iron Company injured his back at work. He received at first conservative treatment and three months after his injury he was submitted to laminectomy and fusion which relieved him from his symptoms. Later, however, he had a recurrence of rather severe pain. Despite this occasionally severe pain he attempted to work at least off and on in several jobs.

A year and a half after his injury he was admitted to the Ohio Rehabilitation Center, referred there by his family physician. At an interview with the social worker he reported that he was married with 4 children and that his wife was working part-time. He seemed to feel strongly the responsibility of maintaining his family and was willing to accept the possibility of reduced income due to his disability. He recognized the fact that he would probably never be free of pain which could attack him on occasions. He was prepared however to live and work with his pain. He would like to go back to his previous job but since this is impossible due to lack of "lighter" jobs he was looking for alternatives. He was willing to change the nature of his work if another job or occupation could be found for him. He had a high work morale and most of the jobs he had held were in the operative and service occupational groups. While at the Center he responded well to the Physical Therapy program and he felt he had improved although as he said he did not expect the impossible.

He applied for a janitorial job indicated to him by the State Employment Service (that he had previously contacted) which he promptly obtained and was discharged to start on this job.

At two consecutive follow-up contacts he was still working full-time at the above job and was quite satisfied with it.

The following quotations from records illustrate well the retirement reaction to disability.
He states that he has had a lot of miseries, and sickness in his life and he is now retiring because the jobs that could be made available to him, such as night watchman or elevator operator, would not be acceptable to him due to his 'innate pride.' He said: 'that's what they do with cripples or guys they want to get rid of, they bump them off to such jobs.'

Or from another record:

He perceives himself as having been advanced in his work beyond his natural capacity and training. . . . He is unusually preoccupied with his symptoms, which have a special value to him since they make it impossible for him to go back to a job for which he feels untrained and incapable of handling. . . . This 55 year old man does not feel capable of handling responsibilities.

. . . He is content to remain as he is. . . . His wife is overprotective toward him; she seems to be concerned that he may get injured while at the Center. She is working full-time and they both seem to be quite satisfied with their present arrangement.

And from another record:

A 57 year old maintenance supervisor underwent both laminectomies and fusion for a back injury he received at work with no relief from pain and other symptomatology. Seven years after the onset of his disability he was admitted to the Rehabilitation Center where he did not cooperate with any part of the program offered because he did not feel this was the answer for him.

His wife was employed full-time and they owned their own property. After a 20-day stay at the Center he insisted on a discharge as he didn't feel that he should punish himself by going through this 'hell.' Throughout his stay he refused to speak about his vocational plans. He, furthermore, turned down several jobs offered to him because he claims that he is not in a physical condition to accept any kind of job.
The compensation reaction can be illustrated with the following excerpt from rehabilitant's records:

A 42 year old molder hurt his back at work. After inaffective conservative and surgical treatment he was admitted to the Rehabilitation Center. He was married with three sons.

In the past he had purchased a 145 acre farm with a modern house and farm buildings on which he still owed $15,000. While at the Center he stated his goals as follows: 'I have lost everything on account of my back. I could have paid off this farm in three years. I could have earned between $8,000 and $10,000 a year with my stock and my job. This back has put me out entirely. I think I should have at least a $20,000 settlement and some capital too. One attorney told me that for 20% he could get 100,000. I want to give them (employers and Industrial Commission) a chance to do the right thing before I bring in an attorney.'

He thought of himself as 100% disabled and unfit for any kind of occupation. When he was informed that the Industrial Commission wanted him to go to their offices for physical re-examination, he immediately requested discharge from the Center possibly because he was afraid he may improve physically if he would stay for a longer time and jeopardize, thus, his chance for a "good" settlement.

Another typical statement was:

No use at the present time going off compensation and taking a job only to find myself physically unable to stick with it and in the end losing everything.

There are not illustrative quotations that can be cited to depict the vocational plan of return to the former job. These rehabilitants are usually described by the Rehabilitation staff as conscientious, hard workers and sometimes compulsive persons whose entire adjustment is
based upon their working role. Some of them while in the Center are still on the payroll of their former jobs and although they may have considerable anxiety concerning their physical capacities to perform the type of work involved they usually request discharge fairly soon and they return to that job.

In general, the status-improvement reaction to disability can be illustrated by three quite different cases.

The first case was:

A 32 year old machinist and nightshift leader how had a history of five industrial accidents was admitted to the Center ten years after his initial back injury. He had a high work morale but he thought that he could not be promoted to a foreman without further vocational training. He wanted to study time and study methods through a course or through on-the-job training. He was afraid that he may become increasingly disabled in the future; for this reason he wanted to change his type of work before he got too old. When he was told that he had no specific disability so that the Bureau of Vocational Rehabilitation would not train him he stated 'I must be disabled since I still feel pain.'

The second case was:

A 40 year old construction worker who was injured on the job and he subsequently attempted to return to work several times but he was always slightly reinjured and seeking further medical treatment. He was admitted for rehabilitation five years after the initial injury. His work history indicated that he had worked many times his way up in a job only to be told that he could not be offered the expected promotion because of his lack of education. While at the Center he was interested in obtaining some kind of prestigious job without being willing to complete high school. When it was pointed out to him that such kind of jobs were out of his
reach he finally planned to receive training in blueprint reading.

At the follow-up contact he had not received any training and he considered himself to be completely disabled physically.

The third case was:

A negro laborer with several courses and vocational skills who desired further vocational training in order to improve his vocational opportunities. He could, however, return to his previous job and he was physically able to perform the nature of work involved in this job.

Finally, the independent employment reaction to disability can be illustrated with the following quotation:

I'd like to open a small restaurant, a coffee joint, where I can be up and down and where there wouldn't be much heavy work. I have always wanted to be independent and I could be this way. I couldn't stand a regular job, I would like to be able to work at my own place.

B. The Antecedents of Reactions to Disability

As already discussed in the section of "Methods for Data Analysis," the reaction to disability is at first considered a dependent variable. Its relationship with a series of independent variables—the "antecedents"—is, then, statistically tested. These antecedents include:

1. Background variables, 2. socio-psychological variables and 3. medical variables.

Findings will be presented below by category of antecedents and with relation to formulated hypotheses.
1. Background variables

a. Age. - The hypothesis states that: advanced age is negatively related to planned continuity of the working role. 

Age was measured at two critical points of time: at onset of disability and at the time of admission for rehabilitation.

The median age at onset of disability for the 140 examined cases was 36 years and five months. Table 9 gives the distribution of rehabilitants by reaction to disability and age (determined as above or below the median).

<table>
<thead>
<tr>
<th>TABLE 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE OF REACTION TO DISABILITY BY AGE AT ONSET OF DISABILITY</td>
</tr>
<tr>
<td>Age at onset of disability</td>
</tr>
<tr>
<td>----------------------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Above median</td>
</tr>
<tr>
<td>Below median</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

2. The exact age at onset of disability for one rehabilitant who planned to retire was not known.

3. In the cases where the rehabilitants' age was given as 36 the exact age was determined on the basis of the actual date of birth reported in the clinical records. The records were consulted throughout the analysis of the data whenever similar problems arose.
After the reactions to disability were grouped according to whether they represented a planned continuity or discontinuity of working role, the calculated chi-square was \( .12 (p > 0.5) \). The null hypothesis of no relationship between age and planned continuity of the working role could not be rejected.

Table 10 indicates that about \( 7/8 \) of the rehabilitants who planned to improve their status were younger than the median age. When this reaction to disability was excluded from the analysis, the chi-square \( (N = 115) \) was \( 6.27 (p < .02) \) and the hypothesis of no relationship between age and planned continuity-discontinuity of the working role could be rejected. The correlation between the two variables as expressed by a contingency coefficient was \( .23 \). The direction of the relationship, however, could not be conclusively determined.

The chi-square for the type of reaction to disability (distribution given in Table 9) was \( 27.65 (p < .001) \) on the basis of which the null hypothesis of no relationship between type of reaction to disability and age was rejected. The correlation expressed by a contingency coefficient was \( .41 (N = 140) \).

---

As discussed in the description of the reactions to disability the three first reactions in Table 10 represent a planned continuity, while the last three represent a planned discontinuity of the working role.

Throughout the analysis of data the .05 level of significance was accepted as satisfactory.
The median age at admission was 38 years and 8.6 months. Table 11 presents the distribution of rehabilitants by type of reaction to disability and age at admission (with respect to the median age):

**TABLE 11**

**TYPE OF REACTION TO DISABILITY BY AGE AT ADMISSION FOR REHABILITATION**

<table>
<thead>
<tr>
<th>Age at admission for rehabilitation</th>
<th>Type of reaction to disability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Flexible</td>
</tr>
<tr>
<td>Above median</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>20</td>
</tr>
<tr>
<td>Below median</td>
<td>17</td>
</tr>
<tr>
<td>Total</td>
<td>37</td>
</tr>
</tbody>
</table>

The chi-square value between the median age and planned continuity-discontinuity of the working role was $.150 (p > .05) on the basis of which we could not reject the null hypothesis of no relationship between the two variables.

In this case, also, about 7/8 of the rehabilitants who planned to improve their status were younger than the median age. But even when they were excluded from the analysis the chi-square was 2.79 (p > .05) so that even then the null hypothesis of no relationship between age at admission and planned continuity-discontinuity of the working role could not be rejected.
The chi-square, however, for median age at the time of admission for rehabilitation and type of reaction to disability was 24.66 ($p < .001$) so that the null hypothesis of no relationship between the two variables could be rejected. The correlation existing between these variables as expressed by a contingency coefficient was .39 ($N = 141$).

We conclude, then, that the hypothesis of a negative relationship between advanced age and planned continuity of the working role does not seem to be supported by the data.\footnote{The only case where the hypothesis was partially supported could not be considered as a substantial support since one reaction to disability was excluded from the analysis.}

It seems, however, that age is related to the type of reaction to disability. More specifically, rehabilitants older than the median age were over-represented among those who planned to retire and those who planned to undertake some kind of independent employment. On the contrary, rehabilitants younger than the median age were heavily concentrated among those who gave up their jobs and wanted in some way to improve their status.\footnote{This finding further supports our discussion of this reaction in the first section of Presentation of Findings. It seems to be the prevalent reaction of younger rehabilitants who plan to discontinue their working role.}

Although age seems to be important in the determination of the rehabilitants' vocational plans, it is probable that among rehabilitants of the same age what finally determines the vocational choice is their system of attitudes and
values. For example, rehabilitants of advanced age with lower-middle class values may plan to continue their working role, while rehabilitants of the same age who hold working or lower class values may plan to retire.

b. Education.—There is no relationship between education and reaction to disability. The median years of formal schooling completed were seven years and six months. The median test for the reactions to disability yielded a chi-square value of 2.77 (p > .05) which did not permit the rejection of the null hypothesis of no relationship between education and type of reaction to disability. The present data do not support the hypothesis. It seems, therefore, that formal education plays no significant role in the determination of rehabilitants' vocational plans. Taking into consideration that the range of years completed is narrow since about three-fourths of all rehabilitants have completed between 7 and 12 years of schooling, it is possible that the type of jobs they engaged in after leaving school is a more influential factor in the formation of future vocational plans. One high school graduate, for example, who received additional vocational training became a skilled worker with a high work morale and planned to return to his former job. Another high school graduate who did unskilled and semi-skilled work had a low work morale and wanted to discontinue his working role.
c. Number of dependents.—The number of dependents is related to the type of reaction to disability. The median number of dependents was 3.04. Table 12 presents the distribution of rehabilitants by type of reaction to disability and number of dependents (with respect to median):

**TABLE 12**

<table>
<thead>
<tr>
<th>Number of Dependents</th>
<th>Type of reaction to disability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Flexible Empl.ᵃ</td>
</tr>
<tr>
<td>Above median</td>
<td>19</td>
</tr>
<tr>
<td>Below median</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td>37</td>
</tr>
</tbody>
</table>

ᵃThe size of the sample was reduced to 138 in this case because in each of the three footnoted reactions there was one case with no data available.

The chi-square was 13.96 (p < .02) which permits the rejection of the null hypothesis of no relationship between number of dependents and type of reaction to disability. The correlation between the two variables as expressed by a contingency coefficient is .34. The data lend support to the hypothesis. Furthermore, rehabilitants with a number of dependents higher than the median number prevailed among those who planned to return to their former jobs. Rehabilitants, on the other hand with fewer dependents than the
median prevailed among those who planned (1) to enter independent employment, (2) to retire, and (3) to abandon their jobs and probably improve their status through additional vocational training. It seems that generally heavier financial responsibilities created from a large number of dependents tend to discourage disabled persons from making vocational plans that could seriously jeopardize their potential for supporting their large families. For this reason, re-establishment of the pre-injury financial and occupational position seems to be the most desirable plan. On the other hand, the risks of uncertain income involved in the establishment of a small business is mostly acceptable to rehabilitants with few financial responsibilities to dependents.

d. Marital Status.—The marital status is not related to the type of reaction to disability. Due to the very small observed and expected frequencies of non-married rehabilitants a chi-square test was not possible. On the basis of the available data the formulated hypothesis cannot be tested. As it was discussed earlier, it was expected that the large majority of the rehabilitants under study would be married since they were mostly adults.

A description of the marital status of rehabilitants by type of reaction to disability has already been given in the first section of the Presentation of Findings.
E. Marital history.--The first hypothesis stated that: the existence of divorces or separations in the marital history is negatively related to planned continuity of the working role. All rehabilitants who had divorced, separated, or widowed and divorced once or more than once were grouped together. On the other hand, those who had never divorced or separated and those who had been widowed once or more than once were also grouped together. The chi-square for the above two groups in relation to their planned continuity or discontinuity of their working roles was .17 (p > .05) on the basis of which the null hypothesis of no relationship between the examined variables could not be rejected. It seems, however, that the existence of divorces or separations may play some role in the determination of the rehabilitants' specific vocational plans. Only 5 per cent of those who intend to return to their former job had ever divorced or separated. On the contrary, 27 per cent of those who plan to establish a small business and 20 per cent of those who plan to leave their jobs with the alleged intention to improve their status had a history of divorce or separations.

The second formulated hypothesis concerning the length of the rehabilitants' last marriage states that: the duration of marriage is positively related to planned continuity of the working role. The median length of the rehabilitants' last marriage was 13.18 years. Such a median was rather expected in terms of the advanced age median of the disabled
persons under study. The median test for length of marriage
and planned continuity-discontinuity of the working role
yielded a chi-square value of .31 (p > .05) which did not
permit the rejection of the null hypothesis of no relation­
ship between the two variables.

Neither hypothesis concerning the marital history was
supported by the data. It is possible that neither the
length of marriage nor the existence of divorces and separ­
ations are important in determining the disabled workers
vocational plans. Probably, were the frequencies larger so
that we could distinguish between those who have divorced or
separated only once and those who have repeatedly done so,
we would have found some significant differences. One
divorce may be found in the marital history of an individual
holding the values of working or lower class (possibly of
lower-middle class). More than one divorces and separations,
however, definitely characterize the lower class and to some
degree the working class.

It is also possible that the differences in the
length of last marriage largely reflect differences in age.
Furthermore, it is assumed that the specific family struc­
ture is probably the most influential factor in the
formulation of vocational plans. The records of some
rehabilitants who planned to retire seemed to indicate that
their wife—who had either worked part-time before their
injury or not at all—started working full-time and assuming
the role of the breadwinner. The disabled husband found his "legitimate" dependence an enjoyable state after long years of frustrating and meaningless, routine jobs and were quite satisfied staying at home, doing little things around the house and being taken care of due to their incapacitating pain. Such persons with a low work morale and a wife who enjoys the reversed family roles, although they may have a long and stable marital life will tend to discontinue their working role.

2. Socio-psychological variables

a. Social class.—High social class is positively related to planned continuity of the working role. The rehabilitants' occupational rank ranged from 73 to 40. According to Kahl's assignment of social class to occupations, three social classes were distinguished: lower middle ranging from 73 to 62, working class ranging from 62 to 49 and lower class from 48 to 40.9

The distribution of rehabilitants by reaction of disability and social class is presented in the following table.

---

9Individuals with an occupational rank of 62 depending on the type of their occupation were either assigned to the lower-middle or to the working class. According to Kahl foremen, skilled workers and petty businessmen with a rank of 62 are included in the lower middle class, while all others belong to the working class.
TABLE 13
TYPE OF REACTION TO DISABILITY BY SOCIAL CLASS

<table>
<thead>
<tr>
<th>Social Class</th>
<th>Type of reaction to disability</th>
<th>Pre-</th>
<th>Flex-</th>
<th>Indep.</th>
<th>vious Status</th>
<th>Retire-</th>
<th>Com-</th>
<th>pens.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Middle</td>
<td></td>
<td>10</td>
<td>7</td>
<td>7</td>
<td>4</td>
<td>8</td>
<td>6</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>Working</td>
<td></td>
<td>24</td>
<td>4</td>
<td>11</td>
<td>18</td>
<td>24</td>
<td>4</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td></td>
<td>3</td>
<td>-</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>5</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>37</td>
<td>11</td>
<td>20</td>
<td>25</td>
<td>33</td>
<td>15</td>
<td>141</td>
<td></td>
</tr>
</tbody>
</table>

The chi-square for the combined reactions to disability was 1.01 (p > .05) which did not permit the rejection of the null hypothesis of no relationship between social class and planned continuity or discontinuity of the working role. The chi-square values did not permit the rejection of the above null hypothesis even when the lower class was excluded from the analysis or combined with the lower class.

The distribution presented in Table 13 led us to believe that probably a relationship existed between social class and type of reaction to disability. Due to small expected and observed frequencies for the lower class rehabilitants in all reactions the working class rehabilitants were combined with those belonging to the lower class. The obtained chi-square was 11.01 (p > .05) so that the null hypothesis of no relationship between the two variables could not be rejected. Only when the lower class
rehabilitants were left out of the analysis the chi-square value of 11.68 (p < .05) permitted the rejection of the null hypothesis. Since lower class rehabilitants were so few that could be tested statistically only in combination with working class rehabilitants the exact relationship between lower class values and specific vocational plans could not be determined.

The present data do not support the hypothesis but they indicate that the specific vocational plans of disabled workers are significantly affected by whether these workers hold lower-middle or working class values. It is possible that the type of jobs lower middle class workers usually hold, such as skilled jobs and foremanships, most often provide them with other rewards besides monetary ones. They may feel identified with their jobs and be proud of them. The routine semi-skilled jobs that working class rehabilitants may have held most probably have offered them little more than the pay check at the end of a week of drudgery. The social class of a disabled worker may be important in the formation of specific vocational plans because of the values the worker may hold (such as respectability, or apathy).

Table 13 indicates that 7 out of 11 rehabilitants who plan to establish a small business belong to the lower-middle class, while 24 out of 33 workers who plan to retire belong to the working class. Taking into consideration
the fact that the majority of individuals in both categories were older than the median age it seems that most probably social class determines the vocational plans of workers of the same age.

b. Lapse of time between onset of disability and admission for rehabilitation.—The first hypothesis states that: lapse of time between onset of disability and admission for rehabilitation is related to the type of reaction to disability. The median lapse of time was two years and 8.5 months. When the rehabilitants were classified by reaction to disability and lapse of time (determined as either above or below the median) the following distribution was obtained:

**TABLE 14**

TYPE OF REACTION TO DISABILITY BY LAPSE OF TIME

| Lapse of time between onset of disability and admission for rehabilitation | Type of reaction to disability |
|---|---|---|---|---|---|---|
| Pre-rehabilitation | Flexible | Independent | Previous Status | Retirement | Improved | Total |
| Above median | 18 | 6 | 3 | 14 | 20 | 8 | 69 |
| Below median | 19 | 5 | 17 | 11 | 13 | 7 | 72 |
| Total | 37 | 11 | 20 | 25 | 33 | 15 | 141 |
The chi-square was 11.88 (p < .05) on the basis of which the null hypothesis of no relationship between reaction to disability and lapse of time could be rejected. The correlation between the two variables as expressed by a contingency coefficient was .28. Furthermore, Table 14 indicates that 17 out of the 20 (18%) rehabilitants who planned to return to their former job had postponed admission for rehabilitation for less than two years and 8.5 months after the onset of their disability. On the contrary, 20 out of the 33 (60%) rehabilitants who planned to retire, postponed admission for rehabilitation for more than two years and 8.5 months. The present data support our first hypothesis.

The second hypothesis states that: that a long lapse of time between onset of disability and admission for rehabilitation is negatively related to planned continuity of the working role. The median test was again applied in testing the relationship between the combined reactions to disability (according to whether they represent planned continuity or discontinuity of the working role) and the lapse of time. The obtained distribution is presented in the following table:
TABLE 15
COMBINED REACTIONS TO DISABILITY BY LAPSE OF TIME

<table>
<thead>
<tr>
<th>Lapse of Time</th>
<th>Combined reactions to disability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Continuity</td>
</tr>
<tr>
<td>Above median</td>
<td>27</td>
</tr>
<tr>
<td>Below median</td>
<td>41</td>
</tr>
<tr>
<td>Total</td>
<td>68</td>
</tr>
</tbody>
</table>

The chi-square value was 5.22 (p < 0.05) which permits the rejection of the null hypothesis of no relationship between lapse of time and planned continuity or discontinuity of the working role. The correlation between the above two variables as expressed by a contingency coefficient was 0.19. Furthermore, the direction of the existing relationship was as hypothesized, namely the longer the postponement of the admission for rehabilitation the greater the rehabilitants' tendency to discontinue their working role. It seems that a long period of unemployment, during which medical treatment is intermittently sought to relieve the disabling pain, has a definite demoralizing effect upon workers. As one rehabilitant who was admitted for rehabilitation six years after his injury was quoted as having said:

I have been so long out of work I wouldn't know from where to pick up.

On the contrary, disabled workers who are admitted for rehabilitation within the first 2-3 years after the
onset of disability seem to be often planning to return to their former jobs. If then a minimum discontinuity of disabled persons' working role is desired, they should be referred early for rehabilitation before they have been possibly involved in litigations against their previous employers, or they have been discouraged from unsuccessful and medically unrecommended attempts to return to work.

3. Medical variables

   a. Number of disability-connected surgical operations.
   --The formulated hypothesis states that: conservative treatment is negatively related to planned continuity of the working role. The chi-square between the combined reactions to disability (according to whether they represented planned continuity or discontinuity of the working role) and conservative treatment versus surgical operations was 1.06 ($p > .05$) which did not permit the rejection of the null hypothesis of no relationship between the two variables.

   The chi-square also between specific vocational plans and surgery or no surgery was 10.65 ($p > .05$) on the basis of which the null hypothesis could not be rejected.

   The present data do not support the stated hypothesis: it seems that the rehabilitants' vocational plans are not influenced by the type of medical treatment they receive. It is possible that whether they have undergone a conservative treatment or a surgical treatment is not as important
as it is what they think the effect of such treatment has been. Whether the disabled workers feel that surgery brought some relief of pain or aggravated their pain and physical limitations may be the important factor in determining their vocational plans. These subjective feelings, of course, may not agree with the objective medical evaluation of results from surgical operations.


The formulated hypothesis was: fusion is positively related to planned continuity of the working role. Table 16 presents the distribution of rehabilitants who had undergone laminectomies or fusion (sometimes performed during a laminectomy).

TABLE 16
NATURE OF SURGICAL OPERATION BY PLANNED CONTINUITY--DISCONTINUITY OF THE WORKING ROLE

<table>
<thead>
<tr>
<th>Nature of Surgical Operation</th>
<th>Planned Continuity - Discontinuity</th>
<th>Continuity</th>
<th>Discontinuity</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fusion</td>
<td></td>
<td>24</td>
<td>17</td>
<td>41</td>
</tr>
<tr>
<td>Laminectomy</td>
<td></td>
<td>15</td>
<td>31</td>
<td>46</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>39</td>
<td>48</td>
<td>87</td>
</tr>
</tbody>
</table>

The chi-square for the above distribution was 4.89 ($p < .05$) which permits the rejection of the null hypothesis of no relationship between the two variables. The correlation between the type of surgical operation and
planned continuity or discontinuity of the working role as expressed by a contingency coefficient was .23. The hypothesized direction is also supported by the distribution in Table 15.

The data indicate that the rehabilitants' plans concerning continuity or discontinuity of the working role is not affected by whether they have undergone surgery or not. However, if they have undergone surgery, the nature of the operation influences these vocational plans. It may be that disabled workers keep hoping for a possible greater relief from pain and physical limitations; toward this end they continuously seek medical consultation and treatment. It seems that they are not generally very inclined to plan to return to work before they have tried all medical remedies and treatments available and received the maximum possible benefit. Fusion is the very last surgical treatment that can be given to a back impaired individual. Taking also into consideration the high value placed upon surgery within the American culture, it is possible that disabled workers who have had a spinal fusion feel that they have been helped as much as possible, from a medical point of view. They probably realize that from there on it is up to them to utilize their abilities and help themselves. Besides the symbolic finality fusion may have for back impaired persons it is also true that as a medical procedure
it is supposed to relieve pain to a considerable degree when successful. The reported though high rate of unsuccessful fusions (resulting in a "pseudoarthrosis" that perpetuates pain) could not explain the beneficial effect of fusion upon the rehabilitants' vocational plans on the basis of the medical surgical procedure alone.

c. Severity of disability.--The hypothesis formulated earlier states that: the severity of disability is not related to the type of reaction to disability. Two specific measures of severity of disability were available in our data: (1) the degree of severity of disability in work and (2) the number of areas (such as Functional Activities of Daily Living, Travel Activities, Communication Activities and Work) in which rehabilitants had a handicap.

All rehabilitants had some handicap in work when they were admitted to the Rehabilitation Center. They either had:

- a slight handicap (i.e., they were fit for specific jobs under normal conditions), or
- a moderate handicap (fit for work under sheltered conditions), or
- a severe handicap (fit for specific jobs at home only), or
- a total or near total handicap (not being fit for work).

In order to use the chi-square test it was necessary to combine the categories of moderate, severe and total work handicap due to the extremely low expected and observed frequencies in the last two work handicap categories.
Table 17 presents the distribution of rehabilitants with slight or more serious work handicap by reaction to disability.

**TABLE 17**

**WORK HANDICAP BY REACTION TO DISABILITY**

<table>
<thead>
<tr>
<th>Type of reaction to disability</th>
<th>Flexible</th>
<th>Indep. Empl.</th>
<th>Previous Status</th>
<th>Empl.</th>
<th>Improv.</th>
<th>Retire-</th>
<th>Compens.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>slight</td>
<td>25</td>
<td>3</td>
<td>13</td>
<td>18</td>
<td>18</td>
<td>9</td>
<td>86</td>
<td></td>
</tr>
<tr>
<td>moderate, severe or total</td>
<td>12</td>
<td>8</td>
<td>7</td>
<td>7</td>
<td>15</td>
<td>6</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>37</td>
<td>11</td>
<td>20</td>
<td>25</td>
<td>33</td>
<td>15</td>
<td>141</td>
<td></td>
</tr>
</tbody>
</table>

The chi-square for the above distribution was 7.90 ($p > .05$) on the basis of which the null hypothesis of no relationship between the two variables cannot be rejected. The available data on severity of disability in work capacity support the stated hypothesis.

As discussed in the section of definitions of terms, rehabilitants were classified into four categories on the basis of functional areas in which the disability constituted a handicap. In order to use the chi-square test rehabilitants with a handicap in another functional area besides work had to be combined due to very small expected frequencies. Table 18 presents the obtained distribution.
TABLE 18

FUNCTIONAL AREAS WHERE DISABILITY IS A HANDICAP
BY REACTION TO DISABILITY

<table>
<thead>
<tr>
<th>Functional areas where disability is a handicap</th>
<th>Type of reaction to disability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Flex-</td>
</tr>
<tr>
<td>Only work handicap</td>
<td>22</td>
</tr>
<tr>
<td>Handicap in other areas besides work</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>37</td>
</tr>
</tbody>
</table>

The chi-square was 5.59 (£ 0.05) which does not permit the rejection of the null hypothesis of no relationship between reaction to disability and number of involved functional areas.

When, however, the reactions were combined according to planned continuity or discontinuity of the working role, the expected frequencies were large enough so that we could also test the rehabilitants with a work handicap or a work handicap and a handicap in one more functional area against those with a handicap in three or four areas. The chi-square value in this case was 5.63 (£ 0.05) so that the rejection of the null hypothesis of no relationship between the two variables was possible.

The present data, then, both on work handicap and other involved functional areas support the hypothesis
stating that the vocational plans are independent of the rehabilitants' degree of severity of disability. Possibly, the way disabled persons define the extent of their disabilities is the most influential factor in their vocational planning. It seems, however, that when disability is severe enough to involve three or four functional areas, so that even the simplest everyday activity is to some extent limited or handicapped, the afflicted individuals may tend to discontinue their working role.

When, therefore, the disability is moderately severe, restricting or handicapping only a few activities, the degree of severity is independent of the disabled persons' vocational plans. When, however, the disability is severe enough as to restrict or handicap many or all activities, the degree of disability may have some influence upon the afflicted persons' decision to continue or discontinue their working role. The type of impairment examined in this study did not threaten the survival of the impaired individuals. It is quite possible that in cases where the impairment examined is severe enough as to threaten the individual's physical survival, a completely different pattern of relationship exists with regard to vocational planning.

**Summary of the antecedents to reaction to disability**

The present data indicate that some of the antecedent variables are related with the rehabilitants' specific
vocational plans while others are only related with their plans to continue or discontinue their working role. Variables related with the specific type of reaction to disability are: (1) age at onset of disability, (2) age at time of admission for rehabilitation, (3) number of dependents, (4) social class, and (5) lapse of time between onset of disability and admission for rehabilitation.

Antecedent variables related with the rehabilitants' plans to continue or discontinue their working role are: (1) lapse of time between onset of disability and admission for rehabilitation, (2) nature of disability-connected surgical operation, (3) severity of disability (measured on the basis of handicapped functional areas) but only when such disability affects most activities of the afflicted individuals.

It seems, then, that the specific vocational plans a rehabilitant makes are related with a number of background and socio-psychological variables but are not related with any medical variable. Only the nature of surgical operation to which they have been submitted is related with the rehabilitants' plans to continue or discontinue their working role.

C. The Consequents to the Reaction to Disability

In this analytical step the reaction to disability is considered to be an independent variable and its relationships
with a series of dependent variables—the "consequents"—is statistically tested.

Findings will be presented below by consequent and with relation to formulated hypotheses.

1. Rehabilitation achievement

There were three hypotheses formulated with regard to rehabilitation achievement. The first states that: the type of reaction to disability is related to response to rehabilitation treatment.

As discussed in detail in the section on Definitions of Terms a disabled person's degree of rehabilitation is measured by his rehabilitation achievement. Rehabilitation achievement is a combined measure of medical improvement and achievement of goals set by the rehabilitation staff. Table 19 presents the distribution of rehabilitants' response to the rehabilitation program by type of reaction to disability.

In order to use a chi-square test the last two categories of rehabilitation achievement presented in Table 19 had to be combined due to very small expected frequencies. The chi-square value obtained was 14.36 (p < 0.02) which permits the rejection of the null hypothesis of no relationship between specific vocational plans and rehabilitation achievement. The correlation between the two variables as
expressed by a contingency coefficient was .31. The first hypothesis, then, is supported by the data examined.

TABLE 19

REHABILITATION ACHIEVEMENT BY REACTION TO DISABILITY

<table>
<thead>
<tr>
<th>Rehabilitation Achievement</th>
<th>Type of reaction to disability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Flexible</td>
</tr>
<tr>
<td>Improved and Achieved</td>
<td>14</td>
</tr>
<tr>
<td>Improved or Achieved</td>
<td>18</td>
</tr>
<tr>
<td>Not improved or achieved</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>37</td>
</tr>
</tbody>
</table>

The size of the sample is in this case smaller because one rehabilitant with a compensative reaction to disability was discharged after evaluation as he requested. Two rehabilitants in the status-improvement reaction were also excluded, the one he was admitted only for evaluation and the other because his disability could not be improved.

A second hypothesis states: planned discontinuity of the working role is negatively related to response to rehabilitation.

The chi-square value for the combined reactions to disability (according to planned continuity or discontinuity of the working role) was 11.35 (p < .01) which permits the rejection of the null hypothesis.

The correlation between rehabilitation achievement and planned continuity or discontinuity of the working role
as expressed by a contingency coefficient was .28; this correlation is only slightly lower than the one between specific vocational plans and rehabilitation achievement.

The third formulated hypothesis states: acceptance of disability is positively related to response to rehabilitation.

Table 20 presents the distribution of rehabilitants by attitude toward disability and reaction to disability.\(^{10}\)

**TABLE 20**

REHABILITATION ACHIEVEMENT BY ATTITUDE TOWARD DISABILITY

<table>
<thead>
<tr>
<th>Rehabilitation Achievement</th>
<th>Attitude toward disability</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Accepted</td>
<td>Rejected</td>
<td>Secondary gains</td>
<td>Total</td>
</tr>
<tr>
<td>Improved and Achieved</td>
<td>25</td>
<td>7</td>
<td>9</td>
<td>41</td>
</tr>
<tr>
<td>Improved or Achieved</td>
<td>26</td>
<td>12</td>
<td>12</td>
<td>50</td>
</tr>
<tr>
<td>Not improved or Achieved</td>
<td>6</td>
<td>16</td>
<td>25</td>
<td>47</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
<td>35</td>
<td>46</td>
<td>138</td>
</tr>
</tbody>
</table>

The chi-square between the above variables was 25.80 (p < .001) which permits to reject the null hypothesis stating that there is no relationship between the two

---

\(^{10}\)The number of rehabilitants in each category of attitude toward disability was determined on the basis of the observed attitude and not by combining the types of reactions to disability that theoretically resulted from one category of attitude toward disability.
variables. The correlation between attitude toward disability and rehabilitation achievement as expressed by a contingency coefficient was .40. The direction of this relationship is also as hypothesized.

The present data support all three hypotheses; rehabilitation achievement then is related to the rehabilitants' specific vocational plans, as well as to their planned continuity or discontinuity of the working role and their attitude toward disability.

The highest relationship exists between rehabilitation achievement and attitude toward disability. Almost all rehabilitants who accepted their disability improved or achieved the rehabilitation goals or both improved and achieved. This finding agrees with Litman's findings as well as with findings from medical research.11 Rehabilitants who rejected their disability often tended to achieve the rehabilitation goals even when they were not medically improved. This can be attributed to the fact that one rehabilitation goal set for practically all rehabilitants is: vocational rehabilitation, that is fitness for return to some kind of gainful employment. Most rehabilitants who achieve this goal without necessarily improving from a physical point of view are those who want to return to their former job and being anxious to reassume all their previous

social roles, they often leave the center on their own initiative, before receiving all possible benefits from rehabilitation services. The relationship between continuity or discontinuity of the working role and rehabilitation achievement is better understood in the light of the expected achievement of vocational rehabilitation. The large majority of them are not, of course, interested in vocational rehabilitation so that they tend not to achieve the goals set by the rehabilitation staff. Some of them, however, are interested in being relieved from pain; they cooperate with the physical program for this purpose and finally they may improve physically although they often deny any improvement for fear of losing the "legitimate" exemption from expected social roles.

Rehabilitants finally interested only in a "good" settlement with the Industrial Commission seemed to have the poorest response to rehabilitation treatment.

2. Length of stay at the Rehabilitation Center

The first hypothesis states that: the type of reaction to disability is related to the length of stay at the Rehabilitation Center.

The median length of stay at the Rehabilitation Center was five weeks. The median test distribution is given in Table 21.
TABLE 21
LENGTH OF STAY BY REACTION TO DISABILITY

<table>
<thead>
<tr>
<th>Length of Stay</th>
<th>Type of reaction to disability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-</td>
</tr>
<tr>
<td>Above median</td>
<td></td>
</tr>
<tr>
<td>Below median</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
</tbody>
</table>

The chi-square value was 20.96 (p < .001) on the basis of which we are able to reject the null hypothesis of no relationship between the rehabilitants' specific vocational plans and their length of stay at the Rehabilitation Center. As an alternative hypothesis, the formulated hypothesis of an existing relationship between the two variables is accepted. The correlation existing between the related variables as expressed by a contingency coefficient was .36.

Table 21 indicates that the very large majority of rehabilitants who are either planning to establish some kind of small business or are only interested in a settlement with the Industrial Commission stay at the Center for a shorter than the median time (five weeks). As already seen the latter category of rehabilitants also have the poorest response to rehabilitation treatment. It is believed that
all these findings can be more clearly interpreted with regard to the type of the rehabilitants discharge from the Center and for this reason they will be discussed in the following section.

The second hypothesis states that: **planned discontinuity of the working role is negatively related to the length of stay at the Rehabilitation Center.**

When the median test was used with the combined vocational plans the chi-square was 1.97 (p > .05) which does not permit to reject the null hypothesis. Planned discontinuity of the working role then is independent of the length of stay at the Rehabilitation Center.

3. **Type of discharge**

The formulated hypothesis states that: **planned discontinuity of the working role is negatively related to discharge after completion of rehabilitation services.**

There are two major types of discharge: (a) after the rehabilitation program is satisfactorily completed; (b) before completion of such program. In the latter case rehabilitants are discharged either by their own request or upon recommendation of the staff if they do not seem to profit from the available services.

Table 22 presents the distribution of rehabilitants by major type of discharge and type of reaction to disability.
TABLE 22

TYPE OF DISCHARGE BY REACTION TO DISABILITY

<table>
<thead>
<tr>
<th>Type of Discharge</th>
<th>Type of reaction to disability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-</td>
</tr>
<tr>
<td></td>
<td>ment</td>
</tr>
<tr>
<td>Program completed</td>
<td>30</td>
</tr>
<tr>
<td>Requested by patient</td>
<td>3</td>
</tr>
<tr>
<td>Requested by staff</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>37</td>
</tr>
</tbody>
</table>

The chi-square between the combined vocational plans and type of discharge (before or after completion of rehabilitation services) was 18.3 ($p < .001$) which permits the rejection of the null hypothesis. The direction of the relationship is also as hypothesized, since 43 out of 68 rehabilitants who planned to continue their working role were discharged after they had completed the rehabilitation program and 54 out of 73 who planned to discontinue their working role were discharged before they had completed the rehabilitation program. The correlation, furthermore, between planned discontinuity and completion of rehabilitation program as expressed by a contingency coefficient was .34.

The chi-square also between type of reaction to disability and type of discharge was 44.36 ($p < .001$) which
permitted to reject the null hypothesis of no relationship between the two variables.\textsuperscript{12} The correlation between them, as expressed by a contingency coefficient of .49, is also quite high.

Tables 20, 21, and 22 show that rehabilitants who are mostly interested in industrial compensation stay a short time at the Center, they are discharged (usually upon staff recommendation) before they have completed the offered rehabilitation services and they never both improve physically and achieve rehabilitation goals. It is possible that this category of rehabilitants rejects most of the rehabilitation program because it endangers their chances for a substantial award from the Industrial Commission. The rehabilitation staff, on the other hand, seems to be very discouraged with them and they usually discharge them while encouraging them to come back to the Center after their case with the Industrial Commission is closed. The following extract from a record depicts well the relation between the progress of legal procedures toward settlement with the Industrial Commission and the rehabilitant's response to rehabilitation.

\textsuperscript{12}\textsuperscript{12} The last two types of discharge in Table 21 had to be combined in this case due to very small expected frequencies.
pain and that he had spent all weekend in bed. He now felt that the rehabilitation program aggravated his back condition rather than aiding it. After a long discussion with him, it was found out that he developed the pain as he was leaving his lawyer's office who had told him that his temporary total disability was over and his case would come up for re-examination at the Commission. There seems to be a direct relationship between the above events and his symptoms. He is entirely too threatened of the idea of getting well, giving up his compensation and returning to work.

From the moment he came back to the Center he stayed in bed and asked for discharge.

The following quote illustrates the way rehabilitants interested in compensation are usually seen by the rehabilitation staff when they reject the services offered to them:

He is suspicious of just whether or not we really wish to help him or whether he was sent here so we could say he was not disabled and no longer entitled to compensation.

Rehabilitants who plan to give up their jobs and possibly improve their status have a higher rehabilitation achievement than all others who plan to discontinue their working role. The fact that most of them are young may be a motivating force to improve physically. They probably are considered to have attained the goal of vocational rehabilitation if they actively seek vocational training even when this training is not warranted in terms of their already acquired skills and job opportunities. Since, then, they may accept the rehabilitation program and even profit from it if they tend to stay at the Center longer than the median and be discharged after the program is completed.
4. Medical status at discharge

The formulated hypothesis states that: Medical status at discharge is not related to the type of reaction to disability.

Table 23 presents the distribution of rehabilitants who at discharge needed further medical care or not by type of reaction to disability.

TABLE 23
MEDICAL STATUS BY REACTION TO DISABILITY

<table>
<thead>
<tr>
<th>Medical status at discharge</th>
<th>Type of reaction to disability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Flex-</td>
</tr>
<tr>
<td>Further medical care needed</td>
<td>9</td>
</tr>
<tr>
<td>No further medical care</td>
<td>28</td>
</tr>
<tr>
<td>Total</td>
<td>37</td>
</tr>
</tbody>
</table>

The chi-square was 7.15 (p > 0.05) which does not permit the rejection of the null hypothesis of no relationship between the two variables. The stated hypothesis is, then accepted since this is the null hypothesis.

This finding is not very unexpected since the type of reaction to disability is not also related with the severity of disability. It seems that it is not the actual medical condition that determines the rehabilitants' vocational
plans and these plans on the other hand do not seem to be related to the objectively determined need for further medical care. It would be expected, however, that the type of reaction to disability would be related to the subjectively determined need for further medical care. Rehabilitants, for instance, who both plan to discontinue their working role and derive secondary gains from their disability tend to think that they need hospitalization, further surgery and medical treatment. As one of the above rehabilitants who planned to retire said when requesting to be discharged:

I am not getting anything out of my stay here. It is a nice place, and the people are nice and they do a lot of good things for a lot of people, but I just have too much suffering and I need a hospital bed.

Rehabilitants, on the other hand, who plan to continue their working role may refuse further recommended surgery if they feel that they are able to work with their pain. A disabled worker who planned to establish a small business said with respect to recommended surgery:

If I am about as well as I'm going to be, then I will know what I will have to prepare for the rest of the way. I don't want to suffer through another operation, I don't think it's worth the risk.

5. Vocational status at follow-up

The first hypothesis states that: vocational plans are related to eventual vocational status.
Follow-up information was available for 93 cases (66%) because some of the other disabled workmen had moved to another state or could not be located or were deceased. On the basis of the available data it was possible to ascertain the discrepancy between the vocational plans and the actual vocational status assumed after discharge from the Rehabilitation Center. Table 24 gives the distribution of rehabilitants' vocational status at discharge.

**TABLE 24**

EMPLOYMENT STATUS BY REACTION TO DISABILITY

<table>
<thead>
<tr>
<th>Employment status at discharge</th>
<th>Type of reaction to disability</th>
<th>Pre-</th>
<th>Flex-</th>
<th>Indep.</th>
<th>Empl.</th>
<th>Empl. Improv.</th>
<th>Retire-</th>
<th>Com-</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed</td>
<td></td>
<td>17</td>
<td>4</td>
<td>14</td>
<td>8</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>47</td>
</tr>
<tr>
<td>Unemployed</td>
<td></td>
<td>12</td>
<td>5</td>
<td>2</td>
<td>9</td>
<td>14</td>
<td>4</td>
<td>93</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>29</td>
<td>9</td>
<td>16</td>
<td>17</td>
<td>16</td>
<td>6</td>
<td>93</td>
<td></td>
</tr>
</tbody>
</table>

Due to small frequencies a chi-square test could not be used; the table, then, will be discussed in terms of percentages. Since some cases were contacted more than once after they left the Center some of them were found to be employed at the first contact but unemployed at the second. These workers were considered to be employed, because in most cases their subsequent unemployment was beyond their control.
Table 23 indicates that 58.6 per cent of the workers who had planned to return to some kind of gainful employment had realized their plans. Only 37.5 per cent, however, of those who planned to establish a small business had realized their plans, while one of them was employed in his former job. Some of the reasons for the great discrepancy between vocational plans and actual vocational status in this case can be best illustrated by the following quotes from records.

I want no compensation money for sitting around and doing nothing. I want to have my own small business where my family maybe can help or some hired help.

(But at follow-up)... he was unemployed and quite disappointed because his family and especially his wife discouraged him from starting any kind of small business. She was not willing (and neither were his working children) to leave her job that she enjoyed in order to help him operate a small store. Furthermore, the entire family did not approve of his risking money in an uncertain business undertaking.

In the case of another rehabilitant who wanted the Bureau of Vocational Rehabilitation to finance the purchase of equipment so that he could establish a small repair shop at his garage the field worker found him to be unemployed and he wrote:

He claims that the B.V.R. did not finance the purchase of the equipment he needed because he has become increasingly disabled and he failed to clearly indicate the need and use of such equipment for what kind of repair business.

---

13 This percentage as well as all other percentages were calculated on the basis of the total number of persons on which there are follow-up data.
Table 23 also indicates that 86.7 per cent of the disabled workers who had planned to return to their former jobs had realized their plans; one was employed but not in his former job. Generally, then, 64.8 per cent of those who planned to continue their working role had realized their plans.

Fifty-two and nine tenths per cent of those who wanted to discontinue their jobs and possibly improve their status were found to be unemployed, although about half of them had either completed their vocational training or were in training at the time of the contact. One disabled worker who was unemployed and he had not had any training claimed that the Bureau of Vocational Rehabilitation would not set any training program for him because of his increased nervousness. Most of the disabled workers in this category who were employed at the time of follow-up had returned to their previous jobs that were open to them and they were physically able to perform.

Eighty-seven and five tenths per cent of the disabled workers who planned to retire were unemployed at the time of follow-up contact. One rehabilitant who had retired said at follow-up that he enjoyed hunting and fishing and working in his farm whenever he feels like it. Another one was found very content to stay at home and take care of the children while his wife was working full-time. Several had received further medical treatment including surgical operations and
they perceived themselves as totally disabled and unable to work.

Finally 66.7 per cent of those mainly interested in industrial compensation were unemployed at follow-up.\textsuperscript{14} Two disabled workers had, however, returned to work after settlement with the Industrial Commission. Generally, 69.2 per cent of the disabled workers who planned to discontinue their working role had realized their plans.

Although the present data are not answerable to a statistical analysis our hypothesis seems to be supported at least to some extent by the frequencies in Table 24.

The second formulated hypothesis states that:

\underline{planned discontinuity of the working role is negatively related to eventual resumption of the working role.}

Table 25 presents the distribution of employed and unemployed rehabilitants at follow-up for the combined reactions to disability.

The chi-square for the above two variables was 9.18 ($p < .01$) which permits the rejection of the null hypothesis of no relationship. The correlation between planned continuity or discontinuity of the working role and the

\textsuperscript{14}In this case of disabled workers as well as in all others, several among those who remain unemployed seek further medical care, are sometimes hospitalized and sometimes undergo surgical operations. It is possible that in order to be exempted from their expected social roles (especially the occupational role) they seek a medical legitimation through medical treatment.
eventual employment status of disabled workers (as expressed by a contingency coefficient) was .30. Furthermore, the direction of the relationship existing between the two variables was as hypothesized (as Table 24 indicates).

**TABLE 25**

<table>
<thead>
<tr>
<th>Employment status</th>
<th>Planned continuity or discontinuity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Continuity</td>
<td>Discontinuity</td>
</tr>
<tr>
<td>Employed</td>
<td>35</td>
<td>12</td>
</tr>
<tr>
<td>Unemployed</td>
<td>19</td>
<td>27</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>54</strong></td>
<td><strong>39</strong></td>
</tr>
</tbody>
</table>

The plans, then, rehabilitants make while at the Rehabilitation Center, concerning continuity or discontinuity of their working role, agree fairly well with what they actually do when they are discharged from the Center.

**Summary of the consequents to reaction to disability**

The rehabilitants' specific vocational plans influence the outcome of rehabilitation by influencing the degree of rehabilitation achievement, the length of stay at the Rehabilitation Center as well as the type of discharge from the Center. It seems that disabled workers with different types of reactions to disability not only respond differently to the offered rehabilitation program but they are also
viewed and treated differently by the Rehabilitation staff, especially with respect to discharge. As expected, there seems to be some relation, also, between the three above consequents.

The type of reaction, on the other hand, does not seem to influence the objectively determined need for further medical care at the time of discharge.

Finally, the available follow-up information indicates that there is no significant discrepancy between the disabled workers' plans to continue or discontinue their working role and their eventual employment status.
CHAPTER V

SUMMARY AND CONCLUSIONS

Summary

The main objective of this study was the construction of a theoretical typology of reactions to disability and the testing of this typology on a sample of disabled people. The sample consisted of 141 disabled male workers who injured their backs at work and had for this reason claims to workmen's compensation. They were all admitted to the Ohio Rehabilitation Center for evaluation and rehabilitation services between 1956 and 1961. The type of reaction to disability was determined while they were at the Center. The actual rehabilitants were not contacted but instead the complete clinical records were used as a source of information.

Data concerning the types of reactions to disability and the variables assumed important in determining such reactions (attitude toward disability and work morale) were obtained through content analysis of the available records. The results of this analysis supported the theoretically constructed typology. They indicated that the majority of rehabilitants in each category of reaction to disability
exhibited the expected attitude toward disability as well as the expected work morale. In the case of the disabled workers examined, their plans to continue or discontinue their work roles were determined by their high or low levels of work morale. On the other hand, specific vocational plans were determined by whether rehabilitants accepted, rejected or derived secondary gains from the disability.

This study also purported to examine the relationship between the rehabilitants' reactions to disability and a number of selected antecedent and consequent variables. A theoretical proposition basic to this study states that it is the definition of a situation rather than its nature that influences intended and actual behavior. When applied to the problem under study it states that it is the definition of the disability and not the nature or degree of disability that determines the disabled persons' intended and actual behavior. On the basis of this general proposition and other more specific ones a number of research hypotheses were formulated.

The type of reaction to disability was found to be influenced by the following antecedent variables: (a) age at onset of disability, (b) age at the time of admission for rehabilitation, (c) number of dependents, (d) social class, and (e) lapse of time between onset of disability and admission for rehabilitation. The nature of surgical
treatment was the only medical variable that was found to be related to the rehabilitants' decision to continue or discontinue their working role. The basic proposition of the study was supported by the finding of no relationship between degree of severity of disability and vocational plans while the way disability is viewed by the disabled workers plays an important role in the determination of these plans.

On the other hand, the specific vocational plans the rehabilitants made while at the Center were found to influence various aspects of the rehabilitation outcome, such as physical improvement and achievement of rehabilitation goals. Length of stay at the Center and type of discharge. Finally, on the basis of follow-up information, available only for 93 out of the 141 rehabilitants, the eventual employment status seemed to agree with the corresponding vocational plans. Rehabilitants who while at the Center had intended to continue their working role were predominantly employed after discharge; on the contrary, those who had planned to discontinue their working role were mostly unemployed at follow-up.

All the above findings suggest that the disabled workers' reaction to disability may have some predictive value with respect to future rehabilitation outcome and eventual employment status. Furthermore, it may also be possible to predict the type of vocational plans
rehabilitants with certain background and social-psychological characteristics would most often make.

Conclusions

The present study has some definite limitations. The first limitation is the inability to generalize the findings to any kind of larger population due to a non-random sample of cases examined. It is, however, believed that the obtained findings may guide future researchers of the problem in selecting relevant variables and in formulating and testing specific hypotheses. A second reason for being unable to generalize the present conclusions is the fact that all workers in the sample were afflicted with the same type of impairment: back impairment; such a disability causes pain and restrictions of some abilities and activities but hardly ever threatens survival. The present findings indicated that when the disability incapacitates nearly all functional activities to some degree, it is then negatively related to planned continuity of the working role. It is possible that when the disability is severe enough to threaten the afflicted person's very existence it may influence in some way vocational plans. A comparative study of workers who have suffered different types of impairments would help determine the extent to which the present findings hold true for other impairments.

Another limitation of this study results from the fact that the available data were collected neither for research
purposes nor for the specific objectives undertaken here. Because of this, data suffered from incidental incompleteness in records and charts. For instance, the rehabilitants' family structure, a variable quite relevant for the purposes of the study, was not consistently or adequately reported.

Four important conclusions derive from the findings:

1. The disabled worker's definition of his disability seems to be more important than its severity in influencing his intended and eventual employment status.

2. There is a high agreement between intended and eventual employment.

3. Models of deviant behavior, such as those developed by Merton and Parsons are applicable in the anomic situation created when disabled workers with compensation claims make vocational plans.

4. The disabled workers' specific vocational plans could be possibly used by rehabilitation workers as a predictive tool with respect to physical and vocational rehabilitation of the afflicted persons.

Intensive and extensive further research is needed in this area. Probably, the criteria used for the content analysis of reactions to disability, attitudes toward disability and work morale could be incorporated into
schedules to be administered to rehabilitants with different types of impairments, compensable or non-compensable. Such a study would determine the limits of validity of the findings reported here.
APPENDIX I

SECTIONS OF THE OHIO REHABILITATION CENTER
RESEARCH SCHEDULES USED IN THIS STUDY

Admission

A. Identification Data

<table>
<thead>
<tr>
<th>Age</th>
<th>Sex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race</td>
<td></td>
</tr>
<tr>
<td>0  White</td>
<td>2  Oriental</td>
</tr>
<tr>
<td>1  Negro</td>
<td>9  Other</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Marital Status</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0  Single</td>
<td>2  Separated</td>
</tr>
<tr>
<td>1  Married</td>
<td>3  Divorced</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0  Under 5 years</td>
<td>4  11 and 12 years</td>
</tr>
<tr>
<td>1  5 and 6 years</td>
<td>5  13 and 14 years</td>
</tr>
<tr>
<td>2  7 and 8 years</td>
<td>6  15 and 16 years</td>
</tr>
<tr>
<td>3  9 and 10 years</td>
<td>7  17 and over</td>
</tr>
</tbody>
</table>

B. Medical Data

Types of Impairments

Primary Diagnosis: THE MOST IMPORTANT FACTOR IN THE DISABILITY
a. Type of Impairment

Dx:

IMPAIRMENTS ARE CODED ACCORDING TO THE SYSTEM DEVELOPED BY THE ASSOCIATION OF CRIPPLED CHILDREN. CODE NUMBERS RANGE FROM 000 TO 999. FOR NO IMPAIRMENT, MARK 000.

b. Etiology

IMPAIRMENT-ETIOLOGIES ARE CODED ACCORDING TO THE SAME SYSTEM DEVELOPED BY THE ASSOCIATION OF CRIPPLED CHILDREN. CODE NUMBERS RANGE FROM 00 TO 99.

Age at Time of Onset of First Diagnosis of Impairment

Lapse of Time between Onset or First Diagnosis of Impairment and Admission to ORC

0  Not applicable 6  4 years to less than 6 years
1  Less than 6 months 7  6 years to less than 8 years
2  6 months to less than 1 year 8  8 years to less than 10 years
3  1 year to less than 2 years 9  10 years and over
4  2 years to less than 3 years
5  3 years to less than 4 years

Pre-Admission Surgery related to Cause(s) of Disability

0  No surgery was necessary 2  Inadequate surgery was performed
1  Surgery was needed but not performed 3  Adequate surgery was performed

Evaluation of Handicap

THIS EVALUATION REFERS TO THE CONDITION OF THE PATIENT AT THE TIME OF ADMISSION, REGARDLESS OF WHETHER OR NOT HE IS USING ANY EQUIPMENT. THE FOLLOWING CATEGORIES OF EVALUATION WILL BE USED:

NO HANDICAP: Person Performs the Activities Without Assistance at his Normal Rate of Efficiency

The evaluation of handicap was repeated at discharge and since all items were identical, they are not repeated in the discharge section of the appendix.
SLIGHT HANDICAP: Person performs the Activities Without Assistance but at a Rate that is Significantly less Efficient than Normal

MODERATE HANDICAP: Person Needs Assistance in Approximately Less than Half of the Activities Entailed

SEVERE HANDICAP: Person Needs Assistance in More than Half of the Activities Entailed

TOTAL OR NEAR TOTAL HANDICAP: Person Needs Assistance in Almost All Activities Entailed.

A. Functional Activities of Daily Living

1. Personal Hygiene
   - 0  No handicap
   - 1  Slight handicap
   - 2  Moderate handicap
   - 3  Severe handicap
   - 4  Total or near total handicap

2. Eating
   - 0  No handicap
   - 1  Slight handicap
   - 2  Moderate handicap
   - 3  Severe handicap
   - 4  Total or near total handicap

3. Bed Activities
   - 0  No handicap
   - 1  Slight handicap
   - 2  Moderate handicap
   - 3  Severe handicap
   - 4  Total or near total handicap

4. Dressing
   - 0  No handicap
   - 1  Slight handicap
   - 2  Moderate handicap
   - 3  Severe handicap
   - 4  Total or near total handicap

5. Ambulation
   - 0  No handicap
   - 1  Slight handicap
   - 3  Severe handicap
   - 4  Total or near total handicap
General Evaluation of Handicap in Functional Activities

0 No handicap
1 Slight handicap in one or two activities
2 Slight handicap in more than two activities
3 Moderate handicap in one or two activities
4 Moderate handicap in more than two activities
5 Severe handicap in one or two activities
6 Severe handicap in more than two activities
7 Total handicap in one or two activities
8 Total handicap in more than two activities

B. Communication Activities of Daily Living

1. Speech
   0 No handicap
   1 Slight handicap
   2 Moderate handicap
   3 Severe handicap
   4 Total or near total handicap

2. Hearing
   0 No handicap
   1 Slight handicap
   2 Moderate handicap
   3 Severe handicap
   4 Total or near total handicap

3. Writing
   0 No Handicap
   1 Slight handicap
   2 Moderate handicap
   3 Severe handicap
   4 Total or near total handicap

General Evaluation of Handicap in Communication Activities

0 No handicap
1 Slight handicap in one activity
2 Slight handicap in two or more activities
3 Moderate handicap in one activity
4 Moderate handicap in two or more activities
5 Severe handicap in one activity
6 Severe handicap in two or more activities
7 Total handicap in one activity
8 Total handicap in two or more activities

C. Travel Activities

0 No handicap
1 Slight handicap in use of public transportation but none in driving
2 Moderate handicap in use of public transportation and in driving--can travel with certain precautions
3 Require personal help
4 Homebound
Goals for Physical Handicaps

GOALS HERE REFER TO WHAT IS EXPECTED TO BE ACHIEVED THROUGH REHABILITATION SERVICES UNDER NORMAL CONDITIONS. EVALUATION OF THESE MEDICAL GOALS SHOULD BE MADE PURELY ON THE BASIS OF THE PHYSICAL DISABILITY AND PHYSICAL POTENTIAL OF THE PATIENT REGARDLESS OF OTHER FACTORS, i.e., EMOTIONAL, PSYCHO-SOCIAL-VOCA TIONAL, ETC.

Goals for Functional ADL

In regard to activities of personal hygiene, eating, bed, dressing, and ambulation, this patient has the physical potential of becoming with:

0  Not applicable - no handicap at admission
1  No handicap
2  Slight handicap in one or two activities
3  Slight handicap in more than two activities
4  Moderate handicap in one or two activities
5  Moderate handicap in more than two activities
6  Severe handicap in one or two activities
7  Severe handicap in more than two activities
8  Total handicap in one or two activities only
9  Will remain totally or near totally handicapped in more than two activities

Goals for Communication ADL

In regard to speech, hearing and writing activities, this patient has the physical potential of becoming with:

0  Not applicable - no handicap at admission
1  No handicap
2  Slight handicap in one activity
3  Slight handicap in two or more activities
4  Moderate handicap in one activity
5  Moderate handicap in two or more activities
6  Severe handicap in one activity
7  Severe handicap in two or more activities
8  Total handicap in one activity only
9  Will remain totally or near totally handicapped in two or more activities
Goals for Travel Activities

This patient has the physical potential of becoming with:

0 Not applicable - no handicap at admission 3 Moderate handicap in use of public transportation as well as driving
1 No handicap in traveling 4 Require personal help in any way of traveling
2 Slight handicap in use of public transportation but none in driving 5 Will remain homebound

Goals for Work Activities

This patient has the physical potential of becoming with:

0 Not applicable - no handicap at admission 3 Moderate handicap - fit for work under sheltered conditions
1 No handicap, fit for any work under normal conditions 4 Severe handicap - fit for specific jobs at home only
2 Slight handicap - fit for specific jobs under normal conditions 5 Total or near total handicap - not fit for work

Length of Time Recommended for Stay in ORC

______ Weeks

C. Psychosocial and Vocational Data

How Many Dependents Does Rehabilitant Have?

______ Dependents

If Married, How Long to Present Spouse? ______ Years

Number of Times Widowed, Divorced or Separated?

_____ None

_____ Widowed ______ Times

_____ Divorced ______ Times

_____ Separated ______ Times

Father's Job for the Most Part of His Working Life
What Was the Rehabilitant's Last Job before Disability or Admission to O.R.C.?

Discharge

Comparison of Discharge Evaluations with Goals Expected at Admission

0. Achieved more than expected goals
1. Achieved expected goals
2. Achievement fell slightly below expected goals
3. Achievement fell seriously before expected goals
9. Other, specify

Medical Status at Discharge

0. No further medical care needed
1. Surgery is needed
2. Physical condition requires further medical care
3. Further psychiatric treatment is needed
4. A combination of 1 and 2
5. A combination of 2 and 3
6. All—1, 2, and 3
7. Cannot be determined
8. Other, specify

Type of Discharge:

0. Before evaluation completed - discharge recommended by staff
1. Before evaluation completed - discharge requested by patient
2. After evaluation completed - admitted for evaluation only
3. After evaluation completed - discharge recommended by staff
4. After evaluation completed - discharge requested by patient
5. Discharge requested by patient during service
6. Patient failed to return after temporary discharge or leave of absence
7. Discharge recommended by staff during services - failure of patient to make satisfactory use of services
8. Services satisfactorily completed
9. Other, specify

Length of Stay at Ohio Rehabilitation Center:

Weeks
Follow-up

Vocational Data

Have you had any vocational training since discharge from O.R.C.?

0  No  2  Yes, through Goodwill Ind.  9  Yes, through other agency, specify:
1  Yes, through BVR

What has been your employment status since discharge?

0  Has not been employed
1  Has had employment, but presently unemployed
2  Employed presently
APPENDIX II

THE FINAL SET OF CATEGORIES AND CRITERIA FOR THE ATTITUDE TOWARD DISABILITY AND REACTION TO DISABILITY VARIABLES

The categories and criteria for each variable were the same before and after the independent judge's content analysis on the 10 per cent random sample of records. The only change was the fact that before the independent judge's suggestions a rehabilitant was classified under a category if he met one crucial criterion, for instance the first criterion in all categories of "attitude towards disability," the fifth criterion in the "retirement" reaction to disability, and so on.

Categories and criteria of the attitude toward disability variable

I. Acceptance

Criteria: a.—Willingness to play expected roles even when disability is not completely eliminated. Typical statement: "I know a lot of boys, who had the same kind of operation and this same kind of trouble, and who are back working. If they can do it, I can do it too." Or: "Everybody has a little something wrong with him. He makes a go of it, and so can I."

b.—Acceptance of modifications in roles and activities due to unchangeable disability residuals.
c.— Cooperation with Rehabilitation Center Program.

d.— Willingness to become reconciled with symptomatology and limitation that are not expected to improve. Typical statements: "I have about made up my mind. I will have to live with the pain." Or: "I am reconciled to feel pain for the rest of my life."

(Note: Two or more of the above criteria should be met.)

II. Rejection:

Criteria: a.— Symptomatology and limitations resulting from disability are accepted only temporarily, if at all, with the perspective of a complete future cure. Typical statement: "I do not want to admit that I am not a "perfect man." I want to leave from here with my back as good as possible—a "perfect back."

b.— Unwillingness to return to work unless completely cured (insistence of becoming physically fit to return to previous job is common).

c.— Unwillingness to accept the medical diagnosis and prognosis about their disability (especially if it is not favorable) and continuous demands for further medical diagnoses and treatment.

d.— Evidence that disability presents a threat to the rehabilitant's masculinity (with regard to his virility or his sexual potency).

e.— Evidence of negative and depreciating feelings toward self due to the disability.

(Note: the first criterion and at least one more should be met.)

III. Use of disability for secondary gains.
Criteria:

a.— Evidence that the symptomatology and limitations resulting from the disability offer to the rehabilitant social emotional secondary gains. Typical statement: "Symptomatology is the only honorable solution for him."
b.-Medical diagnosis of hysterical symptomatology (weakness, paralysis, posture).

c.-Physical complaints not warranted by medically diagnosed physical condition.

d.-Resentment toward any type of rehabilitation treatment, for instance rejection of the entire rehabilitation program or objections to recommended surgery.

(Note: Two or more of the above criteria should be met.)

Categories and criteria of the reaction to disability variable

I. Retirement

Criteria: a.—Explicit or implicit planning to retire.

b.—Perceived inability to return to the occupational world due to advanced age, lack of skills, or physical limitations.

c.—Lack of motivation in acquiring or bettering vocational skills for widening job opportunities.

d.—Relocation of responsibilities, especially financial responsibilities to wives or close relatives.

e.—Lack of concrete vocational planning. (Note: The rehabilitants may occasionally verbalize a vague interest in working but they neither activate any vocational plan nor do they follow leads for employment suggested by the O.R.C. (Note: The fifth criterion and at least one more should be met.)

II. Training or jobs improving status.

Criteria: a.—Jobs are desired that secure a higher prestige, income, and stability but not only stability such as State and Federal jobs).
b. On the other hand, vocational training is desired even when other vocational skills are possessed or when the return to a previous job is possible. (Note: In some cases rehabilitants may have given up their regular jobs in order to come to the Rehabilitation Center with the sole purpose for further vocational training.)

III. Flexibility in Vocational outlook.

Criteria: 

a.—Willingness to become self-supported by returning to any kind of gainful employment. The rehabilitants may indicate a preference for a particular type of work, but if this is not feasible they willingly offer vocational alternatives or they accept suggestions offered by the Rehabilitation Center staff. Typical statements: "If he cannot go to his previous job he would work at something else, even for less pay, just to avoid sitting around. He would move, if a job was available elsewhere."

b.—The rehabilitant may either play an active role in the realization of his vocational plans or he may expect that the Rehabilitation Center will contact employers, give him leads for jobs, and eventually find a job for him. Typical statements: "He considers working but passively expects R.C. to find him a job." Or: "Get me a job and I will do it."

(Note: Both criteria should be met.)

IV. Return to previous employment.

Criteria: 

a.—Definite wish to return to previous employment; lack of suggestion of other vocational alternatives and rejection of any other vocational plan.

b.—Desire to return to their previous employment persists even when the physical requirements of that job are too strenuous for their physical condition and they have been advised against it by their physicians.
c.—Determination to overcome physical limitations, to increase their working tolerance, and to pursue treatment till they are able to return to their former employment.

(Note: One or more criteria should be met.)

V. Independent employment

Criteria: a.—Concrete planning to enter into some kind of independent employment, for instance, establishing a small business.

(Notes: The planning for independent employment should be the central plan and not one of many vocational alternatives.)

VI. Exploitative.

Criteria: a.—Lack of vocational planning toward any specific type of employment; a variety of reasons are devised for refusing job opportunities of suggested vocational alternatives.

b.—Evidence that all rehabilitant's activities are focused on securing a substantial financial settlement with the Industrial Compensation Commission (or other welfare agencies).

c.—Evidence of exaggerating symptomatology and denying benefits from rehabilitation treatments.

(Note: The first two criteria should be met.)
APPENDIX III

METHODS FOR DATA ANALYSIS

The use of statistical techniques in the analysis of the present data deserves a brief discussion and justification due to the nature of the available data. The 147 rehabilitants with back impairments chosen for this study could be regarded either a population or a sample. They could be regarded a population since they represent all males admitted to the Ohio Rehabilitation Center from 1956-1961 with a primary diagnosis of back impairment. The same cases, however, could be considered a sample of a number of populations such as all males admitted to Rehabilitation Centers in the United States between 1956 and 1961 or all males with back impairments in Ohio for the same years. It seems, then, methodologically wiser to consider the examined cases a sample of a not well-defined population. Although this sample is by no means a random one, nonparametric statistical techniques will be used to test significance of difference and significance of association. This is justified since through the use of statistical tests it is only intended to increase the certainty with which apparent differences or associations between variables can be regarded as "true"
differences or associations. Basic probability rules and assumptions underlying the use of statistical techniques will not be violated since the findings will not be generalized to a larger population. The value of the resulting findings will consist mainly in the discovery of leads for the establishment of hypotheses to be tested through random selected samples—provided the pertaining population can be adequately defined.

The nature of the central variable of this study determines and restricts further the type of statistical techniques to be used. Data deriving from the categories of the reaction to disability are measured on a nominal scale. In the case of continuous variables examined with relation to reactions to disability the median test was chosen as the appropriate statistical test. This choice was made because (1) it may be used whenever the variable under study has been measured in at least an ordinal scale, while the other variable (reactions to disability) can be measured on a nominal scale. (2) The use of the median instead of the means frees us from assuming normality of distribution.\(^1\) The extended median test is, in essence, a chi-square test for \(k\) samples and, therefore, it also has the power of a chi-square test.

The median for grouped data (such as length of stay and lapse of time between onset of disability and admission for rehabilitation) was computed on the basis of the following formula:

\[
\hat{\text{Median}} = l + \frac{N - F}{2f} (1)
\]

The median for ungrouped data (such as age at onset of disability and age at admission for rehabilitation) was the \(\left(\frac{N+1}{2}\right)\)\textsuperscript{th} ranked value.\(^3\) In the cases where the \(\left(\frac{N+1}{2}\right)\)\textsuperscript{th} rank was not separate rank because of "tied" ranks, the technique of linear extrapolation was utilized.\(^4\) The chi-square values were calculated according to the formula: \(^5\)

\[
\text{Chi-square} = \sum_{i=1}^{4} \sum_{j=1}^{k} \frac{(O_{ij} - E_{ij})^2}{E_{ij}}
\]

In some cases the reactions to disability were combined into two groups representing the rehabilitants' plans to continue or discontinue their working role. A discontinuity of the working role in this case does not necessarily imply a permanent discontinuity except in the case of the rehabilitants who plan to retire. At least some of the

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\(^3\)Ibid., pp. 110-111 for a detailed description.

\(^4\)Ibid., p. 111.

\(^5\)Siegel, *op. cit.*, p. 175.
rehabilitants who were caught in a conflict as to whether to
return to work or not may eventually solve their conflict by
returning to work. It is also conceivable that a few of the
rehabilitants who, while at the Rehabilitation Center were
interested only in a settlement with the Industrial Commiss-
ion, may eventually return to some kind of work after a
final award has been made and their case is closed.

The analytical purpose of combining into one category
all rehabilitants who planned to discontinue temporarily or
permanently their working role, and into another category all
rehabilitants who planned to continue their working role,
was twofold: (1) To make the use of a chi-square test possible
whenever the expected frequencies were smaller than five in
more than 20 per cent of the cases; 6 (2) To determine whether
there was a significant relationship between the above two
categories and antecedents and consequents variables, when-
ever the formulated hypotheses called for such a test. When
the reactions to disability were thus combined into two
groups the chi-square test was again utilized when applying
the median test because of the size of the sample (N ≤ 40). 7
The chi-square for 2 x 2 contingency tables was calculated
on the basis of the following formula, which incorporates

6 Ibid., pp. 178-179.
7 Ibid., pp. 111-116.
a correction for continuity:

$$\text{Chi-square} = \frac{N \left( \left| AD - BC \right| - \frac{N}{2} \right)^2}{(A+B)(C+D)(A+C)(B+D)}$$

When the variables examined with relation to reaction to disability were measured on a nominal scale, the only appropriate statistical test were the chi-square and the contingency coefficient. The formula used for the calculation of the contingency coefficient is:

$$C = \frac{x^2}{N + x^2}$$

The correlation expressed by the contingency coefficient is influenced by the size of rows and columns because the upper limit the coefficient may reach depends upon the size of the contingency table. The correlations expressed by the contingency coefficient will be largely comparable in this study because they were obtained in most cases from contingency tables of the same size.

**Measurement of social class**

The rehabilitants' social class was determined on the basis of their occupational rank. The original North-Hatt Scale was utilized for the assignment of rank to the

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8Ibid., p. 107.
9Ibid., pp. 196-197.
10Ibid., p. 201.
rehabilitants' last job at the time of the onset of the disability. In addition to the original North-Hatt scale, we used an expanded form of the scale devised by faculty members of the Sociology Department at the Ohio State University.¹¹ In judging the different reported occupations the Dictionary of Occupational Titles was extensively consulted.¹² Finally, in the case of 48 occupations not included in either the original or the expanded North-Hatt scale the corresponding status was determined through the same extrapolation method used by the Sociology Faculty members in developing the extended North-Hatt scale. The five required judges consisted of a professor of sociology, the writer, and three Ph.D. candidates of sociology.¹³

In cases where the rehabilitant reported more than one occupation, the average of the ranks assigned to each occupation was considered to be his occupational rank. In cases where the rehabilitant reported his occupation to be, for example, a "pipe fitter's helper," or, an "assistant foreman in a factory shop," his occupational rank was

¹¹Russell Dynes, et al., "The North-Hatt Scale." Mimeographed material, Ohio State University: Department of Sociology and Anthropology.


¹³The extrapolation method is described in Dynes et al., p. 1.
considered to be five points below that of a pipe fitter's rank or of a foreman in a factory, respectively, by concensus of all judges.
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AUTOBIOGRAPHY

I, Constantina Safilios Rothschild, was born in Jannina, Greece, November 25, 1934. I received my secondary school education at the Sixth Gymnasium for girls in Athens, Greece and my undergraduate training at the Agricultural College of Athens, Greece, which granted me the Diploma in Agriculture in 1957. I received the Master of Science degree from the Department of Agricultural Economics and Rural Sociology at the Ohio State University in 1959. While attending the Graduate School there, I held a fellowship of the Anglo-American-Hellenic Bureau of Education from 1957-58, a research assistantship in 1958, and University Fellowships for the following three academic years. From 1961-62 I was a full time research associate with Professor Warren H. Dunham at the Lafayette Neuro-psychiatric Clinic of Detroit. During the academic year of 1962-1963 I held a predoctoral fellowship of the Office of Vocational Rehabilitation.