PERSONALITY ADJUSTMENT OF AGING WOMEN

By

ALVIS WAYMAN CALIMAN

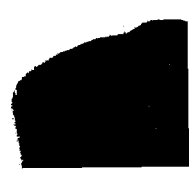
A THESIS

Submitted to the School of Graduate Studies of Michigan State College of Agriculture and Applied Science in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Department of Psychology

1951



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AN ABSTRACT

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Approved Harold H. Anderson.

Alvis Wayman Caliman

The purpose of this investigation was to make a personality study of 45 Negro women between the ages of 50 and 83, residing in Lansing, Michigan. The sample had previously been used in a nutritional study reported by Dr. Margaret A. Ohlson, Head, Department of Foods and Nutrition, Michigan State College (5). It was hoped that the investigation would provide an answer to the following questions:

1. How do Rorschach findings for these women compare with findings reported for other samples of normal adults and aged persons (2,4

2. Are there differences related to age in the personality structure of these women as indicated by the Rorschach test?

3. Is activity related to age differences, and to differences in level of emotional adjustment?

4. Is the health status of the sample related to age differences, and to level of emotional adjustment?

5. Is dietary status related to age differences, and to level of emotional adjustment?

6. Is there relationship between socio-economic factors and level of emotional adjustment?

The Rorschach test (1) and the Activity Inventory (3) were administered to each woman individually by the writer. Results of medical examinations, nutritional data, individual health ratings, and socio-economic data were made available by Dr. Ohlson.

To ascertain age differences, the sample was divided into two groups: Group I, 22 women 50 to 59 years of age; and Group II, 23 women 60 to 83 years of age. The Rorschach tests for each age group were rated individually by three judges in order to determine the best and poorest adjusted women.

The major findings were reported as follows:

1. The Horsehash findings indicated that the ability to perceive environmental situations adequately had not declined with age. The aged women were no more stereotyped in their thinking than other normal samples from different age groups. There had been no loss of emotional control for the sample as a whole. In respect to age differences, Group I gave significantly more Anatomy responses than Group II. This difference was interpreted as related to the menopause.

2. The Activity Inventory findings indicated that the women of Group I were more active than the women in Group II. In addition, women of both age groups rated as best adjusted, were more active than the women rated poorest in emotional adjustment.

3. Women judged as best adjusted were found to have a better health status than the poorest adjusted women.

4. On the whole the best adjusted women tended to have better dietary intake.

5. In the present sample there was no significant relationships between socio-economic factors and level of emotional adjustment.

Bibliography

1. Beck, Samuel J. Rorschach's Test I. Basic processes. New York, Grune and Stratton, 1944.

2. Beck, Samuel J., Rabin, Albert I., Thiesen, Warren G., Molish, Herman, and Thetford, William N. The normal personality as projected into the Rorschach test. J. Psychol., 1950, 30, 241-298.

3. Cavan, Ruth S., Burgess, Ernest W., Havighurst, Robert J., and Goldhamer, Herbert Personal adjustment in old age. Chicago, Science Research Associates, Inc., 1949.

4. Cheorow, Eugene J., Wesika, Paul E., and Heinitz, Arthur H. A psychometric evaluation of aged white males. Geriatrics, 1949, 4, 169-177.

5. Ohlson, Margaret A. Dietary practices of 100 women 40 to 75 years of age. J. Amer. Assoc., 1943, 24, 284-291.

ACKNOWLEDGMENTS

The writer expresses deep gratitude to Dr. Harold H. Anderson, under whose direction the present investigation was carried out. To Dr. Margaret A. Ohlson, the writer is greatly indebted. Dr. Ohlson made available the sample, and several kinds of data employed in the study, and also was of invaluable assistance in the treatment of the nutritional data. Dr. S. Howard Bartley, Dr. Albert I. Rabin, and Dr. M. Ray Denny were especially helpful in initiating the investigation. Dr. Rabin also was of great assistance in treating the Rorschach data. The writer wishes to thank Dr. Abraham Carp, Dr. Stewart G. Armitage, and Mr. Harry W. Blair for assistance in rating the Rorschach protocols. Finally, the author wishes to acknowledge the aid and suggestions given by the psychological internes at the Fort Custer Veterans Administration Hospital.

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CHAPTER I

THE NATURE OF THIS STUDY

Within the past two decades an increasing amount of attention and investigation has been focused on the adjustment of the so-called old people in our society. This interest in the problems of the older persons has been reflected in an increasing number of books concerning the problems of aging, an increasing number of projects in psychological and sociological research, and the emergence of professional journals such as Geriatrics and Gerontology, which are focused on the area of later maturity. In recent years the American Psychological Association has set up a separate division, the Division on Maturity and Old Age, through which the several interests of psychologists in this area are expressed. Beginning with the September, 1947 issue of Psychological Abstracts, the abstracts of publications in the area of old age were presented separately as a part of the section of Developmental Psychology. In volume II of the Annual Review of Psychology (26) a complete chapter was devoted to reviews of studies in the area of later maturity; whereas, in the first volume of that publication the studies in the area of old age were reviewed in the chapter called, "Growth, Development,

and Decline."

Most psychological research in old age has to date been concerned with mental disorders and mental capacities. Kaplan (14) has edited a book, which considered in some detail the mental disorders prominent in later life. While presenting with clarity information concerning mental illnesses in old age, the emphasis of the book was primarily in the direction of the abnormal person. In this respect it is illustrative of the emphasis of most of the research about problems of aging, in that the abnormal person rather than the normal has served as the subject.

In another volume edited by Lawton (18), the problems of aging persons were presented and discussed by writers of different professional and vocational backgrounds. Here, also, the design of the book tended to emphasize persons with problems. This emphasis has not contributed to our knowledge of the later years of normal adult life.

Along with studies of mental disorders, one is able to find many studies concerning the performance of aged persons on various tests of mental ability and mechanical aptitude. Many investigators, including Wechsler (28), have pointed out a general decline in mental functioning with age.

Of interest to persons working in the area of the problems of the normal aged person, is a recent book by Cavan, Burgess, Havighurst, and Goldhamer (7), entitled, Personality Adjustment in Old Age. Facts and data obtained from 2,988 individuals, served as the basis of the book. The book attempts to identify and define the problems occurring in later life, and to analyse the adjustment of the aging. The authors described two instruments which were employed to evaluate adjustment in old age. The instruments were an Activity Inventory, and an Index of Attitudes. The former instrument was employed in the present investigation.

In reference to instruments employed in the study of personality adjustment, the Rorschach has been used frequently. This instrument has been in recent years employed to measure personality adjustment in later years. Therefore a review of its use in such undertakings is in order.

Since the introduction of the Rorschach test (24) in 1922, the test has been employed in many studies, with the usual point of departure being the use of the test in clinic settings. It is not difficult to understand why many of the reported investigations in the Rorschach method are based on findings obtained from patients in mental institutions, if one only review the early history

of the test. Rorschach based his early findings on investigations carried out with pathological subjects. Investigations in the Rorschach method employing normal subjects are not numerous. Individuals free of personality disorders ordinarily do not present themselves to agencies whose interests lie in the study and treatment of personality disorders. For this reason alone there is some difficulty securing for Rorschach study non-disturbed individuals; hence most Rorschach research continues with clinic or agency cases.

Most Rorschach studies reported for normal samples, use as subjects students or institution employees. Probably the most extensive normative Rorschach study reported to date, is that by Beck, Rabin, Thiesen, Molish, and Thetford (5). The study was based on 157 employees of the Spiegel Mail Order House in Chicago, Illinois. This sample included various levels of socio-economic status and intellectual achievement. The subjects were not, however, differentiated as to age.

Of the Rorschach studies reported on normal persons, very few have been reported on individuals in the later periods of life. Information on the Rorschach performance of older persons is, therefore, limited. Recently, two Rorschach investigations dealing with older persons were published. Chesrow, Woisika, and Reinitz (8) reported

Rorschach findings based on 20 male patients at the Oak Forest Infirmary, Oak Forest, Illinois. The ages of these patients ranged from 64 to 83 years. The educational level was varied, ranging from college training for one patient to no formal training for another. The hospitalization of the patients was due primarily to physical ailments. The authors summed up their findings with the Rorschach as follows: "The evaluation of the Rorschach test generally shows: Delayed responses, reduced number of responses, stereotyped thinking, constriction in intellectual and emotional spheres, and impotence. In this group these are related to the aging of the mental processes." (8, p. 177).

A second study of aging persons by Prados and Fried, (21), reported Rorschach findings based on 35 subjects between the ages of 50 and 80. The sample was not described other than to state that the subjects were able to carry on everyday tasks. The authors pointed out a trend of emotional and intellectual deterioration with age, and appeared to relate these changes to the aging processes. The authors did point out that these changes did not progress at a uniform rate, and were not uniformly present in all subjects.

The two studies mentioned, while valuable in presenting data on older persons, are somewhat limited in

scope. First, the Rorschach was the only instrument used. Second, the studies were cross sectional and gave no indications of change with age in Rorschach performance.

A problem that arises in all investigations with older age groups is that of fixing a point for the beginning of old age. Many age points have been arbitrarily set for various purposes as the beginning of old age. The United States Congress, for the purpose of paying social security benefits, has set age 65 as the beginning age for old age benefits. Recently there have been proposals for a downward revision of this age level. In order to designate the various phases of aging, Stieglitz (26) has suggested an overlapping classification of the stages of aging, including the periods of evolution, maturation, senescence, and involution. This classification is, of course, based on physiological changes. In spite of obvious difficulties, students of problems of aging usually take some chronological point as their reference.

The present study was undertaken with the full cooperation of Dr. Margaret A. Ohlson, Head of the Department of Foods and Nutrition, Michigan State College. Dr. Ohlson very generously made available to the writer the results of dietary studies, physical examinations, health ratings, and socio-economic data.

1. Purpose of the present investigation

The general purpose of the present investigation was to make a personality study of the sample of aging women, for whom certain data had been made available to the writer by Dr. Ohlson.

Concisely, it was hoped that the present investigation would, in part, answer the following questions:

a. How do Rorschach findings for the present sample compare with findings reported for other samples of normal adult and aged subjects?
b. Are there differences related to age in the personality structure of the present sample as indicated by the Rorschach?
c. Is the health status of the sample related to age differences, and to level of emotional adjustment?
d. Is physical and social activity related to age differences, and to level of emotional adjustment?
e. Is dietary status related to age differences, and to level of emotional adjustment?
f. Is there relationship between socio-economic factors and level of emotional adjustment?

2. Instruments and data employed in the present investigation

The present study employs the following instruments:

The Rorschach test, and the Activity Inventory. The Rorschach test (2) is a relatively unstructured projective personality test consisting of ten ink blots which yields information on the personality structure, emotional adjustment, methods of dealing with environmental situations, and the integrative capacity of the subject.

The Activity Inventory, developed by Cavan, Burgess, Havighurst, and Goldhamer (7), was used in this investigation as an index of social and physical activity in later life. The inventory will be described later.

In addition, three kinds of data were made available from the study conducted by Dr. Ohlson (19). (a) Results from medical examination were available for each subject. This examination provided information in the following areas: height and weight, blood pressure, blood sugar, reproductive functioning, bone structure, and past surgery and illnesses. (b) A socio-economic questionnaire provided the following information: sources of and amount of income, home ownership, family membership, length of time in the community, education, and marital status. (c) Dietary summaries provided data on the intake of calories, minerals, vitamins, and proteins, and on diet adequacy.

3. Description of the sample

Findings in the present investigation are reported for 45 Negro women between the ages of 50 and 83, residing in Lansing, Michigan, an industrial city of approximately 100,000 in central Michigan. The subjects had been obtained by the Department of Foods and Nutrition for the dietary studies conducted by that department. The subjects came from all parts of the city in which colored families lived, and were selected for the purpose of making them representative of Negro women of the stated age range in the city of Lansing. Fifty women were seen in the laboratory of the Department of Foods and Nutrition; of these 50, 45 of the women composed the present sample.

All contacts for the administration of the Rorschach and the Activity Inventory were made by the writer. The procedure was for the investigator to call in person at the residence of each subject, either to make an appointment for testing or to administer the instruments during the initial contact. Upon initial contact with the subject, the author asked her if she recalled her visit to the Department of Foods and Nutrition on the campus of Michigan State College. The subject usually recalled this visit immediately. The author next informed the woman that he was from the Department of Psychology

at the college, and was cooperating with the Department of Foods and Nutrition in a continuation of the study in which she had previously participated. The woman was asked if the writer might use an hour or so of her time, or, if she was busy at the time, could he make an appointment for an interview in the next few days. In approximately 50 % of the contacts the subject had the time for an immediate interview.

All testing and interviewing was done by the author in the homes of the subjects, usually in the late morning or early afternoon hours for women who were not working outside of their homes, and in the evening for those women holding outside jobs. Disturbances during testing were at a minimum. On the whole fewer disturbances were incurred than one often finds in some clinics and hospitals.

The author usually began the interview by asking the subject her impression of the visit to the laboratory at the college. In general most of the women were quite impressed by the treatment they had been accorded, and in particular by the medical examination. This conversation served to establish rapport between the subject and investigator. After ten or fifteen minutes of conversation, the author followed with the administration of the Rorschach and Activity Inventory. At the conclusion

of the testing the author usually visited with the women for ten minutes to one half hour. The women frequently asked the author if he had seen a particular friend of hers who had participated in the study, reminding him to be certain to see her.

Of the 50 subjects seen in the laboratory of the Department of Foods and Nutrition, 47 were used in the present study. Of the five not used, two were deceased, one subject refused to participate, a fourth indicated that she did not participate in the original survey, and the author was unable to contact the fifth.

For purposes of the present investigation the sample was divided into two groups, Group I and Group II. Group I included 22 women in the age range 50-59; Group II included 25 women in the age range 60-83. Certain data for the total sample may be found in Table I. Table II presents the mean ages, the S.D.'s, and age ranges for the subjects in the two groups, and also for the sample as a whole. The mean age for the total sample was 70.17 years, 55.77 years for Group I, and 83.47 for Group II. The mean educational attainments of the two groups did not differ significantly. The mean school grade completed for the total sample was 7.7, 8.1 for Group I, and 7.4 for Group II. Only two women in the whole sample had gotten their college degrees. Seventy-five

per cent of the women were living in homes which were either owned outright, or were in the process of being paid for by the woman and her husband, or by the woman alone.

TABLE I

CHARACTERISTICS OF THE SAMPLE

A Code No.	B Adjustment	C Age	D Marital Status	E Owns Home	F Income	G Education	H Work Status	I No. Ch.	J Years in Lansing
			M W Sep						
21		50	M	Yes	D	10	Yes	2	48
43		50	W	Yes	A	10	No	5	21
67	P	50	M	Yes	F	8	Yes	8	50
71	E	50	M	Yes	D	7	Yes	0	8
77		50	M	Yes	F	8	Yes	0	8
28		52	M	Yes	A	10	Yes	1	41
46		52	M	Yes	F	10	No	1	4
75		52	M	No	B	10	No	1	32
48	L	53	M	Yes	D	8	Yes	0	27
96	P	53	W	Yes	D	6	Yes	3	10

TABLE I (Cont'd)

A	B	C	D	E	F	G	H	I	J
9	B	53	M	Yes	-	8	Yes	1	30
22	P	54	M	No	D	12	No	1	3
44		54	M	Yes	H	6	Yes	9	3
66	L	54	Sep.	No	B	6	Yes	5	14
4		55	M	Yes	G	7	Yes	4	27
20		55	W	Yes	E	5	Yes	10	30
65		57	M	Yes	D	12	No	5	29
52	P	56	M	Yes	C	2	No	0	24
49	P	56	M	Yes	F	5	No	0	16
25		59	W	Yes	-	8	Yes	4	-
50	B	59	M	Yes	F	8	No	0	59
68		59	M	Yes	D	1 yr coll	Yes	3	59
45		60	Sep	Yes	C	9	Yes	0	30
55		60	M	Yes	A	7	No	13	5

TABLE I (Cont'd)

A	B	C	D	E	F	G	H	I	J
61		60	[illegible]	Yes	C	4	No	1	[illegible]5
18		61	[illegible]	Yes	I	9	No	0	20
35	P	61	[illegible]	Yes	[illegible]	10	No	0	28
73		61	[illegible]	No	[illegible]	2	No	0	17
3	B	62	[illegible]ep	Yes	[illegible]	7	Yes	1	4
6	P	62	[illegible]	Yes	[illegible]	12	No	0	28
93	P	62	[illegible]	No	[illegible]	4	No	5	7
1		63	[illegible]	Yes	C	0		0	63
39		64	[illegible]ep	No	[illegible]	7	No	1	3
62	B	64	[illegible]	Yes	-	11	Yes	0	43
41		65	[illegible]	Yes	[illegible]	12	Yes	2	65
64		65	[illegible]	Yes	D	12	No	4	23
27		66	[illegible]	Yes	[illegible]	4	No	5	66
29	P	67	[illegible]	Yes	[illegible]	6	No	4	67

TABLE 1 (cont'd.)

A	B	C	D	E	F	G	H	I	J
72		67	W	No	C	5	Yes	1	5
81		67	W	No	A	3	No	3	10
55	B	71	W	Yes	-	2 yr coll	No	1	33
95	F	75	W	No	A	4	No	5	23
17		77	W	No	A	8	No	8	53
23	B	80	W	Yes	B	6	No	1	51
82		83	W	No	A	8	No	2	52

Explanation of Table:

Column B--B - Subjects rated as best adjusted
P - Subjects rated as poorest adjusted

D--M - Married and living with husband
W - Widow
Sep - Woman living apart from husband, including divorced

E--Yes - Owns home outright or paying for same
No - Rents or lives with member of family

F--A - Under $1000 C - $1500 to $1999 E-$2500 to 2999
B - $1000 to $1499 D - $2000 to $2499 F-$3000 to 3499
G - $3500 to 3999 H - $4000 to 4999 I-$5000 to 5999

G--Refers to highest grade completed

H--Yes - Woman works outside of home
No - Woman does not work outside of home

I--Refers to number of children born to woman exclusive of still births

TABLE II

AGE DATA OF TOTAL SAMPLE AND SUBGROUPS

Group	N	Range	Mean	SD
I	22	50-59	53.77	2.94
II	23	60-83	66.43	6.33
Total	45	50-83	60.13	8.02

TABLE III

HIGHEST SCHOOL GRADE COMPLETED FOR TOTAL SAMPLE AND SUBGROUPS

Group	N	Mean	SD
I	22	8.1	2.56
II	23	7.4	3.19
Total	45	7.7	3.03

CHAPTER II

PERSONALITY FACTORS AS REVEALED BY RORSCHACH FINDINGS

In this chapter the Rorschach findings for the present sample will be compared with the findings reported by Beck and colleagues, and the findings reported by Chesrow and associates. In the second part of the chapter the performance of the two age groups of the present sample will be contrasted. The sample employed by Beck and colleagues will be referred to as the Beck-Spiegel sample; and the sample used by Chesrow and associates will be referred to as the Chesrow-Oak Forest sample. The Rorschachs of the present sample were scored according to the Beck method (2).

A. Comparison Of Rorschach Findings In The Caliman Sample With Findings In The Beck-Spiegel, And Chesrow-Oak Forest Samples

1. Responses and Approach

Table 4 presents the total responses and the approach data for the Caliman and Beck-Spiegel samples. The approach data indicate the number of the total responses which are: 1) whole responses, 2) commonly seen details of the card, or 3) less frequently seen details.

The mean number of total responses in the present sample

TABLE IV

RORSCHACH RESPONSES AND APPROACH*

Response	Per Cent	Caliman Sample Mean	SD	Per Cent	Beck-Spiegel Sample Mean	SD	M diff	"t"
R		20.20	5.90		32.65	17.68	12.45	7.45
W	24	4.91	2.18	17	5.50	3.76	.59	1.31
D	73	14.82	4.28	73	22.35	10.49	8.03	7.57
Dd	3	.69	1.11	10	3.02	3.38	2.67	8.34

*The approach data for the Chesrow-Oak Forest sample were not available

was 20.20, which was significantly lower than given by the Beck-Spiegel sample. The Beck-Spiegel sample gave a mean of 32.65 responses. The mean number of responses for the Chesrow-Oak Forest sample was 18.05, which did not differ significantly from the mean number given by the present sample.

As the Caliman and Chesrow-Oak Forest samples are composed of aged persons, the findings appear to indicate a decline in Rorschach productivity in the later years of life. Klopfer (17), reporting on a sample from an old age home, found a mean of 13 total responses. The age range of the Klopfer sample was 62 to 93 years.

Examining the approach data in the present sample, it was found that the subjects tended to accentuate the W response, while the Dd response was virtually neglected. The emphasis on the W responses occurred to the extent that the mean W response of 4.91 in the present sample approached the 5.50 mean W response of the Beck-Spiegel subjects, although the mean total response of the latter sample was greater by 12.45. The excess of W over Dd appeared to indicate less anxiety and neurotic strivings in the declining years of life. The desire to pursue and search out various aspects of the environment seemed to give way to a more passive acceptance of the environment. For the most part the Whole responses in the sample of

older women were the common, easily perceived type of response , such as the "bat" and "butterfly."

It is possible that poor vision in the aged group might have accounted in part for the fewer number of Dd responses. For the present sample there was no information available on vision.

2. Z, The Organizational Score

The Z score concept, as developed by Beck (2), refers to the ability of the subject to perceive two or more parts of the card in relationship; or to perceive the card as a whole. In this framework, Z is indicative of the intellectual energy of the subject and his present intellectual functioning. This concept does not refer to intelligence per se, or to intellectual potential, but to present intellectual activity. Table V shows the Z score distribution in the Caliman Beck-Spiegel and Chesrow-Oak Forest samples. It is expected that the Z score will be related to the total number of responses. It follows that with a smaller number of responses, the Z score will be smaller. As there was a mean response differential of 12.46 in favor of the Beck-Spiegel sample over the present sample, it would be expected that the former sample would show a correspondingly higher Z score activity.

TABLE V

RORSCHACH Z SCORE DISTRIBUTIONS

Sample	N	Mean	SD	"t"*
Caliman	45	13.91	7.74	
Beck-Spiegel	147	22.48	14.91	5.23
Chesrow-Oak Forest	20	11.92	5.26	1.18

* The "t" scores given refer to the "t" difference between the sample for which the score is given and the Caliman sample. This holds true for the other tables in this report.

One other finding in regard to Z score in the Beck-Spiegel sample may shed some light on Z score activity in the Caliman sample. The mean Z score for the Beck-Spiegel sample was 22.48; while that in occupational group "four" for the same sample was 16.20. This occupational group was an unskilled group, composed of persons employed as ushers, warehouse packers, elevator operators, and washroom attendants. Concerning the relation of Z to vocation, Beck and colleagues stated, "The higher the vocational group, the higher the Z. The intellectual energy represented by Z has its selective potency in the competitive field which present-day industry is"(5, p. 252).

The mean Z score for the Caliman sample tended to approach the mean Z score of occupational group "four" of the Beck-Spiegel sample. There appears to be some basis for assuming that the occupational status and intellectual level of the present sample may have been contributing factors to the lowered Z score productivity.

3, M, The Movement Response

The Movement responses or M ("a clown dancing," or "two persons holding a basket") yield an indication of the creativity and the imaginative processes of the person. The ability for rational evaluation of environmental problems is also reflected in the M response.

TABLE VI

RORSCHACH MOVEMENT RESPONSES

Sample	Mean	SD
Caliman	1.38	1.47
Beck-Spiegel	3.50	3.24
Chesrow-Oak Forest	1.65	1.20

Table VI shows the number of M responses given by the subjects of the Caliman, Beck-Spiegel, and Chesrow-Oak Forest samples. The M response occurred one-half as frequently in the present sample as it occurred in the Beck Spiegel subjects. There was no significant difference between the mean M responses in the Caliman and Chesrow-Oak Forest samples. These results were not surprising as the individuals in the two latter samples had passed their most productive and creative years. The standard deviations of the three samples indicate considerable variability in the distribution of the M response. In each of the three samples a relatively small number of the subjects were very productive in Movement responses, materially elevating the mean for each sample. The majority of the subjects in each sample fell below the mean of their sample in M productivity. As M is indicative of creative ability, the consistency in these findings may be reflective of the distribution of creative ability in our culture; or at least reflective of the manifestations of that ability.

4. Color Responses

The color response in Rorschach framework is indicative of the amount and type of emotional expression. There are primarily three types of color responses: (a) Pure Color, in which the percept is determined solely

by the color. (b) Color-Form, in which the percept is determined primarily by the color and secondarily, by the form or shape. For example a butterfly is perceived, because of the color mainly, and also because of the shape or form. (c) Form-Color, in which the percept is determined primarily because of the form, and secondarily because of the color. The example of the butterfly would hold here, with the exception that the form would be more important than the color.

Table VII shows the means of the three types of color responses and also the sum of the color values for the three samples. The findings concerning color seem to indicate that the 45 aging colored women of the Caliman study and the 20 male patients in the Chesrow-Oak Forest sample showed a lesser tendency for overt emotional expression and lability than the subjects of the Beck-Spiegel sample, which contained on the whole younger persons.

Rorschach findings with children often reveal an unbridled variety of affective expression, illustrated by a predominance of Pure Color and Color-Form responses. In children this is found to be normal, and is to be expected in the normal unhibited child. Ford (10) found in her study with children that there was a predominance of Pure Color and Color-Form responses over the Form-Color

TABLE VII

RORSCHACH COLOR RESPONSES *

	Sum of Color Values		Sum of Pure Color		Sum of Color Form		Sum of Form Color	
Sample	M	SD	M	SD	M	SD	M	SD
Caliman	1.53	1.37	.33	.77	.64	.82	.56	.76
Beck-Spiegel	3.11	2.74	.49	.81	1.44	1.77	1.18	1.15
Chesrow-Oak Forest	1.25	1.91	.90	1.41	.30	.84	.05	.16

*The weightings used for the sum of the color values are those used by Beck (2): Pure Color responses 1.5, Color-Form responses 1.0, and Form-Color responses 0.5

responses. Also referring to changes in affective responsivity with age, Rabin and Beck stated, "A generalized drop in affectivity, and most particularly in primitive affect, is concomitant with rise in age level." (23), p. 599).

By the time the normal child reaches the early adult years the ability to control childish affectivity is present, however tendencies for labile reactivity may yet remain. Beck and collaborators refer to their sample, ". . . as having made some progress towards maturity and towards capacity for social rapport"(5, p. 259). The subjects in the present sample appear to be emotionally stable, and to have a relatively low degree of excitability. There is no evidence that the declining years of the normal adult are marked by a return to childhood emotionality. These findings indicate that on the whole normal persons in old age have adequate control of their overt emotional expression.

5. Y, The Light-Determined Responses

The Y response is taken to be indicative of passivity and especially that passivity stemming from the anxiety of the subject. When this type of response occurs in pathological frequency, it is indicative of fear and feelings of depression.

For a percept to be labeled as a light-determined response, the percept must be determined in whole or part by shading or differences in light values. The perceiving of clouds, because of the darkness of the particular card, would be an example of a Y type of response. Y responses may be determined wholly by light values, or in part by form or shape; however, in this report the Y responses are not differentiated.

Table VIII presents the mean Y responses for the three samples. In both the Caliman sample and the Chesrow-Oak Forest subjects the Y response occurred less frequently than in the sample of normal adults, reported by Beck and colleagues. The Y factor in the latter sample was certainly not indicative of clinical abnormality; but in the two samples of older persons, anxiety, as portrayed by Y, appeared to be even further reduced. This seems to reflect a tendency of the older-aged groups to accept their status in life and their total adjustment without any great anxiety over effecting a change in conditions. There is no evidence whether the institutionalization of the Chesrow-Oak Forest sample affected the anxiety of the twenty aged males.

c. V, The Vista Response

In Rorschach framework the V response is indicative of the quality of self evaluation. An excess of this

TABLE VIII

RORSCHACH Y RESPONSES

Sample	Mean	SD	"t"
Caliman	.82	.84	
Beck-Spiegel	1.96	2.22	5.18
Chesrow-Oak Forest	.90	.74	.38

quality results in feelings of inferiority and inadequacy on the part of the individual in his present environment. In order for a response to be scored as Vista, the part of the card perceived must be seen as being at a distance. "The coloring makes that look like a mountain peak in the distance," is an example of a Vista response.

In the sample of aged women the V response was practically non-existent. Out of a total of 909 responses given by the entire sample, only two Vista responses were obtained. In the Beck-Spiegel sample, however, there was a mean of 1.84 V responses per subject. No Vista data were reported for the sample of aged men. One may only speculate as to the rarity of V responses in the sample of women over fifty years of age. It might be expected that V activity would occur when the individual in his own thinking contrasts himself with his environment, and feels himself inadequate to meet the challenges presented by the environment. It may be expected that the women of the present sample felt less challenged by the environment, and perceived the environment less as a threat than did the adults of the Beck-Spiegel sample. In essence this explanation seems to indicate a more complete adjustment to the environment by the aging women.

7. S, The White Space Responses

The perception of S in the Rorschach is an indication of the determination and persistency of an individual in contacts with his environment. S may also be an index of the resistance to pressure, coercion, or change on the part of the individual. Responses are scored as S, when the subject has used the white or the uncolored part of the card for the percept. Table IX shows the mean S responses for the Caliman and the Beck-Spiegel samples.

The women of the present sample were found to be low in the activity denoted by the S response, when compared with the Beck-Spiegel sample. The findings in this area appeared to point out a decline in the aggressiveness of the person in the late years of life.

8. F Plus, The Correct Form Response

The per cent of the Rorschach Form responses which are scored as plus is a very crucial index of the accuracy of the perceptions of the person. This index provides an answer to the question concerning the accuracy of thinking of the individual in relation to others. In the Caliman sample the form responses have been scored according to norms announced by Beck (3). By the Beck system a response is scored as plus, if that response was given by a sufficient number of his sample to merit the

TABLE IX

RORSCHACH SPACE RESPONSES

Sample	Mean	SD	"t"
Caliman	.64	.82	
Beck-Spiegel	1.90	2.14	6.00
Chesrow-Oak Forest	.80	1.18	.53

plus score. Table X reveals the mean F Plus per cent of the Caliman, Beck-Spiegel, and Chesrow-Oak Forest samples.

Mean F Plus per cent for the present sample was 75.62, as contrasted with 79.25 for the Beck-Spiegel sample, and 73.55 for the Chesrow-Oak Forest sample. There is no evidence that the subjects of the present sample differ greatly from the sample of younger adults in accuracy of form perception. The Chesrow-Oak Forest subjects who in the main were persons with physical disorders, maintained their perceptual adequacy in spite of alleged mental deterioration. A Form Plus per cent of 60 is believed to be the critical minimum for adequacy. A percentage that low would be considered borderline. Even though the accuracy of form perception was adequate for the two aged samples, accuracy of form perception for the Beck Spiegel was higher, which may be indicative of some decline in perceptual adequacy for the two aged samples.

9. H, The Human Response; and Hd, The Part-Human Response

Human responses are divided into H, the Whole-Human response, and Hd, the Part-Human response. Responses are scored as Whole-Human, when the entire human figure

TABLE X

RORSCHACH F PLUS RESPONSE PER CENT

Sample	Mean	SD	"t"
Caliman	75.62	13.98	
Beck-Spiegel	79.25	10.20	1.59
Chesrow-Oak Forest	73.55	17.44	.46

is seen. When only part of the human is seen the response is scored as Part-Human, or Hd, which refers to Human-Detail. Table XI presents the mean H and Hd responses given by the Caliman and Beck-Spiegel samples.

The Human response is indicative of the identification of the individual with other people in the environment. The amount of this factor reveals either a consideration and concern for other persons, or a rejection of other people and their interests and problems. The H, or Whole-Human response is clinically the more healthy response, while an excess of Hd or Part-Human responses is an indication of anxiety and stress in relations with other human beings. One can see in Table XI that H occurs in a varied manner in the two samples. In the present sample there are significantly lower frequencies of H than occur in the Beck-Spiegel sample. Even when the difference in total number of responses were taken into consideration, the H responses in the present sample were low. The relatively high standard deviation in the present sample indicates that the low H was not constant throughout the sample. The reason for the relatively low H will be discussed further in relation to the Anatomy responses.

Hd, or Part-Human responses are better interpreted when viewed in relation to the H responses. When Hd

TABLE XI

RORSCHACH HUMAN RESPONSES *

Sample	H, Whole-Human Responses		Hd, Part-Human Responses	
	Mean	SD	Mean	SD
Caliman	1.95	1.90	1.35	1.60
Beck-Spiegel	4.02	3.62	1.78	1.95

*Human response data for the Chesrow-Oak Forest sample are not available.

occurs in excess of H, questions may be raised as to the adequacy of the adjustment of the person to other individuals. In the Beck-Spiegel sample there was significantly more H than Hd. In the present sample H was not significantly higher than Hd, which seemed to indicate that for the sample as a whole there were certain adjustment problems.

10. A Per Cent, The Animal Response Per Cent

The per cent of A, or Animal responses in the Rorschach provides an index of the adaptivity and conventionality in thinking of the person. As the Animal percepts are the easiest to make, an excess of A responses is indicative of stereotyped thinking. Table XII shows the mean per cent of Animal responses for the Caliman, Beck-Spiegel, and Chesrow-Oak Forest samples. The table reveals no significant differences between the three samples in respect to per cent of Animal responses, although the Beck-Spiegel sample had a mean per cent of A responses slightly lower than the two aged samples. From these data one might conclude that conditions represented by the per cent of A responses remained relatively constant, and did not appear to be affected by the aging process.

TABLE XII

RORSCHACH ANIMAL RESPONSE PER CENT

Sample	Mean	SD	"t"
Caliman	48.47	18.58	
Beck-Spiegel	46.45	13.12	.68
Chesrow-Oak Forest	48.85	18.49	.06

11. An, The Anatomy Responses

An excess of Anatomy responses in the Rorschach shows an unhealthy concern, or anxiety over health and body functioning. Concern over anatomy often serves the purpose of establishing a somatic basis for diffuse anxiety feelings. Responses scored as Anatomy, include internal parts of the body, such as bones and organs. Table XIII presents the mean number of Anatomy responses in the Caliman and Beck-Spiegel samples.

The mean of 2.66 An responses in the present sample was certainly a high number, and revealed a gross concern about bodily functioning on the part of the sample as a whole. The relatively large standard deviation of 3.59 indicated that there was wide variation in the distribution of the Anatomy responses in the sample. Factors in this variation will be discussed later in the chapter where intra-group comparisons of the sample are made. It might be expected that changes that were occurring and that had occurred in the functioning of the reproductive systems of the women in this sample might have been responsible for the concern with anatomy.

In relation to the relatively low number of Whole-Human responses noted previously, certain additional comments are in order at this point. While the H response is indicative of concern with other persons, the An

TABLE XIII

ANATOMY RESPONSES *

Sample	Mean	SD	"t"
Caliman	2.66	3.59	
Beck-Spiegel	1.55	1.97	1.44

* Anatomy responses of the Chesrow-Oak Forest sample are not available.

response represents a more personal and private concern--a concern with the body and health of the person himself. When this personal concern is increased it might be expected that the person would be less concerned about other persons.

12. P, The Popular Response

The conformity of the individual to social mores, and his adjustment and adherance to group standards are reflected in the Popular responses on the Rorachach. Recent norms by Beck (3) contain 21 P responses. Table XIV shows the mean numbers of P responses given by the three samples.

The table indicates that the differences in P responses for the three samples were small, and that the Caliman sample yielded slightly fewer P responses than did the Beck-Spiegel sample, and slightly more P than did the Chesrow-Oak Forest sample. As the present sample is composed of normal women residing in a community situation it would be expected that they would show an average adherance to community standards. This expectation has been met.

B. Comparison Of Rorschach Findings In The Two Age Groups Of The Present Sample

In the preceding section of this chapter comparisons

TABLE XIV

RORSCHACH POPULAR RESPONSES

Sample	Mean	SD	"t"
Caliman	5.69	2.16	
Beck-Spiegel	6.79	2.41	2.89
Chesrow-Oak Forest	4.60	2.19	1.82

of Rorschach findings between the present, Beck-Spiegel, andChesrow-Oak Forest samples were presented. Wide differences were noted in regard to total number of responses, Z scores, Movement responses, Color responses, Human responses, and Y and Vista responses. In regard to the above variables, the Beck-Spiegel sample yielded a greater number of such responses. The two samples composed of aged persons tended on the whole to be quite similar in respect to the Rorschach variables, and were relatively the same as the Beck-Spiegel sample in Form Plus and Animal per cent.

By dividing the present sample into two age groups it is possible to test the differences in Rorschach performance in the two age groups. This division of the sample into two groups, one composed of women 50 to 59 years and the second composed of women 60 to 83 years, was mentioned in Chapter I. Data on the performance of these women on the Rorschach variables is contained in Table XV.

1. Response and Approach

From Table XV it is seen that the productivity of the two age groups is roughly identical, indicating that there was no trend toward reduced productivity as age increased. The approach for the two groups did not differ significantly. Form is the most striking feature

TABLE XV

SUMMARY OF 16 RORSCHACH VARIABLES

Variable	Group I Mean	Group I SD	Group II Mean	Group II SD	"t"
Responses	20.05	5.5	20.35	6.3	<1
W	5.36	2.3	4.47	2.1	<1
D	14.45	4.5	15.17	5.7	<1
Dd	.68	-	.69	-	-
Z	14.30	7.9	13.62	7.1	<1
M	1.37	1.43	1.83	.91	1.28
Y	1.09	.79	.61	.88	<1
Sum C	1.64	1.24	1.43	1.47	<1
V	Negligible				
F plus %	74.93	15.19	76.30	12.62	<1
H	1.32	1.28	2.57	1.87	2.39
Hd	1.82	1.41	1.52	2.33	<1
A%	49.09	19.72	47.87	17.09	<1
An	3.68	3.90	1.60	3.03	2.87
S	.91	.90	.39	1.03	1.79
P	5.23	1.97	6.13	2.22	<1

was the small number of Dd responses. Both groups appeared to concentrate most on the obvious aspects of their environment, and appeared neither anxious nor intellectually curious. This factor appeared constant for both groups, possibly indicative of no significant change in intellectual functioning.

2. Z, The Organizational Score

Differences in Z scores for the two age groups of the present sample were small and not significant. Since the function measured by the organizational score is assumed to be an intellectual one, we should expect little or no difference in the mean Z scores of the two groups since their academic attainments were quite similar. The lack of differences seemed to point further to an absence of intellectual shift in the sample due to the process of aging. The standard deviations reveal wide differences in the distribution of Z scores in the two groups, but these differences do not appear to be related to age differences.

3. M, The Movement Response

As noted previously, M in the present sample was low in comparison with the Beck-Spiegel sample. The lessening of productivity and creativity in the later years of life was given as a tentative explanation. Table XV

does not indicate a decrease in M activity related to age, but to the contrary, indicates that there was a tendency for M responses to occur with greater frequency in Group II, the older age group, than in Group I. A priori it was assumed that M activity would be present to a greater extent in the younger age group, but here appears a reversal of expectation, in that Group II gave significantly more M responses than did the subjects in Group I. It is suggested that factors other than age may have operated to produce the findings reported for M. One of the factors might have been that of menopause, which will be examined in relation to the Anatomy responses.

4. Color Responses

The differences between the two groups in relation to Color responses were small and with no apparent trends. Group I yielded 6 C, 13 CF, and 28 FC responses, while Group II yielded 4 C, 16 CF, and 22 FC responses. Table XVI shows the Movement-Color relationships for the two age groups of the present sample, and appears to indicate that there was some tendency for the subjects of Group II to exhibit a better balance between affective energy, and fantasy or wish fulfillment. However, since both M and Color responses appear to become fewer with age, and the means of such responses were relatively small in the

TABLE XVI

RORSCHACH MOVEMENT-COLOR RESPONSE RELATIONSHIP

	Number of Subjects		
	M > C	M < C	M = C
Group I	6	12	4
Group II	9	9	5
Total Sample	15	21	9

present sample, little significance can be placed on these findings other than to say that this may be another trend indicating better control of the affect with age.

5. Y, The Light Determined Response

The Y factor, while not high in either of the two groups occurred more frequently in the younger group, Group I. While the differences here are not great, it can be noted that this finding concurs with the findings reported in the previous section of this chapter, where it was found that the younger aged sample, the Beck-Spiegel, gave more Y responses than the two older age samples, the Caliman and Chesrow-Oak Forest.

6. V, The Vista Response

As stated previously in this chapter, the Vista response occurred with rarity in the present sample. For the entire sample there were only two V responses, both occurring in Group I. From this lack of V activity, it would not be feasible to attempt age comparisons within the present sample.

7. S, The White Space Response

As indicated in Table XV, the S response is relatively low in both age groups, with the tendency for S

to occur more frequently in Group I. The difference in S responses between the two groups was small, and the responses were distributed rather unevenly throughout both groups. The trend was consistent with a decline in S activity with age.

8. F Plus, The Correct Form Response

The two age groups of the present sample varied only insignificantly with regard to per cent of Correct Form responses, with Group II having a slightly higher F Plus per cent mean. It appeared that in a homogeneous group such as the present sample, there was no decline in perceptual accuracy on the Rorschach related to age differences. From the standard deviations it becomes apparent that some individuals of both age groups had F Plus per cents below what is ordinarily thought of as being adequate. On the other hand some subjects had F Plus percentages of 100. In either case there was no indication that age was a determining factor in the accuracy of Rorschach form perception.

9. H, The Human Response

It was pointed out in the previous reference to the H response that this activity was indicative of the person's identification with and concern for other human beings in the environment. The mean of H or Whole-Human responses

for Group II was nearly twice that for Group I. From this finding it would appear that on the whole, members of Group II were better able to identify with their fellows than were the members of Group I. Table XV reveals that for Group I, the Part-Human responses, Hd, exceeded the Whole-Human responses. Upon tabulating the ratio of Whole-Human to Part-Human responses in the two age groups of the present sample, it was found that 16 of the 23 subjects in Group II gave more H than Hd responses; while only 7 of the 22 subjects of Group I gave more H than Hd responses. This finding is not a healthy one as far as Group I is concerned. It may be posited that the finding in regard to Group I, might be due to the menopause. This will be discussed more fully in connection with Anatomy responses.

Group II appeared to be more stable in its H-Hd ratio, hence it may be hypothesized that this disruption in the psychic balance as protrayed by the Rorschach, corrects itself on the whole as members of Group I move into the age range of Group II.

10. A, The Animal Response

The difference between the two groups in respect to mean per cent of Animal responses was quite small, with Group I having a slightly higher per cent of Animal

responses. The conclusion follows that stereotypy as indicated by the per cent of Animal responses did not appear to be related to age differences.

11. An, The Anatomy Response

In the foregoing section of this chapter, the high Anatomy responses of the present sample were pointed out, and labeled as revealing a gross, unhealthy concern over bodily function. Table XV serves to clarify this finding, as the table shows that the younger age group, Group I, had a mean of 3.68 Anatomy responses, twice the size of the mean for Group II, which was 1.68. It is obvious that both groups revealed a concern for anatomical functioning, but that this concern was far greater in the group that ranged from 50 to 59 years. Immediately the question arises as to why the greater number of An responses was found in Group I. Since there is here an apparent age factor in the difference, one must ask what effect might the changes accompanying and immediately following menopause have on the psychological functioning of these women. All the women of Group I were either undergoing menopause, or had recently completed it. It may be posited that many women in Group I and certainly some of the women in Group II showed concern over the changes in body functioning as an experience concomitant with menopause.

This concern over anatomy is certainly self centered behavior, and may divert much of the attention of a woman from family and friends to her own felt personal needs. If this be a correct interpretation, then one can understand the reduction in Whole-Human responses in Group I, and the greater number of Hd responses.

12. P, The Popular Response

The difference in mean Popular responses between the two age groups was small, with a tendency for Group II to average about one P response more than Group I. Here one is led to the obvious conclusion that the ability to conform to the social standards of the environment does not appear to decline with aging in the present sample.

CHAPTER III

FINDINGS CONCERNING SOCIO-ECONOMIC STATUS, PHYSICAL AND SOCIAL ACTIVITY, AND SOCIAL, HEALTH, AND NUTRITIONAL STATUS

From data presented in the previous chapter, certain conclusions have been made concerning the present sample, as contrasted with the younger age sample of Beck (5) and the sample of aging men presented by Chesrow(8). So far, the present sample has been considered as a whole, without regard for level of personality adjustment of the individual members of the sample. In the present chapter the manner in which the better adjusted individuals were distinguished from the poorer adjusted individuals of the sample will be presented. Finally data will be presented concerning the adequacy of the best adjusted and poorest adjusted subjects in terms of activity, socio-economic factors, and dietary and nutritional status.

Rorschach Ratings Of Adjustment

In order to obtain from their Rorschach performance some estimate of the adjustment of the subjects, the Rorschach protocols were rated by three raters. The raters were designated as A, B, and C. Raters A and B

were advanced graduate students in clinical psychology, each having administered a minimum of one hundred Rorschachs, and interpreted a minimum of 50 records. Rater C held a Ph. D. in clinical psychology, and had wide experience with the Rorschach. After discussion with advisers and colleagues concerning the ratings of the Rorschachs it was decided to have the records of the two groups of the sample rated separately. This procedure was followed because it was believed that equally good adjustment in the two age groups might be reflected by differing degrees of Rorschach performance. If this proved to be the case, the well adjusted of one of the age groups might have been penalized. In Group I, Rorschachs were obtained from 22 women aged 50-59 years. In Group II there were Rorschach protocols for 23 women aged 60-84 years. The Rorschach protocols for each group were placed in a separate envelope. Each individual record was identified only by the code number of the subject.

The raters received the envelopes separately, with the following instructions:

> You will be given two envelopes, each containing a number of Rorschachs, complete with typewritten protocol and scoring summary. The records come from a group of aged women. For each group of records you are requested to select the five records you believe from your knowledge of the test to represent the best adjustment in the group, and the five records you believe to represent the poorest adjustment in

the group. Please make use of the protocol and the scoring summary. In the event you feel some of the records are approximately the same in terms of adjustment, feel free to include more than five records. List the records for each group in order of the goodness or poorness of adjustment.

In brief it was the task of the judges to select from each of the two groups of the sample the five best adjusted records and the five poorest adjusted records. The immediate question concerns the agreement of the judges.

Table XVII shows the percentage of agreement among the three raters in selecting the best and poorest adjusted from each age group. For complete or 100 per cent agreement among the three judges as to the five records that best indicated good adjustment and the five records that best indicated poorest adjustment in a single age group of the sample, the three judges would have had to agree on 30 points. It is easily seen from the nature of the rating instructions, that complete agreement was quite unlikely. Table XVII reveals that for rating the best and poorest adjusted Rorschach protocols in Group I, the percentage of agreement was 83; while the percentage of agreement for rating Group II was 67. The percentage of agreement between the individual raters ranged from 60 to 90, as shown in Table XVIII.

Table XVIII presents the results of the ratings. For each age group the five records indicating best adjustment and the five records indicating poorest adjustment are

listed in order of average rank.

The Relation of Age and Level of Adjustment to the Activity Inventory:

The Activity Inventory was developed and employed by Cavan, Burgess, Havighurst, and Goldhamer (7). The inventory was designed to yield a relatively objective index of activity of adults in the late years of life. These authors believed that the participation in various activities is one of the criteria of adjustment during this period of life. Following this reasoning, the more active the adult during this age period, the better the adjustment of the person to the environment.

The Activity Inventory consists of 20 items covering the areas of religious activity, security status, interpersonal contacts, leisure activity, and health status. The individual items have been given an arbitrary scoring system by the authors of scale, in such manner as to give the highest score for the greatest degree of participation in the activity measured by the item. The scoring was standardized on a group of 50 subjects with high preliminary scores on the inventory and 30 subjects with low preliminary scores.

As was mentioned previously, the Activity Inventory was administered by the writer to each subject of the sample. In analysing the results of the inventory, it

TABLE XVII

PERCENTAGES OF AGREEMENT AMONG RATERS A, B, AND C IN RATING BEST ADJUSTED AND POOREST ADJUSTED FROM RORSCHACH PROTOCOLS

Group	Percentage of Agreement A, B, and C	Percentage of Agreement A&B	A&C	B&C
I	83	80	90	80
II	67	80	60	60

TABLE XVIII

RATINGS OF BEST AND POOREST ADJUSTED RECORDS

Subject	Best Adjusted Rank	Best Adjusted Ave. Rank	Subject	Poorest Adjusted Rank	Poorest Adjusted Ave. Rank
		GROUP I			
9	1	1.0	52	18	14.3
66	2	2.0	22	19	16.8
71	3	3.3	49	20	19.0
50	4	4.0	67	21	19.7
48	5	7.5	96	22	21.3
		GROUP II			
62	1	2.0	29	19	17.3
1	2	3.0	6	20	18.5
53	3	3.3	93	21	20.3
23	4	6.0	95	22	21.7
3	5	7.0	35	23	22.3

would be worth while first to ascertain if the inventory discriminates between the two age groups of the sample. As the Activity Inventory was designed to yield an index of participation in varicus activities, it might be expected that the younger age group as a whole would score higher on the inventory than the older age group. A priori one would assume such difference on the basis of an expected better physical condition in the younger age group.

Table XIX reveals the mean Activity Inventory scores on the two age groups. Group I had a mean score of 36.45 on the inventory, as compared to a mean score of 32.39 for Group II. The maximum score possible on the Inventory was 55. The results indicate that the younger group, Group I, scored significantly higher on the Activity Inventory than did Group II. From these results it may be concluded that the difference was one to be attributed to age.

Logically, the next question appears to concern the agreement of performance on the Rorschach with performance on the Activity Inventory. To answer this question for both groups of the sample, the Activity Inventory scores of those persons rated as being of the best adjustment on the Rorschach by the three raters, were compared with the Activity Inventory scores of those

TABLE XIX

ACTIVITY INVENTORY SCORES OF GROUPS I AND II

Group	Mean	SD	M diff.	"t" score
I	36.45	6.68	4.06	1.93
II	32.39	7.06		

TABLE XX

ACTIVITY INVENTORY SCORES OF BEST AND POOREST ADJUSTED

Group	Mean	SD	M diff	"t" score
		GROUP I		
Best Adjusted	39.60	5.72	8.20	2.08
Poorest Adjusted	31.40	7.37		
		GROUP II		
Best Adjusted	33.40	6.39	4.00	.98
Poorest Adjusted	29.40	7.13		

rated as being of poorest adjustment on the Rorschach. Table XX shows the mean Activity Inventory scores of the best and poorest adjusted subjects of both age groups. In Group I the best adjusted had a mean inventory score of 39.60, while the poorest adjusted had a mean score of 31.40. This was a statistically reliable difference.

In Group II the best adjusted subjects scored higher on the Activity Inventory than did the poorest adjusted subjects. The difference was in the same direction as for Group I, but was not statistically reliable for these older subjects. The cause for the relatively small mean difference, 4.00, between the best and poorest adjusted of Group II, as compared with a mean difference of 8.20 in Group I, is not altogether clear. It may be posited that the difference is due in part to the general reduction in activity as age increases. It has been mentioned that Group II scored lower on the inventory than Group I. It appears that as activity declined, the difference between the best and poorest adjusted in terms of activity became less.

From the results obtained from the Activity Inventory it seems that participation in various activities during the later years of life is an index of adjustment. The results here would appear to substantiate the hypothesis of the authors of the Activity Inventory in this

regard. It is also evident that activity alone, as measured by the Activity Inventory, cannot be taken as a sole index of personality adjustment, when the Rorschach ratings of the three judges are used as the index of adjustment. The findings indicate that it is possible for a person to have a high Activity Inventory score and yet be rated by the three judges as being of poor adjustment.

Concisely, the findings in this section were as follows: The younger aged group, Group I, was a more active group, when the Activity Inventory was used as the criterion of activity. Second, those subjects rated as being of best adjustment from their Rorschachs were more active than those rated as being of poorest adjustment.

The Rorschach findings presented in Chapter II and the findings presented concerning the Activity Inventory appear to indicate that there is a reduction in the amount of energy expended by the person in later life. This would seem to result in a general retrenchment in environmental interests and explorations. This retrenchment appears to affect the intellectual sphere as well as the social areas. This retrenchment was demonstrated in the Rorschach performance by a low number of total responses, M responses, and a relatively low mean Z score. The accuracy of perception as indicated by the Form Plus per cent remained more than adequate. Hence,

there would appear to be reduction in energy and activity, but not deterioration of the intellectual processes. It appears that the personality structure has accommodated itself to the changes in physical activity and functioning brought about by aging.

It will be recalled that the women in Group I had a significantly higher mean score on the Activity Inventory than the women of Group II. Nevertheless, the best adjusted women in Group II were certainly as well adjusted in terms of the Rorschach as the best adjusted women in Group I, although their mean score on the inventory was lower. These findings appear to indicate the manner in which aging may modify physical adjustment without adversely affecting emotional adjustment.

The Relation of Emotional Adjustment to Socio-Economic Factors

One of the purposes of this investigation was to attempt to ascertain whether certain social and economic factors played prominent roles in the personality adjustment of these aging women. The factors considered were, marital status, home ownership, number of children born to the woman, length of time subject had lived in Lansing, Michigan, yearly income, and educational attainment. Specific information concerning these factors may be found

in Table I. This table was referred to in Chapter I.

For each of the above factors quantitative differences between the best and poorest adjusted individuals of the two groups were small. The small differences were probably due in part to the homogeneous nature of the sample in relation to the factors investigated. It will suffice to mention briefly the factors and compare either qualitatively or quantitatively their distribution among the best and poorest adjusted persons.

1. Marital Status--Of the 45 women in the sample, 27 were married and living with their husbands, 14 were widowed, and 4 were living apart from their husbands. All of the subjects had been married. Of the best adjusted in Group I, four women were living with their husbands, while one was separated from her husband. There was one widow among the poorest adjusted in Group I, whereas, the remaining women were living with their husbands. In the best adjusted of Group II, three women were widowed, one separated, and the remaining woman living with her husband. For the poorest adjusted of the group, two women were living with their husbands and remaining three were widows. There are no trends that would indicate any consistent influence of marital status on emotional adjustment. The status of being a widow did not appear in and of itself to be a differentiating factor in personality adjustment during the later years of life.

2. Number of Children--There is no evidence from this study that would permit one to assume that the bearing of children was an index of personality adjustment. Of the 45 women in the sample, 32 had given birth to at least one child. In Group I, two of the best adjusted women had given birth to at least one child, as compared with three women for the poorest adjusted. In the best and poorest adjusted of Group II, three women each had given birth to at least one child.

3. Length of Time in Lansing--In the present sample the individuals rated as best adjusted in Group I had lived in Lansing a mean of 27 years, and those rated as being of poorest adjustment had lived in the city a mean of 20 years. For Group II, the best adjusted had lived in the city a mean of 38 years and the poorest adjusted had lived in the city a mean of 30 years. The findings reveal that there was a tendency for the best adjusted persons to have lived in the city longer than the poorest adjusted. The variability between the persons in each group was wide, and it is doubtful that much significance can be placed in this finding. In general both the best and poorest adjusted women had lived in Lansing for a sufficient length of time to become adjusted to the community.

4. Home Ownership--Mention was made in Chapter I that

over 75% of the sample were either in the process of paying for a home, or owned a home outright. In Group I, four of the five best adjusted women were home owners, and for the poorest adjusted, four of the five women were home owners. In Group II, all of the individuals rated as being best adjusted were home owners; this was also true for three of the five women rated as being of poorest adjustment. The two individuals rated as being of poorest adjustment and who did not own homes, were two ladies near the upper end of the age distribution of the group, who lived alone in small apartments. It would appear that home ownership was not a discriminating factor in adjustment, but that the loneliness and solitude resulting from living alone during this period of life may well have been a factor in personality adjustment.

5. Income--The data on income were obtained in 1948 and 1949. The present sample is composed of women whose family incomes did not exceed six thousand dollars per year in any case. Of the total sample ten of the women lived in families whose yearly income was above $2,500 per year. Eighteen women lived in families whose yearly income ranged from $1,000 to $2,499 per year. Families of thirteen women had incomes below $1,000 per year. There were no income data available for four of the women.

There was no reason to suspect that monetary income was a differentiating factor in level of personality adjustment. It may be true that lack of financial security could affect the personality functioning of some persons; it is equally true that other persons of like financial status are able to maintain a very adequate level of adjustment.

6. Educational Attainment--Table III revealed that the total sample had a mean school grade attainment of 7.7 grades. There were no significant differences in the school attainments of the best and poorest adjusted persons of the two age groups.

From the foregoing discussion of the several social and economic factors it becomes apparent that it would be unfruitful to expect any of these factors to differentiate between the subjects of good and poor personality adjustment.

The Relation of Age and Level of Adjustment to Nutritional Status

From the dietary data available on the subjects it is possible to obtain some indication of the relation of diet to emotional adjustment, and to determine if there were differences between the two age groups in relation to dietary status. These data were secured by the

Department of Foods and Nutrition from reports furnished by the subjedts of their diets on three days selected by the department. The three days were spaced over a period of approximately two years; and for each subject the three days were selected so that each day came in a different season in the year and on a different day of the week. For example, if the diet of a certain woman had been checked the first time in the winter and on a Monday, this subject would be seen the next time in a different season of the year and on a different day of the week. By this method seasonal variations in the diet of the subjects were taken into account.

From this diet survey data were made available on the intake of calories, proteins, calcium, phosphorus, iron, vitamin A, vitamin C, thiamine, riboflavin, and niacin. Data reported in Tables XXI, XXII, and XXIII show the average daily consumption of the several nutrients during the survey period. The recommended daily allowances of these nutrients mentioned below are those recommended for women by the Food and Nutrition Board of the National Research Council (29).

Caloric intake--The recommended daily intake of calories was 2000. Table XXI indicates that both age groups of the present sample were low in respect to the recommended daily allowance of calories. The younger

TABLE XXI

MEAN DAILY INTAKE OF NUTRIENTS BY THE TWO AGE GROUPS

	Group I		Group II		
	Mean	SD	Mean	SD	"t"
Calories	1160	294	993	389	1.59
Proteins (Gms.)	49.7	16.8	39.4	21.4	1.76
Calcium (Gms.)	.36	.18	.39	.28	.17
Phosphorus (Gms.)	.73	.23	.61	.32	1.41
Iron (Gms.)	9.0	3.2	8.2	3.6	.78
Vitamin A (I.U.)	3443	3703	7425	3753	3.51
Vitamin C (Mgs.)	45.0	36.2	52.1	33.5	.65
Thiamine (Mgs.)	.78	.33	.65	.32	1.31
Riboflavin (Mgs.)	.98	.45	.99	.82	.05
Niacin (Mgs.)	8.4	2.8	7.3	4.6	.96

TABLE XXII

MEAN DAILY INTAKE OF NUTRIENTS BY THE BEST AND POOREST ADJUSTED OF GROUP I

	Best Adjusted		Poorest Adjusted		
	Mean	SD	Mean	SD	"t"
Calories	1353	378	1145	3.29	.83
Proteins (Gms.)	48.2	15.8	51.3	19.1	.25
Calcium (Gms.)	.42	.05	.18	.12	4.21
Phosphorus (Gms.)	.80	.14	.64	.21	1.27
Iron (Gms.)	9.8	3.0	10.2	4.2	.15
Vitamin A (I.U.)	6103	5913	2320	1666	1.23
Vitamin C (Mgs.)	61.7	46.7	36.3	25.6	.95
Thiamine (Mgs.)	.91	.32	.83	.51	.10
Riboflavin (Mgs.)	1.30	.45	.68	.33	2.24
Niacin (Mgs.)	9.7	4.2	9.3	2.5	.17

TABLE XXIII

MEAN DAILY INTAKE OF NUTRIENTS BY THE BEST AND POOREST ADJUSTED OF GROUP II

	Best Adjusted		Poorest Adjusted		"t"
	Mean	SD	Mean	SD	
Calories	1167	463	1020	295	.54
Proteins (Gms.)	51.1	21.2	31.3	12.5	1.58
Calcium (Gms.)	.51	.37	.26	.11	1.33
Phosphorus (Gms.)	.78	.39	.48	.18	1.40
Iron (Gms.)	8.1	3.2	7.3	2.3	.42
Vitamin A (I.U.)	2635	2269	10128	13452	1.10
Vitamin C (Mgs.)	41.5	37.6	66.0	43.4	.85
Thiamine (Mgs.)	.81	.46	.55	.12	1.08
Riboflavin (Mgs.)	1.15	.87	.70	.29	.98
Niacin (Mgs.)	8.1	3.8	5.2	1.1	1.48

women, Group I, consumed on the average more calories per day than the subjects in the older age group. The mean daily intake for Group I was 1160, as contrasted with 993 for Group II. This difference tended to approach statistical significance. The difference may be attributed to the difference in the physical activity of the two age groups, a difference that may be assumed to be related to age.

Differences between the best and poorest adjusted individuals of the two groups in respect to caloric intake were small, not approaching statistical significance. However, for each sample, the best adjusted subjects had a mean caloric intake higher than that for the poorest adjusted subjects of that group.

Proteins--The daily intake of proteins recommended for women was 60 gms. Ordinarily proteins occur in relation to the caloric intake. This relationship was present in the two age groups. The younger age group, which had a higher caloric intake, also had a higher average protein consumption, consuming an average of 49.7 gms., while Group II had an average of 39.4 gms.

In Group I there appeared only a very slight difference between the best and poorest adjusted in terms of protein intake, the difference being 3.1 gms. in favor of the poorest adjusted. For Group II the difference in

consumption was more, with the best adjusted individuals having a mean protein consumption 19.8 gms. higher than that for the poorest adjusted of that group.

Calcium--The recommended daily allowance of calcium was 1.0 gm. Calcium intake is not necessarily related to the caloric intake, being related primarily to the amount of milk in the diet. The difference between the two age groups in terms of calcium intake was negligible, as Group I consumed a mean of .36 gm. of calcium, as compared to .39 gm. for Group II.

The best adjusted persons of the two age groups consumed on the average more calcium than the poorest adjusted members of their particular group. The best adjusted subjects of Group I had a mean intake of .42 gm. and the poorest adjusted had a mean of .18 gm. The best adjusted of Group II also exceeded the poorest adjusted in calcium intake, consuming an average of .51 gm., as contrasted to .26 gm. for the poorest adjusted.

Phosphorus--This mineral tends to be found in the diet in relationship to caloric intake, and is related to bone and tooth development and to activity in general. The mean daily intake for Group I was higher than that for Group II, as the younger subjects had an average of.73 gm. while the older subjects had an average of .61 gm. This difference tended to approach statistical significance.

The best adjusted subjects of Groups I and II exceeded the poorest adjusted subjects of their respective groups in the comsumption of phosphorus. The mean phosphorus intake in the best adjusted of Group I was .78 gm., as compared to .48 gm. for the poorest adjusted; while in Group II the best adjusted ahowed a mean daily intake of this mineral of .80 gm., while the poorest adjusted had a mean daily intake of .64 gm. In both groups the differences approached statistical significance.

Vitamin A--The recommended daily allowance of vitamin A was 500 International Units. Vitamin A in the diet is not necessarily related to caloric intake, but tends to vary widely from person to person depending upon whether or not the individual in question eats foods that are high in vitamin A. Certain foods such as liver, carrots, spinach, and broccoli are high in vitamin A content, and if any one of them is eaten in quantity, it can increase greatly the vitamin A intake. The vitamin A range in the present sample was 210 to 50,576 I.U.daily. When the extreme cases (over 10,000) were removed from the sample, it was found that neither age nor level of emotional adjustment appeared to be related to the intake of vitamin A.

Vitamin C--The recommended daily allowance of this

vitamin was 70 mgs. A deficiency of this vitamin is said by Proudfit and Robinson (22) to result in degeneration of musclestructure, irritability, and poor health in general. Vitamin C is not related to caloric intake, but rather to the amount of fresh fruit in the diet. Group II consumed on the average more vitamin C than did Group I:52.1 mgs. as compared to 45.0 mgs. for Group I. This difference does not, however, approach statistical reliability.

The mean daily intake of vitamin C for the best adjusted of Group I was 61.7 mgs. as compared to 36.3 mgs. for the poorest adjusted. In Group II this occurrence was reversed, with the poorest adjusted having a mean daily intake of 66.0 mgs., as compared with 41.5 for the best adjusted. In both groups the variability in the intake of vitamin C was wide.

Thiamine--The recommended daily intake of thiamine was 1 mg. A deficit in the intake of this vitamin (22) is said to result in loss of interest, depression, irritability, and insomnia. This vitamin is related in the diet to the caloric intake. This relationship holds for the present sample. The intake of thiamine, while approaching adequacy for both groups, was higher in Group I, which had a mean daily intake of .78 mg., as compared to .65 mg. for Group II. These differences are

consistent with the trends in caloric intake.

In Group I the best adjusted individuals had a mean intake of .91 mg., as compared to .83 mgs. for the poorest adjusted. In Group II the difference between the best and poorest adjusted in terms of thiamine intake was greater than in Group I. The best adjusted in Group II had a mean intake of .81 mg., and the poorest adjusted had a daily mean intake of .55 mg. Although the differences were not statistically reliable, the better adjusted fared better in both groups.

Riboflavin--The daily allowance of this vitamin recommended was 1.5 mgs. In experiments with animals (22) riboflavin deficiency in the diet has been related to early senility. The amount of riboflavin in the diet is usually related to the amount of milk ingested, rather than to the caloric intake. In the present sample there was no difference between the two age groups in terms of the daily consumption of riboflavin. The mean daily intake for Group I was .98 mg., and for Group II .99 mg. Both groups were low as compared with the standard.

In terms of emotional adjustment, the best adjusted persons in the two age groups of the sample exceeded the poorest adjusted in the intake of riboflavin. The best adjusted of Group I had a daily intake of 1.30 mgs., as against .68 mg. for the poorest adjusted, the difference being statistically reliable. In Group II the best adjusted had a mean intake of 1.15 mgs. of riboflavin,

as compared with a mean of .70 mg. for the poorest adjusted, this difference being in the same direction as for Group I, but not statistically significant. In the sample there appears to be a trend for a greater intake of riboflavin to accompany emotional adjustment.

Niacin--A daily intake of 10 mgs. of niacin was recommended. Both age groups were below this standard. The subjects of Group I consumed on the average slightly more niacin than was consumed by subjects of Group II. The difference was small, 8.4 mgs. against 7.3 mgs.

In terms of emotional adjustment, niacin intake did not differentiate to any appreciable extent between the best and poorest adjusted subjects of Group I. The small difference was in favor of the best adjusted. In Group II the difference was larger, but in the same direction. The best adjusted had a mean daily intake of 8.1 mgs. of niacin, as compared to 5.2 mgs. for the poorest adjusted, the difference approaching statistical reliability.

Iron--For women the recommended daily allowance of iron was 12 gms. Iron, which is the active constituent of hemoglobin content in the blood, occurred in both age groups in nearly the same amount. The mean daily intake of iron for Group I was 9.0 gms. and for Group II was 8.2 gms.

The difference in iron intake between the best and poorest adjusted of each age group was quite small and not significant. It must be concluded that in the present sample iron intake was not related to age differences, nor to differences in emotional adjustment as measured by the Rorschach test.

In conclusion it appears that the differences in diet between the two age groups, occur for the most part in calories and in the nutrients that are found in the diet in relation to the caloric intake, such as proteins, phosphorus, and thiamine. The differences in the caloric intake between the two groups may be expected in view of the differences in physical activity. The smallest differences occurred in the intake of calcium and riboflavin, both of which are principally supplied by milk.

Concerning emotional adjustment and diet, the findings indicate that for the most part there were consistent trends for the best adjusted individuals of both age groups to exceed the poorest adjusted in the intake of the several nutrients. In Group I the best adjusted exceeded the poorest adjusted in the intake of all nutrients, except proteins and iron. In Group II the best adjusted exceeded in all nutrients except vitamin A and vitamin C. It is suggested that the difference

in the intake of milk between the best and poorest adjusted in both groups, which is reflected in calcium and riboflavin in the diet, may be related to emotional adjustment as indicated by the Rorschach. The best adjusted in Group I, and to a lesser extent the best adjusted in Group II, had a greater intake of calcium and riboflavin. Caution must be exercised in the interpretation of these findings, as the differences between the best and poorest adjusted in both groups were for the most part small, and the number of individuals classified as best and poorest adjusted was small. In general, the differences were consistently in the same direction, and would seem to suggest that there may be a relationship between diet as discussed above and emotional adjustment as previously defined.

The Rorschach test was employed in the Minnesota Experiment to ascertain if there were changes in performance related to rehabilitation following a starvation diet. The test was administered at the end of the starvation period and again after 12 weeks of rehabilitation. The authors concluded, "In our experiment the Rorschach results were essentially negative. This may be interpreted as an indication of the absence of psychotic changes and basic alterations in the personality structure"(15,p.879).

The diet study reported by Ohlson was vastly

different from that of the Minnesota Experiment, as in the latter study the subjects were placed on starvation diets. In the present study the diets of the women were sampled at intervals, and thereby the data are on the ordinary food intake of the women.

The Relation of Age and Level of Adjustment to Health

It has been previously mentioned that each woman in the present sample was given a medical examination. The results from the physical examinations were evaluated by the Department of Foods and Nutrition, in such a manner as to yield a numerical index of the physical condition of each subject. Factors considered and the method employed in the health evaluations will be found in Appendix A. In brief, the common disturbances were divided into major and minor ailments. Major disturbances consisted of poor reproductive record, broken bones, digestive disorders, circulatory disorders, hepatic disorders, major operations, and major nervous disorders. Minor disturbances included such disturbances as headaches, minor digestive disorders, minor operations, loss of appetite, and other minor disturbances. For each item in a major category three points were subtracted from the health score of the subject; and for each item in a minor category, one point was subtracted. Therefore, the health

scores ranged from zero, the best rating, downward to minus scores. For the present sample a score of 0 to -7 was good; -8 to -15 was fair; and below -15 was poor.

It can be seen from Table XXIV that the difference between Group I and Group II on the health evaluation was quite small, with a difference of less than one point. The average evaluation of Group I was -11.23, while that of Group II was -12.17. From the foregoing it can be seen that there was little difference between the two groups in terms of health status, with the small difference in health adequacy favoring the younger age group, Group I.

It would appear that there was a tendency for the better emotionally adjusted individuals of the two groups to be evaluated as being of better physical health. According to Table XXV, the best adjusted subjects in Group I had a mean health evaluation of -10.4, while the poorest adjusted had a mean evaluation score of -13.6. In Group II the best adjusted subjects had a mean evaluation score of -11.6, while the poorest adjusted had a mean of -13.6. While these results were not statistically significant, the differences approached significance, and trends were in favor of the best adjusted persons of both groups. Briefly, it would seem that in the later years there is some evidence to believe that physical health is a factor in adequacy of emotional adjustment.

TABLE XXIV

HEALTH EVALUATION SCORES OF GROUP I AND GROUP II

Group	Range	Mean	SD	"t"
I	-4 to -17	-11.23	3.69	
II	-7 to -20	-12.17	2.96	.92

TABLE XXV

HEALTH EVALUATION SCORES OF BEST AND POOREST ADJUSTED SUBJECTS

	Range	Mean	SD	"t"
	GROUP I			
Best Adjusted	-4 to -16	-10.4	4.03	
Poorest Adjusted	-9 to 16	-13.6	3.07	1.26
	GROUP II			
Best Adjusted	-10 to -15	-11.6	2.05	
Poorest Adjusted	-12 to -15	-13.6	1.04	1.74

The Relation of Age and Level of Emotional Adjustment to Blood Pressure

The systolic blood pressure represents the maximal pressure to which the blood rises. The diastolic pressure represents the constant load which the vascular walls are carrying. Best and Taylor (6) stated that the systolic blood pressure was subject to wider variations under ordinary health than diastolic pressure. For that reason the diastolic pressure, according to these authors, reflects better the state of the peripheral vessels. These authors state the average systolic blood pressure at the age of 60 to be 135, with a pressure in excess of 150 being abnormal. At age 60 the average diastolic blood pressure was reported to be 89. Table XXVI shows the systolic and diastolic blood pressure for the two age groups of the present sample.

Group I had lower mean blood pressures than Group II. The mean systolic pressure of Group I was 154, as compared with 170 for Group II. The diastolic pressure for Group I was 95, as compared with 102 for Group II. Both groups tended to be high in respect to the stated standards. The differences in blood pressure tended to support the view of the above authors, who reported a steady, though not great rise in blood pressure with age.

Table XVII gives the diastolic and systolic blood pressures for the best and poorest adjusted individuals of the two age groups. In Group I the best adjusted subjects had lower systolic and diastolic pressures than did the poorest adjusted. In Group II the poorest adjusted had a slightly lower mean systolic blood pressure. The systolic pressure for the poorest adjusted was 168 as compared with 174 for the best adjusted. In Group II, however, the best adjusted were lower than the poorest adjusted in mean diastolic blood pressure 103 to 115.

In Group I there appeared a tendency for emotional adjustment to accompany blood pressure. In Group II this trend did not appear with systolic pressure, but did occur with diastolic blood pressure. On the whole the findings showed a tendency for the best adjusted subjects to have lower blood pressures.

TABLE XXVI

SYSTOLIC BLOOD PRESSURE (mm); AND DIASTOLIC BLOOD PRESSURE IN THE TWO GROUPS

	Group I			Group II		
	N	Mean	SD	N	Mean	SD	"t"
Systolic Blood Pressure	20	154	30.5	22	170	32.4	1.61
Diastolic Blood Pressure	20	95	16.6	22	102	20.1	1.20

TABLE XXVII

SYSTOLIC BLOOD PRESSURE (mm); AND DIASTOLIC BLOOD PRESSURE (mm) IN THE BEST AND POOREST ADJUSTED SUBJECTS

	Best Adjusted		Poorest Adjusted		
	Mean	SD	Mean	SD	"t"
GROUP I					
Systolic Blood Pressure	139	36.6	179	31.7	1.65
Diastolic Blood Pressure	91	25.7	104	12.7	.91
GROUP II					
Systolic Blood Pressure	174	29.8	168	25.4	.31
Diastolic Blood Pressure	103	14.0	115	19.2	1.01

CHAPTER IV

THE QUESTION OF INFLUENCE OF RACE OR COLOR ON THE FINDINGS

The subjects employed in this investigation were Negro women. The question, therefore, arises as to whether or not the race or color of the subjects has been a factor in the findings reported. In order to determine the effect of race or color, it would be necessary to have a sample of white women, matched for age, intelligence, socio-economic status, educational attainment, and living in the same type of community. Such a matched sample was not available. The several kinds of data afforded by this study will, therefore, be reviewed for such meager evidence on racial influence as may be found.

In reference to the data obtained from the Activity Inventory, it was not fruitful to compare the performance of the present homogeneous sample with the heterogeneous sample employed by Cavan and associates (7) to determine if there were differences related to color or race. Generally speaking, the persons of the present sample came from low socio-economic and educational levels, neither of which was comparable with the conditions of the persons used as subjects in the other study.

The present study is also based on dietary data. The Food and Nutrition Board of the National Research Council (29) makes certain recommendations concerning the minimum daily intake of calories, proteins, vitamins, and minerals for adequate nutrition. Compared with these recommendations, the majority of women in the present study were considerably below standard in all respects. It might be that through its effect on income and economic status, race has indirectly affected the nutritional status of these women.

It is known that low income groups tend to be low in respect to health status. It cannot be said from the data available for the women in this study how their health status compares with that of any other groups, or of women in general.

There are Rorschach studies that have employed Negro and white subjects, who have been matched for certain variables. Three such studies have been found.

Abel Piotrowski, and Stone (1) compared Rorschach responses of Negro and white morons. These investigators found that the Negro girls gave more Movement responses than did the white girls. They interpreted their findings to indicate that the Negro girls were more flexible than white girls, and that white girls were more restricted in responsivity and showed more negativism than the

colored girls.

Hunter (13), in an investigation designed to evaluate racial differences in response to the Rorschach test, employed 100 subjects each from white and Negro populations in New York City in the summer of 1934. A person having any Negro blood in his veins qualified for this sample as being a Negro. The author judged most Negro subjects to be from 50 to 75 per cent Negroid, while some subjects claimed to be 100 per cent Negroid. Of the 100 members of the Negro population, 50 per cent were serving as Civil Works Administration employees, working as clerks, teachers, or recreation workers. Thirty per cent of the Negro population were temporarily unemployed professional persons, while the remaining 20 per cent were unemployed persons, answering posted requests for subjects in a YMCA and the Urban League.

Of the 100 white subjects, 94 were students at Teachers College, Columbia University, while the 6 were unemployed professional persons.

The Otis intelligence test (20) was administered to all subjects. The range on this test for the White group was 6-72, with a mean of 42.84. The Negro range was 16-75, with a mean of 39.53. The Rorschachs were administered by the same examiner to all of the white group and to all but 16 of the colored group. The

remaining 16 Rorschachs were administered to the colored group by a Negro. It was reported that these 16 Negro subjects gave the same expectancy of responses as did the subjects who were tested by the white examiner. The Negro subjects were tested in familiar surroundings, such as the YMCA and the Urban League. No subject was coerced.

The major finding of Hunter centers around fewer color responses yielded by the white group, concerning which she states, "Not only were more of the white group introversive, but they showed a degree of introversity 16 per cent higher on the average than the average of the Negro group."(p. 187) By the same finding the author interpreted the Negro group to be more extratensive, stating, "Moreover in extratensivity Negroes exceeded the white group by 14 per cent." The data presented by Hunter were only summarized and not presented in detailed form.

A study reported by Stainbrook and Spiegel(25) presented Rorschach findings on Southern Negro and white high school and college students. The high school sample consisted of 40 white and 40 Negro subjects each from the tenth grade class of two high schools in the same city. In the college samples there were 45 Negro and 45 white subjects. The white subjects were from the sophomore

and junior classes at a large university in the South. The Negro subjects were sophomores from a junior college in the same city. The mean score for the white high school subjects on the Otis was 41, as contrasted to 27 for the colored. The white college students had an average IQ of 120, while the Negroes had a mean IQ of 99. The Rorschachs were administered according to directions given by Harrower-Erickson (12) and scored by the Klopfer (16) system. All Negro tests were administered by a Negro.

For the secondary students there were no significant differences in regard to F, W, Original responses, C and A. There were significant differences in regard to R, D, S, FC, and CF. "The occurrence of all these indices except for FC was differentially less for the colored group." The authors sum up their findings for the high school groups in this manner, " . . . the colored high school pupils could be considered as less fluid or less differentiated in association than the white. The authors feel the colored high school subjects may be more cautious and deliberate in reaction to color-areas." (p. 111). Still in reference to the secondary groups the authors state, "The Rorschach responses would indicate also that the colored secondary students were more emotionally stable and less impulsive than the white

high school students. There was also less Rorschach evidence of anxiety in the colored high school, as compared with the white secondary group"(p.112).

Stainbrook and Spiegel reported that at the college level the differentiating signs were less R, D, O, M, sum C, and CF for the colored subjects. The findings concerning the college groups were interpreted as follows: "The college colored group also showed more associative paucity or rigidity than the white college students. The university whites could be considered as displaying a more highly differentiated and, perhaps, more daring intellect than the college Negroes, and the general personality resources of the college colored group were indicated as being less adequate than the white college students. The Rorschach also pointed to a greater immaturity in the colored college students than in the college whites. Like the colored students in the high school comparison, the college Negroes could be described in Rorschach terms as evidencing less emotional stability than the white university students."(25, p. 114).

In regard to the interpretations made by Stainbrook and Spiegel certain observations occur. If it were to be assumed that the two Negro groups were cross sections from the same relative population, it seems from the interpretation by the authors, that there was a tendency

for Negroes to display less maturity and stability with age. A simpler explanation would seem to indicate that the differences in findings in regard to maturity and stability might have been due to sampling. The fact that a great number of the white college students in the sample came from the North might have been another important variable, and might in part have accounted for some of the differences in maturity and stability between the two groups. The vast cultural chasm separating Negro and white students in the region in which the study was conducted is a factor that cannot be overlooked.

From the foregoing studies the effect of race or color alone on Rorschach test performance does not appear to be clearly demonstrated. It would seem that race or color would make a major difference in test findings only when the cultural background and present environment of the group tested differed markedly from the accepted norm.

The effect of the acculturation process upon Rorschach test performance has been demonstrated to an extent by Hallowell (11). Hallowell employed as subjects two groups of American Indians, representing populations of differing degrees of acculturation. The group who were more isolated from present day American culture tended to be more dominated by fantasy, suspiciousness,

and introversiveness. The author believed that these findings were the result of living in a culture that emphasized fantasy rather than reality. The group from the more acculturated population responded better and appeared to be more extrotensive. In still another study the findings for the Alorese (9) were much different than have been reported from citizens of America. For the natives of Alor the relatively free expression of emotion, as revealed by color responses on the Rorschach, was normal in that culture, whereas in America such expression would be at variance with existing norms.

It may well be that differences reported between Negro and white samples may in the main be due to cultural differences. There appear no consistent findings in the studies reviewed that may be interpreted to be due to race or color of the subjects. It would seem that the Negro women employed in the present study expressed their needs, fears, and level of adjustment in the same manner as would a sample of any other group of women taken from the same locality, and of the same age range and cultural and educational opportunities.

CHAPTER V

SUMMARY

1. Findings are reported for 45 Negro women between the ages of 50 and 83 residing in Lansing, Michigan.

2. The subjects had previously been used in a nutritional study under the direction of Dr. Margaret A. Ohlson, Head of the Department of Foods and Nutrition, Michigan State College, who made available to the writer data obtained in her study.

3. The purpose of the present investigation was to make a personality study of the sample. The study was designed to provide answers in part to the following questions: (a) How do Rorschach findings in the present sample compare with findings reported for other samples of normal adult and aged subjects? (b) Are there differences related to age in the personality structure of the present sample as indicated by the Rorschach? (c) Is the health status of the sample related to age differences, and to level of emotional adjustment? (d) Is physical and social activity related to age differences, and to level of emotional adjustment? (e) Is dietary status related to age differences, and to level of emotional adjustment? (f) Is there relationship between

socio-economic factors and level of emotional adjustment?

4. The Rorschach test and an activity inventory were administered to each subject. In addition, socio-economic data, results from dietary studies, records of medical examinations, and health evaluations for the subjects were made available by the Department of Foods and Nutrition, Michigan State College.

5. The Rorschach findings in the present sample were compared with those reported by Beck and colleagues on 157 employees of the Spiegel Mail Order House in Chicago, and with those reported on 20 aged white males of the Oak Forest, Illinois, Infirmary, by Chesrow and associates.

6. Findings are reported on the various Rorschach scoring variables. The samples of older individuals were found to be significantly less responsive than the normal adult sample reported by Beck. The members of the present sample showed a tendency not to respond to small detail. The present sample showed significantly less Z-score activity than the normal adult group. There is evidence of a decline in M responses with age, however M responses were quite unevenly distributed in the present sample. Emotional maturity, as indicated by color responses, appeared further advanced in the aged

sample than in the sample of normal adults. There was no evidence that there was a return to childhood lability in the aged persons of the present study. Anxiety and insecurity, as portrayed by Y and V responses, appeared greatly reduced in old age. The Vista response was for practical purposes non-existent in the present sample. In the framework of Rorschach interpretation there was no drop in the accuracy of form perception with age. With the A response as its indicator, stereotypy did not increase with age. With age there appeared a definite increase of concern in body functioning, and lessening concern for other persons in the environment. In the present sample the number of Anatomy responses was relatively high. The Popular response appeared to be little influenced by aging.

7. The sample was divided into two groups, Group I, ages 50-59, and Group II, ages 60-83. This was done to determine if there were any differences in Rorschach performance related to the aging processes. It was found that those persons comprising Group I, had significantly more Anatomy responses than the older subjects in Group II. This was believed to be related to physiological and psychological changes of menopause which were occurring or had just occurred in the women of Group I. Along with the increase in An responses, was a decrease

in Whole-Human responses. Findings for Group II indicated that this tendency corrected itself with aging.

8. Three raters rated the Rorschach protocols of Group I and Group II separately. The raters were asked to select from each group the five records which the rater judged to be indicative of the best adjustment in the group and the five records indicating the poorest adjustment in the group. The percentage of agreement for rating the records in Group I was 83; while that for the Rorschachs in Group II was 60.

9. Findings obtained by an Activity Inventory developed by Cavan, Burgess, Havighurst, and Goldhamer, revealed that the subjects of Group I had a significantly higher mean score on the inventory. The subjects of the two groups who were rated as being better adjusted in terms of their Rorschachs, were also better adjusted in terms of the Activity Inventory.

10. The relationship of the following socio-economic factors on personality adjustment were investigated: Marital status, home ownership, number of children born to the woman, length of time the woman had lived in Lansing, yearly income, and educational attainment. Taken singularly none of these factors appeared to differentiate between women of good and poor adjustment as indicated by the raters of the Rorschach.

11. From the medical examination, each subject was given a general health rating. It was found that the younger age group, Group I, had on the average a better health rating. The best adjusted subjects of each of the two groups received better health ratings than did the poorest adjusted persons in their respective groups.

12. There were found age differences in respect to blood pressure, as the younger age group had a mean systolic and diastolic blood pressure lower than that of the older age group. On the whole there was a tendency for the members of the sample rated as being of best adjustment, to have lower blood pressures than those subjects rated as being of poorest adjustment.

13. Dietary differences between the two age groups occurred for the most part in caloric intake, and in the vitamins and minerals that are found in the diet in relation to calories. In respect to these nutrients the younger age subjects had a higher intake. These nutrients included proteins, phosphorus, and thiamine. For the most part the best adjusted individuals of each group exceeded the poorest adjusted in the intake of calories, vitamins, and minerals.

BIBLIOGRAPHY

1 Abel, T. M. and Piotrowski, Z. Responses of Negro and White Morons to the Rorschach Test. Amer. J. Ment. Def., 1944, 48, 253-257.

2 Beck, Samuel J. Rorschach's Test I. Basic Processes. New York, Grune and Stratton, 1944.

3 _____, Rorschach's Test I. Basic Processes. (2d Ed) New York, Grune and Stratton, 1949.

4 _____, Rorschach's Test II. A variety of Personality Pictures. New York, Grune and Stratton, 1947.

5 Beck, Samuel J., Rabin, Albert I., Thiesen, Warren G., Herman, and Thetford, William N. The Normal Personality as Projected into the Rorschach Test. J. Psychol., 1950, 30, 241-298.

6 Best, Charles H. and Taylor, Norman B. The Physiological Basis of Medical Practice. (3d Ed) Baltimore, Williams and Wilkins, 1942.

7 Cavan, Ruth S., Burgess, Ernest W., Havighurst, Robert J., and Goldhamer, Herbert. Personal Adjustment in Old Age. Chicago, Science Research Associates, Inc., 1949.

8 Chesrow, Eugene J., Wosika, Paul H., and Reinitz, Arthur H. A Psychometric Evaluation of Aged White Males, Geriatrics, 1949, 4, 169-177.

9 Dubois, Cora A. The People of Alor. Minneapolis, University of Minnesota Press, 1944.

10 Ford, Mary. The Rorschach Test With Children. Minneapolis, University of Minnesota Press, 1946.

11 Hallowell, A. I. Acculturation Processes and Personality Changes as Indicated by the Rorschach Technique. Rorschach Res. Exch., 1942, 6, 42-50.

12 Harrower-Erickson, M. R. Direction for Administration of the Rorschach Group-Test. J. Genet. Psychol., 1943, 62, 105-117.

13 Hunter, M. (Sicha) Responses of Comparable White and Negro

Adults to the Rorschach Test. J. Psychol., 1937, 3, 175-182.

14 Kaplan, O. Mental Disorders in Later Life. Stanford University Press, 1945.

15 Keys, Ancel, Brozek, Josef, Henschel, Austin, Mickelsen, Olaf, and Taylor, Henry L. The Biology of Human Starvation. Minneapolis, University of Minnesota Press. 1950.

16 Klopfer, Bruno. The Rorschach Technique. New York, World Book Co., 1942.

17 Klopfer, Walter G. Personality Patterns of Old Age. Rorschach Res. Exch., 1946, 10, 145-166.

18 Lawton, G. New Goals for Old Age. Morningside Heights Columbia University Press, 1943.

19 Ohlson, Margaret A. Dietary Practices of 100 women 40 to 75 Years of Age. J. Amer. Diet. Assoc., 1948, 24, 284-291.

20 Otis, Arthur S. Otis Self-Administering Test, Manual of Directions and Key (Revised). New York, World Book Co., 1928.

21 Prados,M. and Fried, E. G. Personality Structure of the Older Age Groups. J. Clin. Psychol., 1947, 3, 113-120.

22 Proudfit, Fairfax T. and Robinson, Corinne H. Nutrition and Diet Therapy. (9th Ed). New York, Macmillan Co., 1946.

23 Rabin, Albert I. and Beck, Samuel J. Genetic Aspects of Some Rorschach Factors. Amer J. Orthopsychiatry, 1950, 20, 595-599.

24 Rorschach, H. Psychodiagnostik. Bern, Huber, 1932. English transl. by Lemkau, P., and Kronenberg, B. New York, Grune and Stratton, 1942.

25 Stainbrook, E. J. and Spiegel, P. S. A Comparative Rorschach Study of Southern Negro and White High School and College Students. J. Psychol., 1944, 17, 106-116.

26 Stieglitz, E. J. Geriatric Medicine. Philadelphia, W. B.

Saunders Co., 1943.

27 Stone, Calvin P. and Taylor, Donald W. Annual Review of Psychology. II, Stanford, Cal., Annual Reviews, Inc., 1951

28 Wechsler, David. The Measurement of Adult Intelligence. (3rd Ed). Baltimore, Williams and Wilkins, 1944.

29 . . . ., Recommended Dietary Allowances. Washington, D.C. Food and Nutrition Board, National Research Council, 1948.

APPENDIX A

Iowa State College

EVALUATION OF HEALTH

Number_____

Age_____

Major disturbances

1. Poor reproductive record
2. Broken bones
3. Digestive disorders
4. Circulatory disorders
5. Hepatic disorders
6. Major operations
7. Major nervous disorders

Minor disturbances

1. Excessively overweight or under weight
2. Fair reproductive record
3. Difficulty with menopause
4. Broken bones
5. Loss of appetite
6. Tires easily
7. Frequent headaches
8. Difficulty with mastication
9. Minor digestive disorders
10. Sore mouth
11. Skin rash, running sores
12. Minor circulatory disorders
13. Pain in joints
14. Diseases of short duration
15. Nervous disorders
16. Minor respiratory disorders
17. Minor operations
18. Thyroid (under control)

Total

Evaluation

Any minor disturbance which becomes intensified to the point where, in the opinion of the interviewer, it may

bear the same relation to general health as does the so-called major disturbances should be rated as a major disturbance.

Rating Scale

Under 50 years	Over 50 years
0 to -5 = good	0 to -7 = good
-6 to -10 = fair	-8 to -15 = fair
over -11 = poor	over -15 = poor

INSTRUCTION SHEET FOR EVALUATION OF HEALTH

Subtract 3 for each item in the major category
Subtract 1 for each item in the minor category

1. Reproductive Performance

   a. Good - Normal pregnancies - include premature babies of less than one month

   b. Fair - No pregnancies or 1 miscarriage plus normal pregnancies

   c. Poor - Abnormal pregnancies such as stillbirths, repeated miscarriages and infant death from causes possibly related to poor fetal nutrition

2. Broken bones - Major disturbances if bones broken repeatedly or if healing is accompanied by complications; minor if broken bones occur in childhood or early adulthood and healing without complication

3. Hepatic Disturbance - Gall bladder, jaundice, etc.

4. Circulatory Disturbance - Major, if high or low blood pressure, heart disease, shortness of breath, excessive nose bleeding, etc., minor, anemia controlled by medication, and varicose veins.

   If blood pressure available from medical

examination

-1 if over 150/80
-3 if over 170/90

5. Major operations include hysterectomy before menopause and resection of any portion of the gastro-intestinal tract; minor operations include appendectomy tonsilectomy, thyroid, etc.

6. Digestive disturbances - Major if ulcers; minor if constipation or gas

7. Nervous disorders - Major if multiple sclerosis or if food is refused over long periods of time, otherwise minor

8. Pain in joints to include rheumatism, swelling of joints, backaches, etc.

9. Disease (item under minor disturbance) equal only -1 unless one or more of them are of unusual severity or of long duration, in that case, list diseases as -3. Diseases include chicken pox, diphtheria, polioyelitis, etc.

10. Minor respiratory disturbances include asthma, sinus colds, pleurisy, and bronchitis.

11. Weight - if underweight 15% = -1
overweight up to 29% = -1
beyond 30+% = -3