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THE REBIRTH FANTASY IN CATATONIC SCHIZOPHRENIA  
AND ITS IMPLICATIONS

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THE REBIRTH FANTASY IN CATATONIC SCHIZOPHRENIA  
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# THE REBIRTH FANTASY IN CATATONIC SCHIZOPHRENIA AND ITS IMPLICATIONS

## CHAPTER I

### INTRODUCTION

In clinical psychiatric literature there are a number of references to the fantasy of rebirth in catatonic schizophrenia. Patients of this type are said to verbalize the idea that they are being born again. Discussion of other disorders occasionally include some reference to the rebirth fantasy, but it seems to be in respect to catatonic schizophrenia that one finds the preponderance of such associations. We do not know if this relationship holds for levels other than verbalization (e.g. preconscious or unconscious levels). It may be that the rebirth fantasy is a general phenomenon which is experienced by everyone at some time or other and that catatonics merely verbalize it more frequently because of factors having to do with the psychopathology of catatonia itself. Or, it may be that, in addition to verbalizing it more frequently, this fantasy is found more frequently in catatonics at nonconscious levels. The initial part of this study attempts to resolve this question.

### Catatonic Schizophrenia and Rebirth

Early psychiatric references to rebirth ideation occur in two

publications of 1920, a volume by Kempf (1920) and a paper in a collection of articles by Nunberg (1948). There may be earlier clinical notations of this phenomenon which are perhaps found in European publications.

Catatonic schizophrenia, as described by Noyes (1949), is characterized by phases of stupor and excitement in both of which negativism and automatism are prominent features. Frequently these phases alternate, although many times a given catatonic episode may present but one phase throughout its course. Of the various types of schizophrenia, the catatonic most frequently has an acute onset. Prognosis for recovery with reintegration of the personality is more favorable than in the case of other types of schizophrenia. In stupor, the patient is uncommunicative, inattentive, preoccupied, with emotional poverty and dreaminess. His face becomes masklike and he may assume a rigid posture which he may maintain for months. Other writers (Fenichel, 1945; Kempf, 1920; Schilder, 1951a) have observed that the frequent "curled up posture" (arms, legs, and trunk flexed) is reminiscent or representative of the fetal position.

In a chapter on catatonic schizophrenia, Kempf (1920) discussed nine cases. In the four most lengthy discussions there is a reference in each to the experience of rebirth fantasy. The five briefer ones contain no allusions to rebirth. In one instance he described what can be taken as an illustration of Freud's symbolic equation of water with birth:

He completely submerged himself in a tub and drank inordinate quantities of water, exclaiming enthusiastically that he was able to force the water directly through his bowels while he was submerged. . . . While in the tub he had incongruous fantasies about a rebirth (Kempf, 1920, p. 596).



Other writers have also noted the catatonic's tendency to immerse himself. Wolff reported examples of his patients' experiences.

His chief fear was that they might think he was dead and bury him alive. He also thought he was going to be drowned when he was given a bath. Another patient reported his previous stuporous experiences as during that period he thought he was four feet under water . . . he had thoughts of his mother which told him of the difficulties of his birth because of his position in her body. He also believed he was being reborn within himself (Wolff, 1932, p. 507).

In an article by Nunberg (1948) there is a detailed presentation of the dynamics which underlie the symptoms and delusions of an adult male catatonic. Particular emphasis in the total picture is accorded to fantasies of rebirth and regeneration. Nunberg explained the vividness of childhood impressions in schizophrenic regression by the lifting of early repressions with increased attention to the inner world. He stated that, in development generally, attention to the inner world precedes outwardly directed attention. The affect released in the regressed state contains a "tendency toward repetition of an important experience; the most important experience for the individual is his birth" (Nunberg, 1948, p. 23).

Thus, unlike most writers on catatonia, Nunberg offered a postulated cause of the appearance of the rebirth fantasy. However, there is still no explanation of why the rebirth fantasy should appear in catatonia more frequently than in other types of profound regression.

This area has not failed to attract the interest of Schilder, too (1951a and 1951b). He speculated that damage to the strio-pallidal system of the brain, which is an old part of the brain in the phylogenetic sense, might account for the postural disorders of catatonia and

that one might therefore be justified in associating catatonia with embryonal regression.

The inclination toward a neurological basis of catatonia was in disagreement with Kempf (1920), who argued against neurological and metabolic causes of catatonia. Kempf cited the observation that the sleep movements in catatonics are not different from those of normals.

Schilder also referred to Nunberg's case and agreed that the "catatonic attack represented birth" (1951a, p. 88). In further harmony with Nunberg, he proposed the "déjà vu" experience in regression as an explanation of the rebirth fantasy. He stated, "The place that one has already been before is the uterus" (1951a, p. 108).

Thus, Schilder offered in turn a neurological then a psychological basis of the rebirth phenomena in catatonia. But his summation in effect was that this problem is unresolved and still remains an open question (1951b).

Sprague (1940) considered some of the catatonic symptomatology to be a regressive reenactment of the habits of normal infancy. He illustrated this observation by citing such actions as verbigeration, repetition, and muscular innervation which are present in both the catatonic and normal infant. These actions, he theorized, represent the fact of being alive to the experimenting infant and to the regressed catatonic. Motor inhibition, too, has its origin in early life. The infant, said Sprague, tenses all his muscles because he does not know which one to use. The same process in the catatonic results in *cerea flexibilitas*.

He continued, in agreement with Kempf (1920), Rosen (1953), and Bettelheim (1956), that at the deepest levels the catatonic feels

threatened with extinction and there remains nothing for him to attempt except a desperate clinging to the single remaining fact--that of muscular force. This, he supposed, is the reason why catatonics are "so often fascinated with the notion of life, death, submission to force, rebirth, and the like. . . . In stupor probably we can say that in a psychological sense he is dead" (Sprague, 1940, p. 578).

Tausk (1933) suggested that catatonic motor symptoms (postures and movements) are not infantile regression but rather a recurrence of impulses from the period of intrauterine existence.

The observations of Boisen (1936) are particularly pertinent to the foregoing ideas and to concepts of restitution which follow. Boisen wrote from the standpoint of a mental hospital chaplain of many years service. Also he has had the experience of several personal episodes of catatonia. He stated, "Rebirth fancies represent constructive and progressive elements. The stupor may thus merely mark the death phase of a dominant rebirth fantasy. Before an individual can enjoy new life he must die; and before the universe can be remolded it must be destroyed" (Boisen, 1936, p. 110).

Boisen also pointed out that regressive tendencies go deeper in "catatonic dementia praecox," and he characterized this group as "individuals who did not have recourse to a comprehensive projection of their problems upon their colleagues, as in the paranoid group" (Boisen, 1936, p. 111). Also, he found that the tendency to use projection mechanisms coincided with unfavorable outcomes while the nonuse of this device (which characterized the catatonics) generally made for favorable prognoses.

Further evidence of a connection between catatonia and the rebirth fantasy is suggested in an autobiographical account by a social case-worker (Anonymous, 1955). This author experienced three separate psychotic episodes in a period of four years. Two of the episodes were diagnosed as catatonic schizophrenia. Although the rebirth fantasy was not a central or predominant feature of her reported experiences, it was mentioned explicitly.

Other psychoanalytic writers have ignored the rebirth problem in their discussions of catatonia. For example, Bleuler (1950) spoke of negativism in mute states as the rejection and avoidance of painful external influences. Arieti (1955) explained catatonic immobility in terms of a paralysis of the patient's will due to a fear that any action on his part will be felt to be wrong and punishable.

It seems likely that, in the writings on catatonic schizophrenia, reference to rebirth or non-recognition of this phenomenon depends on the particular writer's areas of concern and emphasis. Certain writers have stressed formal rather than contentual aspects. Others have dwelled on the rebirth fantasy so as to imply unquestioned importance of this type of ideation in catatonia.

That the rebirth fantasy occurs regularly or even frequently in catatonic schizophrenia is not an established fact. Among the clinicians with whom the present author has discussed this question, there are those who feel that the rebirth fantasy in psychosis is a clue to the imminency of catatonic symptoms if they are not already present. Others, however, have not found any noteworthy connection between catatonia and rebirth ideas.

As seen in the above review, this phenomenon seems to have caught the attention of relatively few clinicians. At least, only a few have cited it in their writings. But the ones who have written about it, and who have been cited here (e.g. Kempf, Nunberg, Schilder, and Rosen), are recognized as clinicians of eminence and stature. The observations and reports have mainly been anecdotal with few attempts to explain this fantasy in a motivational context or in a theoretical framework. Moreover, except for the stress on the concept of regression, there is not much theoretical agreement among the writers cited.

The primary conclusion is that there is no systematic account of the rebirth fantasy in catatonia in regard to why some individuals have it and others not and its possible relation to other personality characteristics. In addition, none of the writers have accounted for its particular appearance in catatonia, nor was the point explicitly made that rebirth ideation is more typical of catatonia than of noncatatonic types.

#### The Rebirth Fantasy in Other Contexts

Alexander (1931) stated that the Bhuddist trance is catatonia in that it represents a turning away from the outer world along with the typical posturing and rebirth ideation. The writings of Bhudda, he pointed out, also contain ideas of rebirth.

Kelsey presented three cases of hypnotic regression in which his patients allegedly expressed impressions from prenatal life: "I am very tiny. . . . I used to be part of a 'oneness' and now I am separate. . . . this is the womb. . . . I can't see (patient curled up and immediately assumed the fetal position)" (1953, p. 218). In these examples

it is difficult to determine if the hypnosis really evoked latent fantasies or if the subjects merely complied with what they believed to be the hypnotist's wishes.

Nicoll, representing the Jungian position, asserted that the rebirth fantasy is universal, present in mythology and all religions, even the most primitive ones. He stated, "Whenever an entirely new attitude comes into a person's life, psychological rebirth to some extent has occurred" (1920, p. 125). These new attitudes encompass biological changes such as occur during puberty and menopause. Nicoll based these statements on his analyses of the dreams of people in critical periods of life.

In a discussion of the psychoanalytic treatment of a woman with an obsessional neurosis, Warburg included the rebirth fantasy, along with ideas of pregnancy and suicide, as a predominant theme (1938).

These references probably represent a fair sample of the clinical literature on the rebirth fantasy in noncatatonics. According to the authors who have been cited, the rebirth fantasy is expressed by diverse groups of individuals in diverse ways. The catatonic expresses it directly and spontaneously (that is, "I am being reborn"), presumably in part as a function of his psychosis; the Bhuddist monk expresses it under the extraordinary condition of a self induced trance; any individual (according to Jungian theory) may dream of it when a crucial change has occurred in his life.

#### Regression and Restitution in Psychosis

The psychoanalytic concepts of regression and restitution seem to clarify some important aspects of schizophrenia, an admittedly not well

understood disorder. In psychoanalytic terms, regression in schizophrenia occurs when the ego is no longer able to cope with impulses and the outer world. The anxiety experienced in attempting to cope with life's problems becomes so intense as to constitute a threat to existence (Rosen, 1953). Thus, in Rosen's terms, schizophrenia is a means of survival in which the individual reverts to a much earlier level of organization.

In schizophrenic regression, withdrawal from the outer world is far more extreme than regressive withdrawal found in normals and neurotics. The withdrawal of interest and energy from the outer world leads to the frequent delusion that the world is dead or that its destruction is imminent. Regression differs from the other defense mechanisms in that it "happens to the ego" (Fenichel, 1945) and, while regression is resorted to in order to survive, it is nevertheless experienced frequently as a major threat. That is, the isolation and loneliness themselves are desperately feared. At this point in the regressive process there are two possible courses. The individual "surrenders" into a passive and stationary psychosis with no hopes of re-establishing what he has lost, or he attempts to recover by changing the outer world in his fantasies.

The term restitution covers these various attempts of the schizophrenic to regain lost objects. By means of delusions, hallucinations, and "world reconstruction fantasies" the painful outer world is changed so that, where previously emptiness existed, inspiration and reconstruction have taken its place.

In the same way that fantasies of world destruction are characteristic of early schizophrenia, various fantasies of reconstruction frequently occur in later stages. They consist of delusions that the patient himself has the task of

saving the world, and has perhaps been chosen by God to bring order into the world again, or simply of the feeling that some kind of salvation or rebirth is to be expected (Fenichel, 1945, p. 424).

That the rebirth fantasy in schizophrenia can be regarded as a re-stitutive attempt is consistent with the views of Bettelheim (1956). In normals and neurotics, rebirth dreams, according to the Jungian beliefs (Nicoll, 1920), seem to represent efforts to adapt to and mobilize against unusual stresses. Bettelheim's concepts of schizophrenia were based on observation of fellow prisoners in concentration camps (many of whom became schizophrenic) and on schizophrenic children in a residential setting. He considered this disorder to be a reaction to an "extreme situation," a situation in which the individual finds his existence to be totally in the hands of other people while he himself is utterly powerless. He pointed out that the prisoners who recovered from psychosis did so by "extensive restructuring of their personalities," and he speculated that this was necessary because the former personality failed to protect the individual against the traumatic effects of the extreme situation. In effect, then, they emerged as new personalities. In addition, he noted the expression of the rebirth fantasy in schizophrenic children at the point of their beginning emergence from psychoses.



## CHAPTER 11

### EXPERIMENT ONE

#### Problem and Hypothesis

If someone happened to discover that the Jungian idea of universal fantasies was a valid concept then the point of this study would appear to be nullified. However, even if the rebirth fantasy is universal, its significance for the individual would still depend on how fixed or how strong a theme it might be. And we would still be faced with the problem of individual and group differences in the strength of this fantasy.

The significance of this study lies in the fact that it is a first step in attempting to gain a more complete understanding of the rebirth fantasy and whether it has a particular relationship to catatonic schizophrenia. Although this research cannot expect to settle the issue, there may be a link between the rebirth idea and the exceptional symptoms of catatonia.

The technique of testing for the presence of the rebirth fantasy was a perceptual one, the Rorschach test. The underlying theoretical concepts are also perceptual, namely the hypothesis-set concepts of Bruner and Postman. Before establishing the relationship between rebirth ideas and hypothesis-set, it is necessary to clarify certain assumptions and background factors.

As suggested from the discussion of regression and restitution, the rebirth fantasy is assumed to be part of the individual's attempt to reorganize himself, to adapt to new stresses, or to recover what he has lost. As such, it occupies a core or central position in personality functioning and takes its place with other central factors such as the individual's major values, favorite defense mechanisms, identifications, self concept, and body image. It is difficult to categorize the rebirth fantasy beyond stating that it is a fantasy. It seems to have some reference to the self concept, and it may derive from the process of regression. Whichever category it rightfully fits, if we can accept the point that the rebirth fantasy is part of the restitutive processes, whether in schizophrenics or normals, then it follows that it has importance for the individual; in Lewinian terms it has a high degree of valence, in Freudian terms a high degree of libidinal cathexis, or, in the language of the cognitive theories of Bruner and Postman, it forms the basis of a strong hypothesis.

Writers like Allport (1955) and Freeman (1948) have noted that the self concept and other "long standing sets" form the basis of much perceptual behavior. One may modify this to say, behavior, perceptual or otherwise. If one can pose the intervening variable of a hypothesis or set which is based on the self concept then it follows that such hypotheses-sets serve to organize much of the individual's perception and behavior. The necessary assumption, then, is that for those individuals who have ideas of rebirth, these ideas form the basis of a relatively strong hypothesis-set; hence, certain of their perceptions are based on this hypothesis-set.

The rationale: hypothesis-set theory. Experiments on set have traditionally been concerned only with those sets established in the experimental situation by means of instructions or other contrivances of the procedure. A relatively neglected problem has been that of the sets which the subject uses in his daily life and which he automatically brings with him to the experimental situation. Such sets are said to determine the content of perceptions in certain situations (Freeman, 1948).

The concepts of hypothesis-set theory apply generally to cognitive behavior but there is considerable emphasis on perception. The following summary of this position is based on papers by Bruner (1951) and Postman (1951) and on an interpretive chapter in F. H. Allport's book (1955) which also utilized the set concepts of Freeman (1948).

Perception is not merely the registering of stimuli by a passive organism. Rather, perception is an actively selective process which is largely determined by predisposing tendencies. In short, we do not merely "see" but we "look for." The basic idea underlying the formulations of Bruner and Postman is that all perceptual processes represent hypotheses which the organism has set up or which are evoked by the particular situation. These hypotheses are largely in the background and are usually unconscious. They require "answers" in the form of some further experience, answers that will either confirm or disprove them.

Thus, the organism is eingestellt or set to perceive in a particular way. This set is equivalent to the hypothesis. The organism brings these sets to any given situation; they then serve to organize and "transform" information which comes to the organism from the environment. Perception, or any cognitive act, is said to be a progressive series of

trials and checks until a correct matching of the hypothesis and the information occurs.

Central to these concepts is the idea of hypothesis strength. It is defined operationally by the amount of appropriate stimulus information needed to confirm or negate a given hypothesis. A strong hypothesis needs little information to confirm it, and a weak hypothesis requires more appropriate information to confirm it. In the absence of decisive stimulus information, a dominant (or monopolistic) hypothesis alone can sometimes organize the perceptual situation. Allport spoke of aggregates composed of energy from the hypothesis and from the stimulus. When such aggregate energies rise above the threshold level, perception or overt action occurs. What is most important for this study is the theorem that a strong hypothesis needs little informational (stimulus) support to organize percepts. Bruner (1951) illustrated the operation of strong hypotheses in which subjects were selected according to their predominant values as defined by the Allport-Vernon test. A stooped figure was presented tachistoscopically, which rendered the input information low. The "religious" subject perceived the figure in prayer or reverence. The "economic" individual perceived the figure as stooped over in work.

There are four conditions associated with hypothesis strength. These are frequency of past confirmation, the paucity of alternative hypotheses available, motivational support, and cognitive support.

The Rorschach test as the technique of measurement. The technique used to determine the presence or absence of rebirth ideation was the Rorschach test. It is introduced in this section because, before proceeding further, there are some theoretical issues which need to be re-

solved. Actually, the Rorschach cannot negate the presence of the rebirth fantasy since, if this fantasy is universal, it may exist at "sub Rorschach" levels. In this study the term presence of the rebirth fantasy implies a certain degree of strength, and hence, readiness to be evoked.

First, an indirect method (which the Rorschach is) was required. To simply ask individuals if they entertain ideas of rebirth would have met with serious obstacles for the reason that one may have a fantasy and deny having it either because he does not want to admit it or because he is not aware of it. This is predicated on the clinical concepts of resistance and repression. These factors may be circumvented by eliciting the fantasy through indirect means, and this is an assumption which always underlies the use of projective tests. An individual may reveal fantasies on the Rorschach by producing responses which symbolize the fantasies or which indirectly represent them. For example, an individual concerned with rebirth is not likely on the Rorschach to see himself being born, but he may produce images of animals, birds, fish, or other biological organisms in the process of being born or in a pre-birth stage of development. Stated differently, it seems plausible to expect that a hypothesis-set built up on ideas of rebirth might determine the selection of content and images on the Rorschach in such a way that they represent or symbolize rebirth.

The criteria for the presence of rebirth ideation rest on certain Rorschach response content. The rebirth responses, it was assumed, include: embryo, baby (or animal) in the mother (or uterus), baby (or animal) being born, fetus, unborn baby (or animal), larva, cocoon,

chrysalis, pupa, grub, caterpillar, tadpole, egg, and seed. What first led to proposing this type of content was the experiences gained in testing a number of catatonics in a state hospital setting.

The justification for the assumed meaning of these responses lies in the fact that all of them possess a common attribute of representing some pre-stage of biological development. In addition, all are related to the theme of rebirth in an allegorical sense and in possessing similarity in form and function.

There is one source of external validation suggested from Warburg's example (see p. 8). Her patient expressed the rebirth fantasy in terms of "coming out of her brown chrysalis like a beautiful butterfly after delivery" (Warburg, 1938, p. 504).

It is recognized that this list of responses probably does not exhaust the totality of ways in which rebirth might be expressed on the Rorschach. There are, as Fromm (1955) pointed out, "personal" and "accidental" symbols which are discoverable only by techniques more extensive and involved than the Rorschach. There are also undoubtedly many other sub-cultural (e.g. colloquial, occupational, etc.) symbols which the individual could use. The assumption was necessitated because there is little proof of the validity of these symbols and there is nothing in the Rorschach literature which touches on this problem. However, there does seem to be an appreciable degree of face validity and generality to these symbols.

One might take recourse to the classical symbol of birth, namely water, which is frequently mentioned in psychoanalytic writings (Abraham, 1955; Ferenczi, 1950; Freud, 1935). A preliminary study (Krimsky, 1957),

however, showed that water responses were not found more frequently in catatonics' Rorschachs than in those of noncatatonics. In that study, it was pointed out that it is unlikely that dream and myth symbols can be transposed to the Rorschach and yield equivalent meaning inasmuch as these sources present different levels of data.

To sum up then, while finality and proof are lacking, there is support for this assumption in theory.

In its method of classifying subjects according to the presence or absence of certain Rorschach content, this type of approach is akin to two other studies (Cleveland and Fisher, 1956; Fisher and Cleveland, 1956). These authors derived a typology of body imagery, a "barrier" group and a "penetration of boundary" group. In the barrier group the Rorschachs show emphasis on the outer surfaces of objects (e.g. turtle with shell, cave with rocky walls); in the penetration group the Rorschach content reflects a periphery in which softness and permeability are stressed.

To restate and summarize the position taken, we have the following points:

1. The rebirth fantasy, when present, is part of the restitutive and adaptive efforts of individuals who undergo some form of stress.
2. Insofar as it is an urgent matter, the restitutive efforts form the basis of a strong hypothesis-set. Hence, the rebirth fantasy may constitute a relatively dominant hypothesis-set.
3. Rorschach images and content tend to be selected and organized by the operation of strong hypotheses-sets.
4. Content reflecting concern with rebirth would most likely appear

in the Rorschach protocols of those individuals for whom the idea of rebirth supports a strong hypothesis-set.

The hypothesis of this experiment is based upon the proposition that the catatonic has certain hypotheses-sets built up mainly on his particular type of regression and restitutive attempts. These hypotheses-sets, largely unconscious, help to shape perception and other cognitive functions and, in the Rorschach test, some of the content of his responses in the direction of expressing rebirth fantasies.

The experiment consists of three parts. The procedures of the first two were assumed to tap different levels at which the fantasies may be operating. The third part involved a different aspect of perceptual functioning. Specifically, the three parts asked these questions: Do catatonics give more rebirth responses on the Rorschach test than non-catatonics? Do catatonics select more rebirth responses on a multiple choice adaptation of the Rorschach? Here, the technique is presumed to tap a more peripheral level of awareness than the conventional Rorschach. And finally, do catatonics, in a series of pictures in which a rebirth picture is included, report the rebirth picture in a different temporal position from noncatatonics? It is assumed that the sequence of perceptions, in such a situation, is determined by the nature of the dominant hypothesis-set.

### Subjects

One experimental group (40 subjects) and two control groups (20 subjects each) were used. The age range was 18 to 42 years. Individuals with defective intelligence were excluded. In three instances there was some question about mental ability. This was resolved by



administering the Vocabulary subtest of the Wechsler Bellevue Intelligence Scale (Form I). The prorated weighted scores were found to correspond to IQs within the Dull Normal range, and these subjects were retained. The control groups were equated with the experimental group for age and years of education, and each group had an equal number of males and females.

Experimental group. This group, herein referred to as Group C, contained 40 patients institutionalized at Central State Griffin Memorial Hospital who had been diagnosed as catatonic schizophrenia. The initial criterion was the official institutional diagnosis. These subjects were selected from a list of 159 patients in this classification and within the stated age range. The list was obtained with the aid of IBM facilities of the Biometric Division of the Department of Mental Health in Oklahoma City. Subjects who had had a previous Rorschach test at Central State Hospital were omitted since the results might have originally influenced the choice of diagnosis. Thus, this possible source of circularity was avoided.

The vast majority of the 159 catatonics were known to be too disturbed, mute, intellectually deteriorated, or too resistive to be testable. Nevertheless, 40 subjects in this group were able to cooperate satisfactorily though some required two sessions of testing.

In the examination procedure it was advantageous, as is always the case in clinical work, to allow a period for the establishment of rapport with each subject. This was necessary to facilitate adequate cooperation, and the method of securing it was usually spontaneous and individualized. The test was introduced with a statement such as, "We would like to

do these tests in order to help us understand more about the condition of patients here. This will perhaps aid us in knowing better how we may be of further help to you." This remark was inappropriate in some instances, and it was often necessary to improvise. The same practice was adhered to in testing the hospitalized control subjects.

Hospital control group. This was a noncatatonic hospitalized group which contained 20 subjects. It is referred to as Group H. Among the 10 males were three with chronic alcoholism (one 'with Psychosis'), one depressive psychosis, one sociopathic personality, four paranoid schizophrenics, and one with schizophrenia, undifferentiated type. Eight of the females were schizophrenic, two of paranoid type, one of affective type, five of undifferentiated type. Two others carried the diagnosis of paranoid psychosis.

These subjects were selected from the same wards and services as the catatonics so that they were fairly similar to the catatonics in regard to length of hospitalization, factors of idleness or occupation, and types of care, treatment, and supervision. The service chiefs made the selections from ward rosters or with the help of ward physicians. Each service furnished a number of Group H subjects equal to half the number of catatonics who had been secured from that particular service. For example, Service B furnished eight female Group H subjects and 16 female catatonics. Lexington Annex furnished two controls (one of each sex) and four catatonics (two of each sex).

Normal control group. The second control group (Group N) was composed of 10 male and 10 female "normal" individuals. Thus, the "others" with whom the catatonics were compared refer to a psychiatric sample and

a normal one. The criterion of normality was the subject's admission that he had never sought psychological help for himself, had never been hospitalized for psychological reasons, and had never deemed either of these things to be necessary. Additional criteria were the clinical impressions gained during the testing and the Rorschach test results. In the experimenter's estimation, the subjects included in Group N did not present any noteworthy tendencies toward psychopathology.

The subjects were secured in Garvin County, the majority being from Pauls Valley. They represent a variety of occupations. Among the males, the group included two hospital attendants, two farmers, a gas station attendant, a carpenter, a teacher, a salesman, a shoe repairman, and a college student. Among the females were two college students, three housewives, two waitresses, a typist, a lab technician, and a cook.

With some of these subjects the experimenter had previously had some acquaintance. Hence, when they were approached with the request for "an hour or two" of their time "to take part in a scientific psychological research problem," it was usually not a difficult matter to secure their cooperation. Some of these subjects, on completion of their tests, aided in securing the services of others.

There was no attempt to control the variable of occupation since there was no prior knowledge of any possible relationship between occupation and rebirth preoccupation. However, the original conditions of selection of subjects specified that none would be drawn from such occupational pursuits as horticulture, obstetrics, genetics, poultry, biology, embryology, or any type of animal breeding. It was felt that an occupation, with its everyday concerns, could lead one to produce

Rorschach content which directly mirrors such concerns independently of non-occupational considerations.

### Procedures

Group C was tested first, and the age and education information was tabulated on frequency charts. When the control groups were tested, the same variables were checked, and an attempt was made to keep differences between the groups on these variables at a minimum.

The rebirth hypothesis was tested by using three different techniques, the Rorschach test, a Multiple Choice Rorschach test, and the Picture Series Test. In combination with the conventional Rorschach, the latter two techniques were included to allow testing of the hypothesis at levels different from that of the Rorschach. The techniques and their administration are described in the following paragraphs. All tests were administered individually in the order stated above.

The Rorschach test. This test was administered with these instructions:

I have ten cards here and each one has the photograph of an inkblot. I will show them to you one at a time and I would like you to tell me what you see in them, what they appear to be like or what they remind you of. Different people see different things in these cards, and there are no right or wrong answers. I'm simply interested in what they look like to you. Here is the first one.

Following the free association, in which the subject reacted to each card successively without interruption, an inquiry was performed in the usual manner. After the three tests were completed, the Rorschach was scored according to the Klopfer system (Klopfer et al., 1956), and the rebirth responses or the fact of their absence were tabulated.

The Multiple Choice Rorschach Test. Immediately following the

conventional Rorschach, the Multiple Choice Rorschach Test (MCRT) was administered. Anticipating that only a minority of subjects perhaps would show rebirth symbolism on the Rorschach, this test was introduced to facilitate a fuller assessment of the presence of rebirth ideas as well as to provide a firmer basis of group comparison. Also, it was thought that the MCRT would be handled more easily by subjects who could not produce many responses (of any type) on the conventional Rorschach.

Originally, this test was devised as an efficient method of screening armed forces for psychopathology, and it is quite a different technique from the individual Rorschach. Harrower (1945) used a choice of ten responses per card, and Singer (1950) used several forms of four and ten choices per card in his validation study.

The MCRT as used here is not an established technique but rather an adaptation of some of Harrower's and Singer's content for the present purposes. A choice of three responses was given, of which one is indicative of rebirth ideation according to the criteria stated above (see p. 15).

Although this part of the procedure pertains to the same hypothesis, the method probably taps a more peripheral level of awareness than does the conventional Rorschach. One would say a more peripheral but not necessarily a conscious level. The basis of this idea is that on the MCRT the subject was asked not to produce but merely to recognize. If a subject has a strong hypothesis based on the rebirth fantasy he may spontaneously produce it on the Rorschach. However, it would not require as strong a hypothesis to recognize information which is presented as it would to organize ambiguous material and produce a given percept.

For each card the serial position in which the rebirth choice was presented was randomized among the three. This was accomplished by placing three pennies in a jar, designating one of the three as "rebirth" and two as neutral. The jar was shaken and a confederate selected one then another of the coins without looking. For Card I of the Rorschach, the position of the rebirth choice was recorded according to the order in which the pennies were selected and the process was repeated for the remaining nine cards. The neutral choices were selected from the lists of Harrower and Singer so that their plausibility (i.e. formal congruence with the blot stimulus) would not be too far fetched.

In most cards they are appreciably more plausible and given more frequently than the rebirth choice. In Card X, for instance, the "caterpillar" is a "usual" response though not a popular one. Nevertheless, it is no more frequently given than the neutral percepts of "two people" and "a dog." Table I lists the response choices.

The instructions for the test were:

Now let us go through the cards again, but this time it will be a little different. I'm going to name three things, and you choose the one which the inkblot or any part of it looks like the most. Here is the first card, and you choose one of these: a wolf's head, larva, or an emblem.

The subject's choice was recorded and the succeeding cards were shown. The test score was the number of rebirth choices.

The Picture Series Test. The original purpose of the Picture Series Test (PST) was to test certain hypotheses derived from Rorschach test theory. The PST consists of a series of cards, each containing 10 pictures. The cards are eight inches long and ten inches wide. Each of the 10 pictures included is two inches on each side. The pictures on

Table 1

Choices on the MCRT

Card	Choice	Card	Choice
I	1. A wolf's head 2. Larva 3. Emblem	VI	1. Egg 2. A turtle 3. A bed post
II	1. A butterfly 2. Cocoon 3. A bomb bursting	VII	1. A symbol of birth 2. A map 3. Ice and snow
III	1. Rooster 2. Blood 3. An unborn animal	VIII	1. A biology slide 2. Two flags 3. Chrysalis
IV	1. Mountain 2. Seeds 3. Animal head	IX	1. Baby in the mother 2. Sea horses 3. A violin
V	1. Alligator's head 2. X-ray picture 3. Embryo	X	1. Two people 2. A dog 3. Caterpillar

the card are arranged in four adjacent vertical columns, two containing two pictures and two containing three pictures. There is an irregular arrangement of the horizontal rows intended to facilitate a "skipping around" and a more valid method of getting the subject to report what he sees in the order in which he sees it instead of in a fixed order, such as from left to right or from top to bottom. The photos are achromatic. Among the pictures on each card there are two pictures of human beings, an assortment of landscapes, horizons, aerial views of terrain, houses, and various man-made objects.

The PST was adaptable to the problem of the rebirth fantasy due to the inclusion by this test's originators of rebirth symbols in some of

the pictures. The selected cards were numbered on the back from one to ten. They were presented with these instructions:

I'm going to show you some photographed pictures. Each one has different pictures on it. I want you to tell me what you see as you see it. You don't have to follow any set order. Just tell what you see first, then second, and so on until you've gone through the 10 pictures on each card. You can skip around. Here's the first one.

The subject's answers were recorded verbatim, and the sequential position of the rebirth picture was noted. The rebirth pictures on eight of the photos correspond exactly to the rebirth symbols established for the Rorschach test. Depicted are a caterpillar, turtles hatching from eggs, snakes hatching, birds hatching, seedlings, a bird with a nest of eggs (on two pictures), and a nest of eggs. Two of the cards contain a picture of a chipmunk in its burrow. These were included despite the fact that they do not correspond to the Rorschach criteria. For some observers this type of percept symbolizes "return to the womb."

Each of the plates is similar in the things depicted (e.g. people, trees, animals, landscapes, houses, highways, and mountains). The rebirth picture and each of the other pictures were presented with equal frequency. In other words, no individual picture attained any prominence by being shown more often. Hence, there was not much chance of a given picture, say a rebirth picture, becoming fixated by the subject in the course of the test, and by this process, being reported first or last.

The use of this test assumes that individuals possess different thresholds for the different things depicted and that these different thresholds will affect the order in which the item is perceived. If the catatonic has a strong hypothesis based on the rebirth concept, then such pictures should have thresholds for the catatonic which are



different from the thresholds for noncatatonics. This, then, represented a somewhat different way in which the rebirth fantasy was assessed in the groups.

### Treatment of the Data

The first part of this section deals with the group characteristics of age, education, and the number of Rorschach responses (R). Following this there are three parts which deal respectively with the Rorschach, MCRT, and PST, the three ways in which the rebirth hypothesis has been tested.

Group characteristics. It was essential to assess certain characteristics of the groups to determine whether any possible differences in them might have affected the presence or absence of the rebirth fantasy. For the variables of age and R the statistical technique was a nonparametric one, the Mann Whitney U test (Siegel, 1956). This choice was dictated by the absence of normal distributions on these variables.

In Table 2, group means are presented for clarity; they were not involved in the computation of z scores. The hypothesis tested is that the groups have the same distribution, and the alternative hypothesis is that one variable is stochastically larger than the other. Groups H and N are not significantly different from Group C (p = .23 and .20 respectively). The mean age for Group H exceeds the mean age for Group N by 3.5 years, and the p of .07 might not be dismissed so readily. However, the primary concern is the equation of control subjects with the catatonics, not the equation of the control groups with one another. It would seem, therefore, that there is little likelihood that differences in age could be an important variable in the results of this study.

Table 2

## Analysis of Group Characteristics of Age

Group	Mean	Groups compared	Z	P
C	31.2	C vs. H	.75	.23
H	33.05	C vs. N	.81	.20
N	29.55	H vs. N	1.44	.07

Most pertinent to the first test of the rebirth hypothesis is the variable  $\bar{R}$ , in that the critical content is, excluding other factors, more likely to appear in a Rorschach protocol that has more responses. As shown in Table 3, the group comparisons yield significant differences in each instance. On the variable of  $\bar{R}$ , Group N is stochastically larger than both Group H and Group C, and Group H, despite a mean difference of only 0.8, is stochastically larger than Group C. In terms of mean differences, Group N exceeded the catatonics by 4.3 responses. That the normals exceeded the catatonics in response productivity was not unex-

Table 3

Analysis of Group Differences in Number of Rorschach Responses ( $\bar{R}$ )

Group	Mean	Range	Groups compared	Z	P
C	17.2	8 - 52	C vs. H	2.36	.009
H	18.0	14 - 24	C vs. N	2.99	.001
N	21.5	13 - 40	H vs. N	1.76	.04

pected. Twenty responses are generally regarded to be average for the normal population, and catatonia is well known for its symptoms of blocking and resistance. Group C has the widest range, Group H the smallest, and Group N is intermediate.

Since there are significant differences in Rorschach productivity, it may be expected that this would reflect itself in some way in the rebirth content analysis. However, the differences in productivity are in a direction which should work against confirmation of the hypothesis that catatonics show more rebirth symbolism on the Rorschach test rather than for it.

For possible differences in years of education, the groups were compared by use of Fisher's  $t$ -test (McNemar, 1949). Distributions were fairly normal and  $F$  tests showed the variances to be homogeneous. Thus, use of the  $t$ -test was tenable. Of the three groups (as Table 4 shows) the normals represent the most "educated" group but the means are not significantly different.

Table 4  
Analysis of Group Characteristics of  
Education (in Years)

Group	Mean	Groups compared	df	$t$	$p$
C	10.7	C vs. H	58	1.52	n.s. <sup>a</sup>
H	9.7	C vs. N	58	.49	n.s.
N	11.05	H vs. N	38	1.62	n.s.

a Not significant; the probabilities exceed the 10 per cent level in each comparison.

Hence, it is reasonable to exclude education, along with age, as contributing to differences in the rebirth symbolism results.

The Rorschach test. Of the total N of 80 subjects, only 23 produced rebirth content. In each group the majority of subjects do not show any rebirth content, and the group comparisons were based on the number of subjects who show presence and absence respectively of rebirth responses on their Rorschachs.

For these comparisons chi square analyses were employed. In Table 5, it is noted that significant differences are present when all groups are compared ( $p = .02$ ). Significantly more of the catatonics show rebirth content than do Group H subjects ( $p = .01$ ). Comparison of normals and catatonics yields a difference which is somewhat equivocal. For significance at the five per cent level a chi square of 3.84 is required with one degree of freedom. The resulting chi square of 3.59 yields a probability of .058 which is rather close to the conventionally accepted five per cent level.

Table 5

Group Comparisons for the Presence of Rorschach Rebirth Content

Group	Number present	Number absent	Groups <sup>a</sup> compared	df	Chi square	p
C	18	22	C vs. H vs. N	2	9.19	.02
H	1	19	C vs. H	1	7.39	.01
N	4	16	C vs. N	1	3.59	.06

a Comparison of H and N is considered later.

The fact that Group N produced longer Rorschach protocols than Group C would tend to cast some question upon the nonsignificance of this comparison. In relation to Rorschach productivity, the relative shortness of the catatonics' protocols would seem to accentuate their degree of rebirth preoccupation. On the basis of relative productivity between the groups, the catatonics' rebirth responses would be weighted somewhat more heavily than those of Group N. Suffice it to say, the results are suspiciously close to being significant, and this in itself bears further scrutiny.

In Table 21 of the Appendix it is noted that, of the four Group N subjects who show rebirth content, none gave more than one such response. Of the 18 Group C subjects, eight showed rebirth content in two or more different responses. Group C and N can be compared, therefore, using as the criterion for presence of rebirth content, two or more responses, as shown in Table 6.

Table 6

Comparison of Groups C and N for the Presence of Rorschach  
Rebirth Content when the Criterion is Two Responses

Category	Group		p
	C	N	
Present	8	0	.026
Absent	32	20	

The use of chi square would be somewhat irregular here since one of the expected cell frequencies is only 2.67. The chi square computation

yielded a probability of .05 but Fisher's exact probability, a more powerful test, equals .026 which provides greater confidence in rejecting the null hypothesis. These data indicate that with a more stringent criterion, the catatonics exceed the normals significantly in the number of subjects who show rebirth preoccupation. Parenthetically, an even smaller minority (27.5 per cent) show rebirth content. Implied also is the likelihood that the catatonics show greater intensity of preoccupation than the controls. Here the assumption is that several responses of the same type denote a greater degree of preoccupation in a given area than a single response would. This is consistent with various approaches to content interpretation (Brown, 1953; Lindner, 1950; Schafer, 1954).

To say that Group C and N do not differ in the number from each group who show rebirth preoccupation (Table 5) seems too conservative. The probability is close to .05, and if these groups were essentially not different in this respect, then nonsignificant results would probably have resulted for the more stringent criterion. The inclination therefore is to discount the small fraction above the accepted level of significance and to conclude that this part of the rebirth hypothesis is supported: that the catatonics as a group show more evidence of rebirth preoccupation than do the controls.

The comparison of the control groups with one another could not be included in Table 5 because here, too, use of chi square would not be appropriate. In Table 7, where the comparison is based on Fisher's exact test of probability, it is seen that the groups do not differ sufficiently ( $p = .147$ ) to warrant a conclusion that they are truly different. In addition, the MCRT results (see below) argue against the probability of

Table 7

Comparison of Groups H and N for Presence  
of Rorschach Rebirth Content

Group	Present	Absent	p
H	1	19	.147
N	4	16	

a real difference in favor of Group N.

Multiple Choice Rorschach Test. The distribution of scores on the MCRT is such that, instead of two categories (present and absent), the subjects varied in the number of rebirth choices from zero (in the case of one N subject) to six (two C subjects and one H subject). The score is the number of rebirth choices. Table 8 shows the number of subjects from each group in each score category along with mean scores for each group.

In Group C, the bulk of the subjects made scores of three and four; for Group H most of the subjects made scores of two or three; and 17 of the 20 normals made scores of zero, one, or two. The statistical comparisons were made by both chi square analysis and Fisher's t-test.

Considering first the chi square tests in Table 9, different groupings of cells permit a different number of tests. On one hand, comparisons can be made between all three groups simultaneously or between each pair of groups. On the other hand, the scores may be grouped in various ways. Because of the small frequencies involved it does not seem reasonable to use anything other than the following grouping of scores:

- a) scores of four or more vs.  
scores of three vs.  
scores of two or less
- b) scores of four or more vs.  
scores of three or less
- c) scores of three or more vs.  
scores of two or less

Table 8

Number of Subjects in Each Score Category on the MCRT

Score	Group		
	C	H	N
6	2	1	0
5	4	1	0
4	10	3	1
3	15	6	2
2	7	6	12
1	2	3	4
0	0	0	1
Group Mean	3.32	2.8	1.9

In Table 9 there are 11 chi square comparisons. The groups are compared three times each, but in the case of the comparisons between Groups H and N there are, owing to low cell frequencies, only two chi square tests.

These results indicate that, when all groups are compared, highly significant differences are present ( $p = .02$  to  $.001$ ). In the C and H



Table 9

## Group Differences on the MCRT

Groups compared	Grouping of scores	df	Chi square	p
C vs. H vs. N	a	4	21.92	.001
	b	2	7.97	.02
	c	2	22.21	.001
C vs. H	a	2	3.57	.20
	b	1	1.32	.30
	c	1	3.21	.10
C vs. N	a	2	21.38	.001
	b	1	10.48	.01
	c	1	21.2	.001
H vs. N	a	--	--	--
	b	1	3.14	.10
	c	1	12.5	.001

comparisons, Group C subjects consistently show higher rebirth choices but the probabilities do not reflect unequivocal group differences ( $p = .20, .30, \text{ and } .10$ ). Group N is exceeded by Group C and Group H with levels of probability which are fairly convincing. The Group C and N tests show probabilities of .01 and .001. The Group H and Group N tests show probabilities of .10 and .001.

A second set of group comparisons (by means of Fisher's  $t$ -test of

mean differences) yields results which, in a way, parallel those of the chi square analyses. These results are presented in Table 10. Groups C and H are different in MCRT means (Group C mean is greater by 0.52), but this difference again may be due to chance ( $p = .10$ ). Group C exceeds Group N at a significant level of probability ( $p = .001$ ), and Group H exceeds Group N ( $p = .05$ ), thus bearing out the corresponding findings in Table 9.

Table 10  
Group Differences in MCRT Means

Groups compared	<u>t</u>	<u>df</u>	<u>p</u>
C vs. H	1.82	58	.10
C vs. N	5.5	58	.001
H vs. N	2.27	38	.05

Although statistically significant results do not appear in every comparison, a fairly consistent trend is evident. An overview of the MCRT results indicates that the catatonics tend to exceed the hospital controls in showing greater attraction to rebirth content, but not to a significant degree. Comparing the catatonics with the normal controls, the results are more decisive in this respect. In essence, then, this second level at which the rebirth hypothesis is tested is supported. The direction of the results is similar to that of the first level. In addition the hospital controls exceed the normals on the MCRT, and, al-

though this finding has no direct pertinence to the hypothesis, it has implications for the results as a whole and will be taken up later.

A final point in this section concerns the presence of rebirth content on the Rorschach and its possible relation to MCRT rebirth scores. For this purpose Group C was divided into two subgroups. One consisted of those who showed rebirth content on the Rorschach (18 subjects designated "Group Present"). The other consisted of those who showed no rebirth content on the Rorschach (22 subjects designated "Group Absent"). These two groups were each then divided into two subgroups: those who gave three or fewer rebirth responses on the MCRT and those who gave four or more such responses. Control subjects were not included. Table 11 shows that relatively more of those who showed rebirth content on the Rorschach scored high on the MCRT, but the difference was not significant ( $p = .20$ ).

An additional test of these results was made by applying Fisher's  $t$ -test to the MCRT mean of the two groups. Table 12 corroborates the

Table 11

Comparison of Catatonic Subgroups for Relation  
of Rorschach and MCRT Results

Rebirth group	MCRT Score		df	Chi square	p
	3 <sup>a</sup>	4 <sup>b</sup>			
Present	9	9	1	2.04	.20
Absent	15	7			

a Signifies the number of subjects with scores of 3 or less.

b Signifies the number of subjects with scores of 4 or more.

Table 12

Comparison of Catatonic Subgroups for MCRT Means

Rebirth group	MCRT mean	df	t	p
Present	3.50	38	.98	n.s.
Absent	3.18			

likelihood that the subgroups are not different in respect to the MCRT scores although the Present Group has a higher mean.

The Picture Series Test. Recalling the problem in terms of the PST, the point was developed that if the rebirth picture arouses a particularly strong hypothesis-set for the catatonics, then the order in which they report the rebirth picture should be different from the order in which the controls report it. Judging from the results on the Rorschach and MCRT, the catatonics might be expected to report the rebirth picture in earlier serial positions than the controls. The relative ease with which the catatonics gave such symbolism on the other tests may be presumed to indicate a lower threshold for perceiving and reporting such pictures on the PST. On the other hand, a lowered threshold could conceivably produce an opposite effect by virtue of some form of emotional blocking. If this occurred, then the catatonics might delay their reporting of the rebirth pictures.

Table 13 presents group comparisons for the number of subjects who report the rebirth picture in the first three and last three positions. The number of subjects is categorized in terms of three frequencies:

Table 13

Number of Subjects in each Position on the PST  
and Chi Square Group Comparisons

(df = 4)

Position	Group									Chi square	p
	C			H			N				
	Frequency <sup>a</sup>			Frequency			Frequency				
	0	1	2	0	1	2	0	1	2		
1	20	13	7	9	4	7	9	5	6	2.10	n.s.
2	16	14	10	5	9	6	9	5	6	2.97	n.s.
3	6	15	19	7	5	8	5	9	6	4.58	n.s.
8	13	17	10	7	9	4	7	5	8	2.88	n.s.
9	17	15	8	10	8	2	13	4	3	3.57	n.s.
10	14	21	5	8	7	5	10	3	7	3.42	n.s.

a Frequency of two implies two or more.

zero, once, and twice or more. For example, 20 Group C subjects reported the rebirth picture in the first position on none of the cards, 13 Group C subjects reported it first on one card, and 7 Group C subjects reported the rebirth picture in the first position on at least two cards. These frequencies were compared with Group H and Group N frequencies to determine if there are differences between groups in the number of subjects who report the rebirth picture in the various positions.

In the chi square tests the three groups are compared simultaneously at three frequencies by means of a three by three table. Table 13 reveals that there are no differences of statistical significance for any of the positions.

It is probable that the position in which the rebirth picture (or any given picture) is reported is partly determined by its spatial location on the card. On Card IX for example, the rebirth picture is located in the lower right hand corner. Of the total of 80 subjects 52 reported it in the ninth and tenth positions. Hence, despite the instructions which aimed at getting the subjects to "skip around" on each card, they seemed to resort largely to the habitual visual movements of reading from left to right and from the top to the bottom. However, this orderliness was not rigidly adhered to by every subject on each card. Note that in our example for Card IX there were 28 subjects who displaced the rebirth picture forward from the prevalent position. These displacement trends constitute the next series of questions about the PST results.

An alternate approach to the PST has been devised by Teska (1959) in a problem which involves children's attitudes toward money. Teska found the displacement method to be sensitive to the presence of group variation regardless of the influence of spatial location as a determinant of position. The idea of displacement refers to the differences in a subject's response pattern (as regards the varying positions of the critical picture) from a response pattern that would be expected on a chance basis. If the rebirth picture is a "neutral" concept for all subjects, or if it arouses hypotheses-sets of equal strength for them, then its displacement extent and direction should differ from group to group only on a chance basis. There would not be significant differences in the number of subjects from each group who displaced forward or backward.

The baselines from which the displacements are measured are the

positions which represent medians for Group N. In Teska's study (1959) the baselines are the control group's most frequently chosen positions (i.e. the modes). The use of the mode for the present groups would have made it necessary to use only eight cards, since on two of the cards there is no mode for Group N. Thus 20 per cent of the PST data would have been wasted. Furthermore, the mode does not consistently represent a central tendency for Group N on many of the cards.

Each subject's rebirth position was listed for each card along with the extent and direction of displacement from the Group N medians. Table 14 presents a summary of these data for the three groups.

Table 14  
Number of Subjects with Displacements from Group N  
Median on PST

Frequency of displacement	Total displacement			Forward displacement			Backward displacement		
	C	H	N	C	H	N	C	H	N
0							1		2
1				1		1	6	3	3
2	1			10	7	5	10	6	3
3				6	2	4	9	5	6
4	3	1	2	10	4	2	11	4	4
5	5	4	1	10	1	4	3	2	1
6	12	5	7	3	5	2			1
7	7	4	5		1	1			
8	9	3	3			1			
9	3	2	2						
10		1							

Inspection of this table reflects fairly similar frequency distribution for the groups. This is also reflected in Table 15 where the chi square values are less than one. Thus, Tables 14 and 15 indicate the Groups to be a lot more similar than different in respect to displacement frequency.

The frequency limits in Table 15 were determined by a process of avoiding cell frequencies which would be too low for a tenable application of the chi square tests.

Table 15  
Chi square Tests of Group Differences in  
PST Displacement Frequency

(df = 1)

Displacement type	Frequency limits	Groups compared	Chi square	p
Total	6 and less	C vs. H	.04	n.s.
	vs. 7 and more	C vs. N	.04	n.s.
		H vs. N	.00	n.s.
Forward	3 and less	C vs. H	.03	n.s.
	vs. 4 and more	C vs. N	.30	n.s.
		H vs. N	.10	n.s.
Backward	3 and less	C vs. H	.04	n.s.
	vs. 4 and more	C vs. N	.04	n.s.
		H vs. N	.00	n.s.



Before attempting to interpret these findings, it might be advantageous to explore another basis of comparing displacements. It is possible that displacements based on frequency, and where the criterion is a single position, may not be quite decisive. For example, the criterion for displacements can be defined as a displacement of at least three or four positions. Table 16 presents the frequencies under these conditions.

Table 16

Number of Subjects with PST Displacements Under Stringent Criteria

Frequency	Group	Criterion of Displacement			
		Forward		Backward	
		3	4	3	4
Once	C	39	19	23	11
	H	17	10	13	7
	N	19	10	16	5
Twice	C	19	10	11	3
	H	7	5	4	1
	N	11	5	6	2

The frequency factor "once" refers to one or more displacements of three or of four positions. The factor "twice" signifies that the subject has displaced three or four positions at least two times. To illustrate, 39 Group C subjects displaced the rebirth pictured three positions forward, 19 displaced it four positions forward, 23 displaced it three backward, and 11 displaced it four backward. In Group N, 19

displaced three forward once, and 11 displaced three forward twice.

It was felt that these additional criteria would add refinement to the displacement comparisons. However, as shown in Table 17, only two of the comparisons reach the ten per cent level of significance. At this level of confidence, Group H exceeds Group C in the number of subjects who displace "three forward once," and Group N exceeds Group C for the criterion "three backward once." However, since the bulk of the comparisons fail to show significant differences between the groups, it is more likely that these near-significant probabilities represent chance

Table 17  
Group Comparisons of PST Displacements  
Under Stringent Criteria

(df = 1)

Criterion	Groups compared					
	C vs. H		C vs. N		H vs. N	
	Chi square	p	Chi square	p	Chi square	p
3 forward once		.10 <sup>a</sup>		n.s. <sup>a</sup>		n.s. <sup>a</sup>
3 backward once	.31	n.s.	2.96	.10	1.07	n.s.
4 forward once	.03	n.s.	.03	n.s.	.00	n.s.
4 backward once	.36	n.s.	.13	n.s.	.48	n.s.
3 forward twice	.54	n.s.	.30	n.s.	1.61	.30
3 backward twice	.40	n.s.	.18	n.s.	.33	n.s.
4 forward twice	.00	n.s.	.00	n.s.	.00	n.s.
4 backward twice		n.s. <sup>a</sup>		n.s. <sup>a</sup>		n.s. <sup>a</sup>

<sup>a</sup> Because of low cell frequencies, *p* is derived from Fisher's exact test of probability rather than from chi square.

fluctuations.

In substance, there is no support of the hypothesis in the perceptual area represented by the PST.

Logically, we would expect the results on this test to be more or less consistent with the results of the Rorschach test and the MCRT. Several factors related to the PST seem to emerge as possible explanations for the absence of significant group differences on this technique.

Teska (1959) found significant group differences in a PST problem involving children's attitudes toward money. His use of the PST differs from the present one in that he used only five pictures per card and his subjects were grade school children. It is conceivable, although there is no available evidence, that the adult subjects were so preoccupied with the task of reporting each one of the 10 pictures that the potential influence of any hypothesis-set for rebirth was vitiated. Perhaps the use of fewer pictures on each card might have avoided this.

It is also possible that children, less rigidly habituated to stereotyped patterns of procedure than adults, may take to the PST instructions more freely and spontaneously. That is, it may be that children can more easily conform to the instructions of reporting first what truly catches their eye first. In the case of adults, particularly psychotic adults, the requirements of the task may be so absorbing, or reading habits may be so strong that they are rendered incapable of a spontaneous randomization in reporting the pictures. The adults in this study appeared not to skip around. Instead, they reported first the picture at the top of the left hand column and moved from left to right in the rows or from top to bottom in the columns. Inspection of the PST proto-

cols suggests that this stereotypy was the rule for many, if not most, subjects in all the groups.

Again, these observations are not well substantiated conclusions. They are impressions which are proposed as possible explanations for the absence of significant results on the PST.

Further discussion of these results is postponed until after the presentation of the second experiment. The discussion in Chapter IV considers the findings in both experiments and their implications.

## CHAPTER III

### EXPERIMENT TWO

#### Problem and Hypothesis

Consider such a variable as regression, personality disorganization, or disintegration on a continuum for the general population. On such a continuum the schizophrenic population would be clustered at the "disturbed" end. This cluster would include members of the present Group C. But within any population of schizophrenics there is a fair amount of inter-individual variation. For example, there are schizophrenics who perform efficiently in such things as clerical work, arts, crafts, and the like. Also, there are schizophrenics who have to be spoon fed, dressed, and bathed.

One may postulate two classes of schizophrenics: those who attempt restitution and those who do not. Clinically, it is recognized that in the latter type malignant processes are indicated, while the restitution attempt itself tends to be a favorable prognostic sign. In other words, it always portends an unfavorable outcome when the schizophrenic, so to speak, lets himself slide into a regressive pattern. On the other hand, the delusions, hallucinations, and autistic fantasies often denote an active attempt to recover or, at least, to forestall further regression and withdrawal.

Experiment II is largely based on the concept of restitution. It has already been assumed that the rebirth fantasy represents a restitutive device. Recognizing that it need not be the sole restitutive means of the catatonic, are there nevertheless differences in personality factors between those catatonics who do and those who do not show evidence of rebirth preoccupation in accordance with the Rorschach criteria?

This question was initially developed in the preliminary study (Krimsky, 1957) in which clinical impressions suggested that the 7 catatonic subjects who showed rebirth content seemed to be less deteriorated and in better contact than the remaining 13. An attempt to verify this impression was made by comparing the subgroups on the Rorschach Prognostic Rating Scale (Klopfer et al., 1954). The results showed significantly higher scores for the "rebirth" subjects. However, this procedure also pointed out some shortcomings in the application of the scale to psychotic groups. The clinical impression of subgroup differences, if substantiated for the present 40 catatonic subjects, could add support to the assumptions involving rebirth and restitution and place them into a consistent framework.

The quantified Rorschach data (i.e. scores derived from the protocols) were used to compare the subgroups for "retention of better personality integration." This necessitated the assumption that the Rorschach is a valid instrument for such a purpose. Actually, most Rorschach validity studies are concerned with single or isolated factor meanings which can be related to the present problem in a remote way at best. But there are some studies which use all or most of the Rorschach data as integrated wholes. Three examples are cited here as support for the pres-

ent assumption of Rorschach validity.

Munroe (1945) collected group Rorschach protocols on 348 first year college women. She devised a check list for rapid evaluations. The integrative sketches were made by "blind" analyses. That is, no information was available other than age and sex. Reliability of the "Inspection Technique" was tested by having the data analyzed independently by 11 raters. Agreement among these raters was statistically significant. The validity of the Rorschach was evaluated against three external criteria. Teachers who were thoroughly familiar with the subjects examined the statements in the interpretive sketches and concurred that the vast majority (i.e. significant proportion) were accurate. The check lists also yielded better than chance accuracy as a predictor of both academic standing and adjustment.

The method of "blind" analysis was also applied by Schactel (1951) in a problem of assessing delinquency from the Rorschach. He was given protocols of 1000 juvenile males, of whom 500 were delinquent. The two groups were equated for age, intelligence, and ethnic origin, and all subjects had resided in poor sections of a large city. Schactel listed 53 traits and judged each protocol according to the presence, absence, or indeterminate status of each trait. From these data he was able to identify 91 per cent of the delinquents correctly and 89 per cent of the nondelinquents as nondelinquents.

In a Rorschach and clinical approach to schizophrenia Beck and his associates (1954) established six distinct subtypes. They first listed descriptive statements relevant to four categories: defense, ego functioning, emotionality, and restitution. Parenthetically, concern with

birth or rebirth was listed under restitution. The descriptive statements were then translated into Rorschach test concepts. The Q technique was applied to sort the data obtained from the clinical and Rorschach records of a group of schizophrenic adults and children. Factor analyses of these sorted data delineated six patterns of schizophrenia, including two which were peculiar to children and one which was common to both children and adults. "The [Rorschach] findings served, therefore, both for recognizing the disease, and for classifying a person into one of the patterns with the implicit significance as to the kind of schizophrenia to expect" (Beck, 1954, p. 82).

The subjects who show presence of Rorschach rebirth content are assumed to be the restitution attempting group. The expression "better personality integration" is defined in reference to plausibility of thinking, emotional control, and inner resources for resolving problems and reducing tension. The hypothesis is: Are there differences in the retention of personality integrating factors between the group of catatonics who show rebirth preoccupation and those catatonics who do not?

### Subjects and Procedures

The subjects for this experiment are the catatonics of Group C. They were divided into subgroups Present (18 subjects) and Absent (22 subjects). Placement in these subgroups is based on the presence or absence of Rorschach rebirth content. In Experiment I the Rorschach protocols were scored immediately following the completion of each subject's testing, and the data used here were derived from these scores. The method of scoring conforms mainly to the Klopfer system (1954) but with some deviations. Included are the Dd location score for all details



not scoreable as wholes (W) or usual details (D). In addition, form responses are scored as plus or minus in conformity with Beck's (1944) standards. Form responses were also scored without notation of accuracy or inaccuracy when there was some doubt as to this quality or when the particular response was not included in Beck's lists.

For each subject, tabulations were made of the number of responses in the following response categories:

- R, total response number.
- W, whole responses or responses including three-fourths of the blot area.
- D, usual details.
- Dd, unusual details.
- M, responses in which humans or human-like figures are perceived in some movement or activity or animals engaged in human-like activity.
- FM, animals perceived in activity.
- Fm, inanimate objects perceived in movement (e.g. cans floating, wind blowing)
- F+, form responses in which the form of the percept conforms to the blot outlines.
- F-, form responses in which the form is arbitrary, of poor quality, or does not reasonably fit the blot outlines.
- F, form response in which the form quality is in doubt.
- Sh, responses which use textural aspects of the blot or achromatic color.
- FC, responses in which form and color are combined with form predominant.
- CE, responses in which form and color are combined with color having the dominant influence.
- C, color responses in which formal elements are ignored or are absent.
- Sum C, one-half the sum of FC + 2CE + 3C.
- A, responses of animal, animal detail, and animal object content.
- P, popular responses according to Beck's list of populars.
- Rej, number of cards rejected.

Responses of vista, perspective, and diffuse shading occurred too infrequently to enter into the group comparisons. In the cases of inanimate movement and texture, both of which were relatively infrequent, the form dominant (Fm, FC) responses are combined with the form secondary (mF, cF) responses. For three subjects of Group Absent, scoring was not

complete due to the inability to obtain adequate inquiries. In each instance the subject was either too flighty or inattentive for this part of the test. Nevertheless, content was scored for these three, and it was possible to score for populars and total responses along with a few isolated responses.

#### Treatment of the Data

Except for the categories of total responses (R), rejections (Rej), and F+ per cent, the Rorschach variables are compared by per cent of R rather than by raw scores. This is necessitated by a sizeable difference in group means of R, which loads all comparisons in favor of Group Present. The mean Rs for Groups Present and Absent are 22.1 and 13.2, respectively. These data are shown in Table 18.

Had the groups been equivalent in respect to R, it would not have been necessary to convert raw scores to per cents. While this conversion helps to provide a workable basis of comparisons, it makes implicit an assumption which has certain weaknesses. That is, in converting from raw scores, the variables retain equivalent value in per cents. For example, the assumption would hold that five CF responses in a 50 response protocol would be equivalent to one CF in a 10 response protocol. Actually, the significance of CF in such protocols would be quite different. Hence, the results are interpreted below with some restrictions in mind.

In Table 18 the comparisons are made by using the ranking technique of the Mann Whitney U Test. The rankings are based on percentages, but in the case of R raw scores are used. The group comparison for Rej, as shown in Table 19, indicates that the Groups are not significantly different on this variable.

Table 18

Raw Score Means, Per Cent Means, and Analysis of  
Group Differences on Rorschach Variables

Variable	Raw Score		Per Cent		<u>z</u>	<u>p</u>
	Present	Absent	Present	Absent		
<u>R</u>	22.1	13.2	--	--	3.43	.001
<u>W</u>	6.4	5.7	32.3	46.6	2.34	.009
<u>D</u>	13.1	6.8	57.1	48.5	1.4	.08
<u>Dd</u>	2.5	0.6	9.0	5.3	2.32	.01
<u>M</u>	1.6	1.1	7.0	8.4	.08	.47
<u>FM</u>	1.0	0.89	4.83	6.32	.56	.29
<u>Fm</u>	0.61	0.32	2.56	2.17	.33	.37
<u>F+</u>	8.9	4.3	71.8 <sup>a</sup>	53.6 <sup>a</sup>	1.66	.048
<u>F-</u>	3.3	2.43	20.3 <sup>b</sup>	19.2 <sup>b</sup>	.38	.35
<u>F</u>	15.1	8.4	69.2	64.5	.61	.21
<u>Sh</u>	1.22	0.68	5.48	5.74	.27	.43
<u>FC</u>	1.17	0.47	5.46	3.75	.88	.15
<u>CF</u>	1.67	0.85	6.25	6.91	.29	.38
<u>C</u>	0.5	1.0	2.4	7.56	1.24	.09
<u>Sum C</u>	2.83	2.58	12.2	19.2	.84	.20
<u>A</u>	10.4	6.3	48.3	47.7	.16	.43
<u>P</u>	4.1	2.5	19.4	19.5	.07	.47

a F+ per cent is derived from the ratio of F+ responses to the sum of F+ and F- responses.

b F- per cent is derived from the ratio of F- responses to R.

Table 19

Group Comparison for Number of Subjects Showing  
Rejections and Chi Square Analysis

	Group		<u>df</u>	Chi square	<u>p</u>
	Present	Absent			
<u>Rej</u>	6	6	1	0.17	n.s.
No <u>Rej</u>	12	16			

Significant differences are found for R, W, Dd, and F+ per cent. Near significant differences are suggested in D and C. In characterizing the groups it is advantageous to evaluate the distribution of scores within each group even where significant differences between the groups are not present.

The superiority of Group Present in R indicates that these subjects are more productive (in a general sense) and capable of greater energy output and effort. The mean R of 22.1 conforms fairly well to the productivity of normal groups, while the Group Absent mean of 13.2 is quite suppressed, possibly an outcome of typical catatonic resistiveness and blocking. Response total coupled with a superior F+ per cent adds support to the hypothesis that Group Present is the better preserved group. Form accuracy is an index of ego strength according to Beck (1944). Others regard it more conservatively as an expression of judgment and ability to appraise reality in an impersonal way and in affectively neutral situations.

The F per cent is somewhat greater in Group Present and, at a mean

of 69.2, is suggestive of rigidity and repressive trends. The greater use of D with W de-emphasized also stamps Group Present as being cautious, "practical-minded," more attached to matters of common, everyday type. The moderately strong Dd tendency adds to the picture of constriction with, perhaps, an emphasis on matters of minor importance. A possibility of obsessive trends exists in this group.

Group Absent, on the other hand, is strongly inclined to give C (pure color) responses. This is most prevalent in psychoses and is usually indicative of intellectual deterioration, extreme loss of control, and apathy. In the distribution of color responses, both groups favor CF over FC. But in Group Absent C is greater than CF or FC, while for Group Present C is given less often than either of the others. The C emphasis in Group Absent signifies that this group has succumbed more decisively to the deteriorative effects of schizophrenia, and this is another important difference in the groups. It is consistent that, from the standpoint of emotional control, Group Present exceeds Group Absent in the use of FC, although not to a significant extent ( $p = .15$ ). FC implies the retention of socially adaptive handling of affective expression. In the context of the findings to this point, the higher W approach of Group Absent can be taken to mean a tendency for vague and global types of perception. Although W also implies organizational activity, this talent would be ruled out in the Group Absent subjects because of the very low F+ per cent.

The scant use of shading, vista, and perspective in both groups restricts interpretations regarding the presence of anxiety. However, it may be inferred from the general picture of caution and compliance in

Group Present that these subjects have somewhat greater inclination toward anxiety.

Subjects in neither group can be characterized as having much vitality and enthusiasm, nor is there much evidence of varied and differentiated functioning. The energies of Group Absent seem to be largely channelled into willful and stubborn insistence on the expression of irrational feelings. The energies of Group Present subjects are largely geared towards reasonable behavior and compliance.

Group Present, the restitution-attempting group, shows better retention of integrative characteristics, and the hypothesis is therefore supported. But what is the extent of Group Present's superiority over Group Absent? Actually, the superiority pertains largely to surface features of behavior. In certain areas there does not seem to be much distinction between the groups. We do not find more evidence in Group Present of creativity (personal, not artistic or scientific) or of such things as empathy, stability or self concept, or internalized techniques of reducing the effects of tension and stress. In short, we do not find more movement percepts, especially human movement, and this is why the superiority is based mainly on the more external and outward forms of adjustment.

The higher  $F_{+}$  per cent in the Group Present subjects may represent a way of suppressing the disorganized aspects of their personalities by placing particular emphasis in their social relationships on the appropriate and reasonable. In other words, the  $F_{+}$  may indicate a defensive mask as well as an ability.

This is not to minimize the importance of the outward appearance of

personal adjustment. Most everyday relationships tend to be superficial and within the institutional setting the individual does function better in relation to the intactness and retention of these personality attributes.

In essence then, the hypothesis is appreciably supported although the superiority of Group Present over Group Absent is restricted.

## CHAPTER IV

### DISCUSSION

Within the limits of these experiments, it has been shown that the catatonic group has stronger hypotheses-sets for rebirth fantasies than the control groups. The catatonics selected more rebirth content on the Rorschach and on the MCRT. On the PST the groups were essentially not different in regard to the order in which the rebirth picture was reported or in regard to the extent or direction of its displacement from the median. The hypothesis-set did not seem to operate as a significant or consistent determinant in any manner on this technique. Possible reasons for this were suggested in Chapter II.

Some of the conclusions must be drawn in a tentative way because of certain limitations of the procedures and irregularities of the techniques. For one thing, in a study in which the independent variable (i.e. Rorschach rebirth content) is absent in the majority of subjects, it would be more desirable to compare groups of much larger size. The experimental group of 40 subjects is of modest size, and the control groups of 20 each fulfill their purpose in a minimal way. In spite of these limitations, one may feel reasonably secure that, in regard to the presence of Rorschach rebirth content, this sample is fairly representative and that similar groups of larger samples would show essentially



the same results. At least there is no known or even suggested reason why other similar groups might show different results.

The MCRT, as used here, is by no means an established technique. Rather, it is one which has been altered and adapted for the present purposes. In some cases the critical content presented some unanticipated problems. Many subjects did not know the meaning of chrysalis, and a few did not know the meaning of larva or embryo. The three groups seemed to be equally represented in this lack of information. During administration of the MCRT, when subjects asked what these things were, they were told. However, there is no way of knowing how many subjects avoided the selection of these choices because of their ignorance or how many chose these answers for the very reason that they were ignorant of the meaning.

Since three choices are presented for each card, the rebirth score on a chance basis would be 3.33. The Group C mean conforms fairly closely to this score (see Table 8). The fact that the mean of all subject's rebirth choices is considerably less than chance suggests either that the rebirth responses were less plausible than the other choices or they were avoided because they were too abstruse. In either case this could mean that the results for Group C were due to psychotic thinking as well as rebirth preoccupation. Conceivably, this could also imply that the MCRT had as much to do with reality testing ability as with rebirth ideation. On the other hand, there is no reason to suggest that Group C has more psychoticism than Group H, and the fact that there are significant Rorschach differences and near significant MCRT differences argues in favor of the rebirth hypothesis.

Another point to consider is the significant MCRT difference between Group H and Group N. The normals gave numerically, though not significantly, more rebirth responses on the Rorschach. On the MCRT this difference was reversed to a significant degree. Again, one implication is the possibility that the test does not measure what it was devised to measure. Although this problem cannot be completely resolved within the limits of the present research, it does seem logical that rebirth preoccupation would be somewhat more prevalent in a psychotic than a normal group. Moreover, it has not been implied at all that the rebirth fantasy is the exclusive property of catatonic schizophrenics. Perhaps non-catatonic psychotics are attracted to rebirth ideation as one of several possible restitutive devices. Clearly, restitution, per se, is a more urgent concern in psychotics than normals. Excluding the possibility of test invalidity, this seems to be the most cogent explanation of the MCRT differences between the normal and hospital controls.

#### Validity of the Rebirth Criteria

In Experiment One the most parsimonious approach to the Rorschach content data would hold that the catatonics exceed the controls in giving responses such as caterpillar, fetus, baby in the mother, unborn animal, and so forth. This in itself, is not very meaningful. It is only when we can rightfully assume that these responses signify concern with rebirth that the data become fruitful and significant. In other words, the conclusions to Experiment One are highly dependent on the assumption of the validity of the rebirth content criteria.

Does this list of responses encompass all the ways in which rebirth can be symbolized? Perhaps not. It is conceivable that within

the 80 Rorschach protocols the rebirth fantasy has been expressed in ways which have gone unrecognized and which are not apt to be recognized even with repeated examinations of these data. This refers to the idea that the individual may symbolize certain of his fantasies in idiosyncratic and unique forms, not shared by others. The Rorschach clinician, furthermore, is well aware that he does not know the precise symbolic meaning of every Rorschach response. Hence, the adequacy of these criteria is subject to an added and unavoidable limitation. However, if certain other Rorschach reactions were identifiable as symbols of rebirth, it is not very likely that the results as they now stand would be affected materially.

The Rorschach was selected because it was felt that it is the best practical technique for eliciting fantasies of this type. But the Rorschach itself imposes certain limitations in regard to content. Any criteria, for rebirth or any other fantasies, are limited in terms of the range of content one customarily gets on the Rorschach. There may be reactions which are more readily equatable with rebirth than the present criteria, but, if they rarely or never appear as Rorschach responses, they can have no application to research of this type. The present list of responses had to be selected with attention to the probability of their at least occasional appearance as Rorschach responses.

Further support for the validity of the rebirth criteria is suggested from the ways in which some of the catatonics spontaneously elaborated the rebirth symbolism on the Rorschach. The normal control group did not express this symbolism with the diversity, repetitiveness, and apparent involvement of some of the catatonics. When a catatonic (subject

C 30; see Table 21 in Appendix) gives responses such as, "It would be a caterpillar. . . . The larvae . . . cocoon stage is the word I'm needing. Larva stage is living, cocoon stage is dead. . . . Reminds me of something unborn. . . . animals . . . there are two of them exactly alike," what can she be expressing other than the rebirth fantasy?

Finally, it may be argued that content like larva, cocoon, and fetus express tendencies toward isolation and withdrawal and have nothing to do with rebirth wishes. If this were the case, then this type of content should have occurred with equal frequency in the hospital controls since they are roughly equal to the catatonics in degree of withdrawal and isolation. Hence, withdrawal itself cannot account for the appearance of these responses on the Rorschach. The position taken here is that, although the rebirth fantasy may be a general phenomenon, present in normals as well as disturbed individuals, it seems to be particularly prevalent in catatonics at levels of greater intensity.

#### Restitution and Rebirth

In Experiment Two, Group Present is assumed to be the restitution-attempting group on the basis of showing stronger hypotheses-sets for rebirth content on the Rorschach. The subsequent findings indicate that they are better integrated and less deteriorated than Group Absent subjects. The restitution concept has been used here to reconcile the presence of the rebirth fantasy with the retention of integrative personality factors. Therefore, the rebirth fantasy and the restitution process may be considered as mechanisms which serve as buffers against the deteriorative effects of schizophrenic regression. This is not to say that the presence of rebirth content on the Rorschach reflects the cause of retain-

ed integrative factors. Causal relations have not been shown in this experiment, but from the standpoint of consistency in theory and empirical results, this conclusion is suggested.

The catatonics deteriorate to a lesser degree, not because of the chance occurrence that they have fantasies of rebirth, but, more likely, because they are the individuals who, to begin with, possess greater potentialities to withstand the devastating effects of regression or to rebound from regression. The effort to rebuild toward personality reorganization is expressed in some part in the fantasy of rebirth in these individuals.

#### Further Research Areas

In this or any research dealing with catatonic schizophrenia, questions arise concerning the profoundness of regression in this disorder. Why, for example, does the catatonic regress more extensively than the paranoid or simple schizophrenic? And does the depth of regression have anything to do with the better recovery rate in catatonia than that of the other subtypes? An important question involves the factors which underlie the motor symptoms, postures, and stuporousness. Related problems also concern the question of uniformities in the pre-psychotic personalities of catatonics and whether or not there are differences from the comparable factors in paranoid and simple types. These questions may be considered as starting points for further research in the areas of catatonic schizophrenia. The method of approach for some of these questions would involve obtaining descriptions of the individual's childhood personality from friends and relatives and from the schizophrenic himself. Admittedly, this is a difficult procedure and one

fraught with sources of error.

The present research could be extended without much difficulty to determine whether, among the catatonics, the subjects in Group Present represent the reactive type and whether the Group Absent subjects represent process schizophrenics. In reactive schizophrenia the prognosis is always better. In these cases the schizophrenic regression tends to have an abrupt onset, often occasioned by a more or less definite experience or event in the individual's life. Process schizophrenia seems to have an insidious development which often begins in early adolescence and has a long standing introverted coloring. It is not generally related to external hardships or traumata. Bettelheim's (1956) concentration camp schizophrenia would be of the reactive type. The rationale would maintain that the catatonics who attempt restitution are individuals who have achieved some maturity in the course of their lives and whose breakdown may be attributable to external events, at least in part. On the other hand, the process schizophrenic, this hypothesis suggests, is an individual who does not attempt restitution because he has never achieved the maturity to which he may reorganize himself.

The method would involve careful examination of historical data with particular attention to the period just preceding the breakdown or the institutionalization. It would have to be determined if the individual's life was relatively schizophrenic from his youth or whether he had achieved a conventional level of normality and had regressed under some definite stress.

Regarding the depth of catatonic regression, a speculative hypothesis is offered. First, it is assumed that, in schizophrenic regress-

ion, there are elements of a literal reversion to the individual's childhood and infantile personality. These consist partly of a re-arousal of impulses, conflicts, and anxieties which were repressed in childhood. Psychoanalytic concepts of schizophrenic regression maintain that the regression produces a loosening of defenses so that unconscious material (i.e. repressed ideas and impulses) floods the conscious ego. The regression occurs because the individual cannot cope with and must find some relief from the unbearable conditions of his current life. But the regression may arouse older, repressed anxieties, hence the individual must regress further. The extent of the regression, this speculation suggests, would be determined or influenced by the intensities of conflicts and anxieties of childhood experiences. In other terms, if the individual had an anxiety-laden childhood and infancy, the regression would push him back to an earlier level of organization, one which is analagous to the intra-uterine life where anxieties are presumed to be minimized.

## CHAPTER V

### SUMMARY

The starting point of this research was the clinical psychiatric observation that catatonic schizophrenics frequently verbalize ideas of rebirth. The literature also notes the occurrence of the rebirth fantasy in noncatatonic disorders and in normals, but the more frequent associations are with catatonics. The problem involved the expression of the rebirth fantasy at levels other than verbalization, thus ignoring overt expression of this fantasy. It was assumed that, if this fantasy were important for the individual, then it would be expressed indirectly and symbolized on perceptual tests. The hypothesis posed the question of possible differences between a group of catatonics and two groups of noncatatonics in regard to rebirth preoccupation.

Forty institutionalized subjects, diagnosed as catatonic schizophrenic, made up the experimental group, designated Group C. Group H, 20 institutionalized subjects with diagnoses other than catatonia, along with a group of 20 normals (Group N), formed the two control groups. For the three groups, the age limits were 18 to 42. Each group contained equal numbers of males and females. Individuals of borderline or defective intelligence were omitted. Groups were equated for age and years of education.



Three techniques were used to test for the presence of rebirth ideation. These were the Rorschach, a multiple choice Rorschach test (adapted to the present purposes), and the recently devised Picture Series Test. All testing was administered individually in the sequence given above.

On the Rorschach, the content category was used for the criteria of rebirth ideation. These criteria were established as the following responses: larva, cocoon, caterpillar, baby in the mother, fetus, embryo, unborn animal, egg, seed, and tadpole. These responses were assumed to represent the rebirth fantasy in that they were regarded as possessing in common the attributes of a prebirth stage of biological development. The Rorschach was administered conventionally with the performance followed by the inquiry. On the MCRT, three responses per card were given, one of which was a rebirth response as defined by the above criteria. The subjects were shown the cards one at a time and asked to select which one of the three responses best fit the blot. The PST consisted of a series of 10 cards, each showing 10 small structured pictures which were irregularly arranged on the plate. One of the pictures on each card depicted an example of the Rorschach rebirth criteria (e.g. turtles hatching from eggs). The task was to describe the pictures in the order in which the subject happened to see them. The score for each card was the sequential position in which the rebirth picture was reported.

The Rorschach results showed that Group C exceeded the controls in the number of subjects who gave rebirth responses. The probabilities were beyond a level of chance expectancy. On the MCRT, Group C again exceeded the controls to a significant degree in the number of subjects who

made higher scores. Also, Group H had significantly higher scores than Group N. On the PST, the groups were not found to be significantly different in the positions of reporting the rebirth picture. A second series of comparisons was made in which the median positions of Group N were used as baselines. Displacements from these median positions showed no significant or consistent differences. This was also true when the displacement was defined as three or more positions.

In Experiment Two, the catatonics were divided into two subgroups, Present and Absent, on the basis of the presence or absence of rebirth content on the Rorschach. The hypothesis was that the rebirth fantasy was a means of restitution for the catatonics, and its presence should therefore imply an attempt to recover from the effects of the psychosis. The groups were compared on the Rorschach location and determinant scores, number of rejected cards, and on animal and popular responses. The results showed Group Present as having better surface controls, as being more realistic, somewhat more rigid, and less deteriorated. The hypothesis was therefore supported, and the assumptions relative to rebirth and restitution seemed to be upheld on the basis of the consistency of the findings.

It was concluded that catatonic schizophrenics are more strongly preoccupied with rebirth fantasies than noncatatonics and that proportionately more catatonics than noncatatonics tend to have this fantasy at a level which may be manifested on the Rorschach Test. Among the catatonics, those who show evidence of the rebirth fantasy on the Rorschach Test seem to possess better retention of nonpsychotic personality features than the catatonics who do not show rebirth symbolism on the Rorschach.

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## APPEND IX

Table 20

Personal Data and Total Rorschach Responses  
(R) on all Subjects

Subject	Sex	Age	Educ	<u>R</u>
C 1 <sup>a</sup>	M	30	9	23
C 2	M	29	13	14
C 3	M	19	10	13
C 4	M	26	8	14
C 5	M	21	12	18
C 6	M	33	10	24
C 7	M	37	8	11
C 8	M	18	12	52
C 9	M	30	10	10
C 10	M	37	10	10
C 11	M	31	3	14
C 12	M	32	10	12
C 13	M	34	9	16
C 14	M	25	15	37
C 15	M	32	9	13
C 16	M	32	10	11
C 17	M	32	12	17
C 18	M	36	12	14
C 19	M	35	12	16
C 20	M	26	12	8
C 21	F	33	9	12
C 22	F	33	11	26
C 23	F	32	12	14
C 24	F	35	8	14
C 25	F	30	10	18
C 26	F	30	10	18
C 27	F	39	13	11
C 28	F	31	10	22
C 29	F	31	12	15
C 30	F	39	16	14

<sup>a</sup> Subjects are designated C 1 through C 40 for the catatonics, H 41 through H 60 for the hospital controls, and N 61 through N 80 for the normal controls.

Table 20 (Continued)

Subject	Sex	Age	Educ	<u>R</u>
C 31	F	40	9	12
C 32	F	38	10	11
C 33	F	34	12	15
C 34	F	42	12	16
C 35	F	23	12	29
C 36	F	22	12	17
C 37	F	26	9	22
C 38	F	25	12	13
C 39	F	36	12	13
C 40	F	34	12	31
H 41	M	41	7	19
H 42	M	38	7	17
H 43	M	38	8	20
H 44	M	35	6	16
H 45	M	34	8	14
H 46	M	41	15	18
H 47	M	32	10	16
H 48	M	22	12	24
H 49	M	34	10	19
H 50	M	27	8	14
H 51	F	19	10	20
H 52	F	23	5	16
H 53	F	31	12	16
H 54	F	37	11	17
H 55	F	42	13	18
H 56	F	32	10	20
H 57	F	31	9	17
H 58	F	36	12	21
H 59	F	37	12	16
H 60	F	31	10	22
N 61	M	32	11	23
N 62	M	30	10	22
N 63	M	24	8	29
N 64	M	38	7	15
N 65	M	34	16	28
N 66	M	34	8	20
N 67	M	37	11	40
N 68	M	34	8	13
N 69	M	22	12	22
N 70	M	22	15	14



Table 20 (Continued)

Subject	Sex	Age	Educ	<u>R</u>
N 71	F	19	14	17
N 72	F	26	12	30
N 73	F	41	9	13
N 74	F	23	12	17
N 75	F	41	9	20
N 76	F	23	8	24
N 77	F	38	8	14
N 78	F	18	12	22
N 79	F	30	16	24
N 80	F	25	16	24

Table 21

## Tabulation of Rorschach Rebirth Responses

Subject	Response
C 1	Two babies being born. . . . they're so small, so close together.
C 4	Could be two caterpillars.
C 5	Twins inside the mother. . . . Looks like two human beings lying still.
C 6	Birth, death, resurrection, and rebirth forming out of mystical clime.
C 8	Red stained blood, some seeds. . . . Seeds represent a baby and blood represents blood in giving birth.
C 11	The insect here in the larva stage. Here's a caterpillar.
C 14	Caterpillar, something like that in a garden.
C 17	Kidney beans. . . . beans that have sprouted.
C 22	A tadpole just before it turns into a frog . . . got the legs sprouted. Head of a baby. . . . Incidentally, it looks like a baby before it's born.

Table 21 (Continued)

Subject	Response
C 24	Looks like a baby is in the mother . . . hunched over like that. These two remind me of a caterpillar.
C 27	Could be a caterpillar. . . . unfolding like a butterfly, becoming a butterfly. It may be a moth unfolding. . . . Did they leave something off? . . . becoming a moth.
C 28	Another butterfly. . . . Something that goes in there, ovaries, being born that way.
C 29	These remind me of flowers. . . . guess it could be a bud. Remind me of caterpillars, never seen a pink caterpillar, have you?
C 30	It would be a caterpillar. The larvae . . . cocoon stage is the word I'm needing. Larva stage is living, cocoon stage is dead. Reminds me of something unborn. . . . animals . . . they're are two of them exactly alike.
C 35	A young butterfly. . . . wings . . . and hatching the other part. A young caterpillar . . . becomes a butterfly. A piece of watermelon. . . . because I can see the seeds on it.
C 36	Looks like seeds here, beans.
C 37	Insect in the larva . . . worm stage.
C 40	Could be a caterpillar, front part. Looks like a fetus, both a human fetus. . . . some attachment here with the organ of the mother. . . . fairly developed.
H 58	A butterfly of half normal size when they come out of the cocoon . . . really interesting to watch it develop.
N 64	This looks like a couple of human heads . . . like babies before they were born.
N 65	That's a big old larva of some sort.
N 72	Heads of children or adults . . . looks more to me now like an unborn baby.
N 77	Caterpillar . . . has that fuzzy look, little legs they crawl on.

Table 22

Number of Rebirth Choices on the  
MCRT for Each Subject

Subject	MCRT	Subject	MCRT
C 1	2	H 41	1
C 2	2	H 42	1
C 3	2	H 43	3
C 4	3	H 44	2
C 5	2	H 45	6
C 6	3	H 46	2
C 7	3	H 47	5
C 8	4	H 48	1
C 9	3	H 49	2
C 10	3	H 50	3
C 11	4	H 51	3
C 12	3	H 52	4
C 13	3	H 53	2
C 14	4	H 54	3
C 15	4	H 55	2
C 16	3	H 56	2
C 17	1	H 57	4
C 18	5	H 58	3
C 19	3	H 59	2
C 20	1	H 60	3
C 21	4	N 61	2
C 22	3	N 62	2
C 23	3	N 63	1
C 24	2	N 64	3
C 25	4	N 65	2
C 26	4	N 66	0
C 27	5	N 67	2
C 28	3	N 68	2
C 29	3	N 69	2
C 30	6	N 70	1
C 31	5	N 71	4
C 32	2	N 72	2
C 33	2	N 73	2
C 34	3	N 74	2
C 35	4	N 75	2
C 36	4	N 76	1
C 37	6	N 77	3
C 38	5	N 78	2
C 39	3	N 79	2
C 40	4	N 80	1

Table 23

Order of Selection of Rebirth Picture for Each Card on PST

Subject	Card									
	I	II	III	IV	V	VI	VII	VIII	IX	X
C 1	4	1	5	4	4	6	4	2	10	7
C 2	5	9	5	4	3	6	3	3	10	7
C 3	7	3	4	2	2	4	5	3	10	8
C 4	3	10	9	3	2	7	3	3	9	7
C 5	9	7	5	6	4	2	6	8	5	7
C 6	4	2	8	8	4	5	2	3	10	6
C 7	9	6	7	4	4	6	4	3	9	6
C 8	5	6	4	10	2	9	4	3	9	3
C 9	9	10	8	4	3	6	4	3	10	7
C 10	8	6	9	4	5	1	1	4	8	1
C 11	5	2	4	6	2	3	3	3	9	7
C 12	6	2	8	3	1	6	10	2	7	6
C 13	9	2	5	6	7	8	7	2	10	7
C 14	3	8	5	4	4	8	4	3	10	7
C 15	9	8	7	6	2	5	3	2	9	8
C 16	8	2	9	4	1	6	7	5	9	6
C 17	5	5	5	10	4	8	4	3	9	6
C 18	9	10	5	4	3	7	4	4	10	7
C 19	7	1	3	6	3	7	4	2	9	7
C 20	5	3	10	8	2	10	10	7	6	6
C 21	9	8	5	4	4	8	4	3	10	7
C 22	5	3	5	4	1	6	2	3	10	7
C 23	2	1	6	7	7	3	7	8	2	4
C 24	10	9	6	3	8	4	4	1	3	5
C 25	10	8	5	4	4	8	4	3	10	7
C 26	3	6	1	9	3	6	10	6	9	10
C 27	9	8	5	4	4	8	4	3	10	7
C 28	9	7	4	5	2	9	5	1	10	1
C 29	7	4	5	2	8	2	6	7	1	3
C 30	9	3	3	3	4	6	4	2	10	7
C 31	2	10	1	5	2	7	4	3	6	7
C 32	1	6	6	6	7	8	7	7	3	3
C 33	2	8	2	7	4	4	4	3	10	7
C 34	3	1	6	7	7	1	5	3	10	8
C 35	7	4	1	7	1	5	2	4	10	9
C 36	3	3	4	8	7	1	7	8	1	4
C 37	7	1	1	3	3	1	6	6	7	1
C 38	6	7	8	4	2	6	4	3	10	7
C 39	6	5	1	8	3	6	4	1	9	6
C 40	8	9	5	4	4	7	3	3	9	8

Table 23 (Continued)

Subject	Card									
	I	II	III	IV	V	VI	VII	VIII	IX	X
H 41	9	10	4	4	2	7	4	3	8	6
H 42	5	6	6	7	3	8	3	3	10	6
H 43	7	7	5	4	2	6	6	3	9	6
H 44	5	8	4	4	4	6	4	2	9	7
H 45	9	3	2	7	2	1	7	3	9	7
H 46	8	2	5	3	2	1	1	3	10	5
H 47	8	10	5	5	4	8	4	3	10	7
H 48	7	3	5	4	2	3	10	5	5	2
H 49	8	5	9	8	8	6	8	8	7	4
H 50	10	8	5	4	4	6	4	2	10	7
H 51	6	2	4	2	1	4	1	8	4	1
H 52	2	4	3	4	10	1	3	4	6	7
H 53	7	10	6	4	4	8	3	2	10	7
H 54	6	7	6	9	1	5	6	7	7	1
H 55	10	2	5	2	2	7	7	1	9	6
H 56	7	1	9	6	2	5	7	8	2	5
H 57	10	8	5	4	4	8	3	3	10	7
H 58	9	8	2	3	1	9	3	1	10	6
H 59	4	9	1	10	7	1	7	1	3	2
H 60	6	8	5	4	4	8	4	2	10	7
N 61	8	3	1	4	1	3	2	3	10	3
N 62	8	6	8	8	2	8	3	3	6	7
N 63	1	7	5	7	3	7	5	8	3	5
N 64	7	5	2	4	1	5	4	2	9	9
N 65	8	1	4	4	3	7	4	5	10	1
N 66	8	3	8	8	7	7	7	5	10	5
N 67	9	9	1	4	1	5	2	1	9	7
N 68	4	10	10	10	6	7	4	6	3	10
N 69	7	3	2	10	1	9	4	2	5	5
N 70	8	8	5	7	1	1	4	9	10	7
N 71	6	4	4	3	1	5	2	4	5	1
N 72	9	6	1	8	7	7	7	6	9	8
N 73	4	2	10	8	3	7	3	10	6	7
N 74	3	8	8	8	3	7	3	3	10	6
N 75	8	9	8	4	4	2	2	3	9	7
N 76	6	8	8	4	3	4	3	2	3	2
N 77	8	4	4	4	4	8	2	8	9	5
N 78	4	2	8	3	2	6	7	10	5	6
N 79	7	10	1	7	6	6	3	7	4	10
N 80	6	2	4	7	1	3	2	1	9	5

Table 24

Median Positions on the PST

Card	Group									
	I	II	III	IV	V	VI	VII	VIII	IX	X
C	6.5	5.2	9.52	4.92	3.5	5.37	4.65	2.58	9.82	6.22
H	6.75	7.0	5.5	4.67	2.5	6.0	4.6	3.43	9.0	6.6
N <sup>a</sup>	6.67	5.5	4.5	7.25	3.2	6.5	3.8	4.5	9.16	6.0

a Displacement data in Table 14, p. 41 are based on Group N medians only. Medians for Groups C and H are presented for completeness.

Table 25

PST Displacement Frequency and Extent from Group N Medians

Subject	Forward				Forward total	Backward				Backward total
	1	2	3	4 <sup>a</sup>		1	2	3	4 <sup>a</sup>	
C 1	0	2	1	1	4	1	0	0	0	1
C 2	2	0	1	0	3	1	0	1	0	2
C 3	2	2	0	1	5	1	1	0	0	2
C 4	2	0	1	1	4	1	0	0	2	3
C 5	1	0	0	2	3	2	2	1	0	5
C 6	3	1	1	0	5	0	0	1	0	1
C 7	1	0	1	0	2	0	2	0	0	2
C 8	3	0	1	0	4	0	2	0	0	2
C 9	1	0	1	0	2	1	1	1	1	4
C 10	1	1	1	2	5	2	0	1	0	3
C 11	4	0	0	2	6	1	0	0	0	1
C 12	0	3	1	1	5	0	0	1	1	2
C 13	1	1	1	0	3	2	1	2	0	5
C 14	1	0	2	0	3	2	1	0	0	3
C 15	3	1	0	0	4	0	4	0	0	4
C 16	0	1	2	0	3	1	0	1	1	3
C 17	2	0	0	0	2	1	1	0	0	2
C 18	0	0	1	0	1	1	1	0	1	3
C 19	2	1	0	1	4	1	0	0	0	1
C 20	2	1	1	0	4	0	1	1	2	4

a Implies extent of 4 or more positions.

Table 25 (Continued)

Subject	Forward				Forward total	Backward				Backward total
	1	2	3	4 <sup>a</sup>		1	2	3	4 <sup>a</sup>	
C 21	1	0	1	0	2	2	2	0	0	4
C 22	3	2	1	0	6	1	0	0	0	1
C 23	0	1	1	3	5	1	0	3	0	4
C 24	1	1	1	2	5	1	0	2	1	4
C 25	1	0	1	0	2	2	1	1	0	4
C 26	0	0	2	0	2	2	0	0	2	4
C 27	1	0	1	0	2	2	2	0	0	4
C 28	0	1	1	1	3	2	2	0	0	4
C 29	1	0	1	3	5	0	2	0	1	3
C 30	1	2	0	1	4	1	1	0	0	2
C 31	1	1	2	1	5	1	0	0	1	2
C 32	1	0	1	2	4	2	1	2	0	5
C 33	2	1	0	1	4	1	1	0	0	2
C 34	1	0	1	2	4	2	1	1	0	4
C 35	3	1	1	0	5	0	0	1	0	1
C 36	0	2	1	2	5	0	0	3	0	3
C 37	0	1	1	4	6	1	1	0	0	2
C 38	1	0	1	0	2	2	0	1	0	3
C 39	0	0	2	0	2	0	0	0	0	0
C 40	1	0	1	0	2	1	1	1	0	3
H 41	3	0	1	0	4	0	1	0	1	2
H 42	2	0	0	0	2	2	0	0	0	2
H 43	2	0	1	0	3	1	1	0	0	2
H 44	1	1	1	0	3	1	1	0	0	2
H 45	2	2	0	1	5	1	1	1	0	3
H 46	3	1	1	2	7	1	0	0	0	1
H 47	1	1	0	0	2	3	0	0	1	4
H 48	1	1	2	2	6	0	0	0	1	1
H 49	0	2	0	0	2	1	0	1	3	5
H 50	0	1	1	0	2	1	1	1	0	3
H 51	0	3	1	2	6	0	0	1	0	1
H 52	2	0	2	2	6	1	0	0	1	2
H 53	0	1	1	0	2	3	0	0	1	4
H 54	1	2	0	1	4	3	2	0	0	5
H 55	1	0	2	1	4	0	0	2	0	2

Table 25 (Continued)

Subject	Forward				Forward total	Backward				Backward total
	1	2	3	4 <sup>a</sup>		1	2	3	4 <sup>a</sup>	
H 56	4	0	0	2	6	0	0	2	1	3
H 57	1	0	1	0	2	2	1	1	0	4
H 58	0	2	1	1	4	0	3	0	0	3
H 59	0	1	2	3	6	0	1	3	0	4
H 60	0	1	1	0	2	2	1	0	0	3
N 61	2	2	4	0	8	1	0	0	0	1
N 62	2	0	1	0	3	3	0	1	0	4
N 63	1	0	0	2	3	2	0	1	0	3
N 64	1	3	1	0	5	0	0	1	0	1
N 65	0	0	1	2	3	1	0	0	0	1
N 66	1	1	0	0	2	1	0	3	0	4
N 67	2	1	3	0	6	1	1	1	0	3
N 68	0	1	0	1	2	1	2	0	3	6
N 69	1	3	0	1	5	0	2	0	0	2
N 70	0	1	0	1	2	2	1	0	1	4
N 71	3	1	0	3	7	0	0	0	0	0
N 72	0	0	1	0	1	1	2	2	0	5
N 73	0	1	2	0	3	1	0	0	2	3
N 74	1	0	1	0	2	0	1	1	0	2
N 75	2	0	1	1	4	2	0	2	0	4
N 76	0	2	1	2	5	0	1	1	0	2
N 77	3	0	1	0	4	2	0	1	0	3
N 78	1	1	1	2	5	0	0	2	1	3
N 79	0	0	1	1	2	0	2	0	1	3
N 80	2	1	3	0	6	0	0	0	0	0



Table 26

## Rorschach Scores for Groups Present and Absent

Subject	<u>R</u>	<u>W</u>	<u>D</u>	<u>Dd</u>	<u>M</u>	<u>FM</u>	<u>Fm</u>	<u>F+</u>	<u>F-</u>	<u>F</u>	<u>Sh</u>	<u>FC</u>	<u>CF</u>	<u>C</u>	<u>Sum C</u>	<u>A</u>	<u>P</u>	<u>Rej</u>
Pr 1	21	7	12	2	2	2	1	7	1	11	1	0	0	0	0	8	1	0
Pr 4	14	8	6	0	1	1	1	4	0	4	3	1	2	1	4	8	4	0
Pr 5	18	7	9	1	3	1	1	3	5	9	0	0	1	2	4	5	4	0
Pr 6	24	7	16	11	2	1	0	8	4	19	1	0	1	0	1	6	4	0
Pr 8	52	9	32	11	4	0	2	18	4	35	1	0	7	1	8.5	12	7	0
Pr 11	14	3	11	0	0	0	0	6	2	13	0	1	0	0	0.5	11	4	2
Pr 14	37	13	21	3	3	1	3	12	2	16	4	4	7	2	8	13	7	0
Pr 17	17	4	11	2	1	1	0	9	4	14	0	1	1	0	1.5	10	4	1
Pr 22	26	4	20	2	1	3	0	14	3	22	1	2	0	0	1	16	4	0
Pr 24	14	4	8	2	2	0	0	8	2	11	0	0	0	0	0	7	4	1
Pr 27	11	6	3	2	0	1	0	3	7	10	1	0	0	0	0	10	2	0
Pr 28	22	7	12	3	5	1	0	8	8	17	0	0	0	0	0	15	6	0
Pr 29	15	4	10	1	0	0	0	8	4	12	0	3	0	0	1.5	10	2	0
Pr 30	14	8	6	0	2	1	0	4	4	8	1	1	2	0	2.5	7	2	0
Pr 35	29	4	16	9	0	0	2	14	6	25	1	1	2	0	2.5	13	5	0
Pr 36	17	11	5	1	0	1	0	4	2	10	1	2	1	3	6.5	9	3	0
Pr 37	22	5	13	4	1	1	1	11	0	16	3	1	3	0	3.5	10	6	0
Pr 40	31	4	25	2	1	3	0	19	2	20	4	4	3	0	5	18	4	0
Ab 2	14	6	7	1	0	3	0	7	4	13	0	1	0	0	0.5	11	4	0
Ab 3	13	4	7	2	3	0	1	8	1	8	0	0	0	0	0	7	3	2
Ab 7	11	4	7	0	1	0	0	5	2	8	0	0	1	0	1	7	3	2
Ab 9	10	4	6	0	0	0	0	1	0	3	2	0	1	3	5.5	4	3	1
Ab 10	10	9	1	0	0	0	0	0	2	9	0	0	0	1	1.5	0	0	0
Ab 12	12	6	6	0	0	3	0	0	3	6	0	1	1	0	1.5	9	1	0
Ab 13	16	6	9	1	1	0	0	9	3	13	0	0	1	1	2.5	9	6	0

Table 26 (Continued)

Subject	<u>R</u>	<u>W</u>	<u>D</u>	<u>Dd</u>	<u>M</u>	<u>FM</u>	<u>Fm</u>	<u>F+</u>	<u>F-</u>	<u>F</u>	<u>Sh</u>	<u>FC</u>	<u>CF</u>	<u>C</u>	<u>Sum C</u>	<u>A</u>	<u>P</u>	<u>Rej</u>
Ab 15	13	9	4	0	0	0	0	4	1	7	1	2	1	0	2	4	2	0
Ab 16	11	7	4	0	0	0	1	5	1	7	1	2	1	0	2	6	4	1
Ab 18	14	8	5	1	1	0	0	4	6	11	0	0	1	2	4	4	1	0
Ab 19	16	2	9	3	0	0	0	0	1	1	4	0	0	8	12	0	0	0
Ab 20	8	6	2	0	1	0	0	1	1	3	1	0	2	1	3.5	3	2	2
Ab 21	12	6	6	0	1	2	0	3	3	9	1	0	0	1	1.5	7	2	0
Ab 23	14	6	8	0	1	1	0	6	4	11	0	2	0	0	1	10	6	0
Ab 25	18	8	9	1	3	5	2	8	6	12	2	0	3	1	4.5	12	3	0
Ab 26	18	Un <sup>a</sup>	Un	Un	0	Un	Un	Un	Un	Un	Un	Un	Un	Un	Un	0	0	0
Ab 31	12	Un	Un	Un	0	Un	Un	Un	4	Un	Un	Un	Un	Un	Un	0	0	0
Ab 32	11	7	2	2	0	0	0	5	4	9	0	0	2	0	2	9	2	0
Ab 33	15	5	10	0	2	1	0	6	4	12	0	0	1	1	2.5	10	4	0
Ab 34	16	Un	Un	Un	2	0	0	Un	2	Un	Un	Un	Un	Un	Un	10	0	0
Ab 38	13	2	10	1	2	1	1	6	0	9	1	0	1	0	1	11	5	0
Ab 39	13	4	8	1	2	1	0	5	0	8	1	1	0	0	0.5	5	4	1
a Unscorable																		