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To the Graduate Council:

I am submitting herewith a dissertation written by Landon Crocker Peoples entitled "A Study of Important Stimuli in the Lives of Men with Lung Cancer." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.

G. R. Pascal, Major Professor

We have read this dissertation and recommend its acceptance:

W. O. Jenkins, M. H. Moore, L. M. DeRidder, C. H. Swensen

Accepted for the Council:

Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

May 29, 1961

To the Graduate Council:

I am submitting herewith a thesis written by Landon Crocker Peoples entitled "A Study of Important Stimuli in the Lives of Men with Lung Cancer." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.

O. M. Parker
Major Professor

We have read this thesis and recommend its acceptance:

W. O. Jenkins

Merritt H. Moore

Lawrence M. Lefidder

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Accepted for the Council:

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Acting Dean of the Graduate School

A STUDY OF IMPORTANT STIMULI IN THE LIVES OF MEN WITH LUNG CANCER

A Dissertation
Presented to
the Graduate Council of
The University of Tennessee

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

by
Landon Crocker Peoples

June 1961

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CHAPTER I

INTRODUCTION

Except in specified instances where the etiology is known, the growth of cancerous tissue in humans is an unsolved problem (Cutler, 1954). Most of the investigations in this area have been medical, physiological, or biochemical. There are, however, enough studies of a psychological nature (to be cited in a later section), with sufficiently intriguing results, to warrant further research into the possibility of a relationship between psychological variables and the incidence of human cancer. The present study is concerned with this relationship.

This investigation approaches the growth of cancerous tissue as a deviancy in the response of the human organism, as stated by Pascal (1959) in his concept of a "Psychological Deficit". He writes (1959, p. 17), "It may be that the malignant proliferation of cells in cancer is, in some individuals, a behavioral deviation in this sense." For Pascal, deviant behavior is a response to stressful stimuli in the environment. These stimuli acquire their stress value from experiences of the subject with similar stimuli in the past history of the subject. This relationship between current stimuli and the past history of the subject is systematically stated in a later work by

Pascal & Jenkins (1961). This systematic approach by Pascal (1959) and later by Pascal & Jenkins (1961) emphasizes the importance of early experiences with important people in the environment (parents, siblings, etc.) on later behavior. If the development and proliferation of neoplastic tissue can be considered a response of the organism, it follows, then, that it may be related to the characteristics of stimuli (parents, siblings, etc.) impinging on the subject early in life.

The purpose of the present investigation is to study systematically, by means of scales developed by Pascal & Jenkins (1961), the characteristics of important people encountered in the first ten years of life by subjects with cancer of the lung, and to make a comparison between these and matched control cases. In addition, the characteristics of important people encountered at the present time by men with cancer of the lung will be studied by means of the Pascal-Jenkins Scales, and a comparison made with matched control cases. Finally, the cancer and control groups will be compared on the basis of certain standard psychological tests.

History

There has been only a modest amount of work done on the psychological aspects of cancer. The reader will find

a review by Leshan & Worthington (1956) which deals with work done as far back as 1844, and one by Perrin & Pierce (1959) which does a somewhat better job with contemporary material. The present report will include these two reviews as well as a number of reports which they did not deal with.

The studies to be reported cover a wide range of research sophistication, going from rigid, well controlled experimentation to speculation with little if any supporting evidence. One of the more striking examples of the latter is a monograph by Simmons (1956) in which he states "...all cancer is induced by emotional stress and that glandular malfunction is the intermediary between emotion and proliferation at the cancer site." (1956, p. 2) He does modify this stand somewhat as he goes on and finally states that while prolonged overproduction of hormones alone might be insufficient to induce cancer, a psychic trauma coming on top of such a precarious balance could be the trigger needed to set off a cancerous growth. The psychic trauma might be in the form of death of a loved one (an idea advanced by a number of authors), sudden financial collapse, or some equally devastating setback.

Workers in the field of cancer have been strongly interested in the possibility of emotional etiological factors. Kowal (1955) reports on articles written in the

18th and 19th centuries in which physicians claim to notice a relation between cancer and despair although they did not have our present day knowledge of personality dynamics and ability to investigate such problems. Although he gives no figures, a "significant number" of cancer patients are said to have suffered the loss of a loved one at some time before developing cancer.

A number of investigators have attempted to determine the psychological characteristics of cancer victims, with most of the work having been done on women with cancer of the breast and/or cervix. Bacon et al (1952) studied 40 women with cancer of the breast by means of case histories, using no controls. They concluded that 35 of these 40 women showed a masochistic character structure which was expressed in inhibited sexuality, inhibited motherhood, inability to discharge or deal appropriately with anger, an unresolved hostile conflict with mother, handled through denial and unrealistic sacrifice, and finally, delay in seeking treatment. They felt that they developed a "feel" for a "malignant history", and that they were observing not a post-cancerous reaction to cancer but a lifelong pattern of behavior.

Tarlau & Smalheiser (1951) administered the Rorschach and the Draw-A-Person Test to 22 women, half with cancer of the breast and half with cancer of the cervix.

They concluded that both groups had experienced similar mother dominance which had resulted in rejection of the feminine role, and, on the basis of the D A P and interview data, that women with cancer of the cervix demonstrated greater sexual maladjustment than those with cancer of the breast.

Wheeler & Caldwell (1955), in a similar study but one which was much more carefully designed, employed three groups of subjects, 20 with cancer of the breast, 20 with cancer of the cervix, and 20 controls. They are not specific as to how these subjects were matched. They used the Rorschach, the D A P, the Kent E G Y, a Family Preference Scale, the Rosenzweig Picture-Frustration Test, and a "directed interview". The Rorschach and interview data revealed slight differences between the cancer groups and the control group, although the authors are careful to point out that these are nothing more than suggestions. They concluded, on the basis of Rorschach data, that women with cancer of the cervix were less controlled in their sexual and emotional responsiveness than women in the other two groups. Interview data suggested more early childhood deprivation among experimental than control subjects. They interpret their own findings with commendable caution and suggest that early childhood environment, parental attitudes, and sexual attitudes and behaviors would be fruitful

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areas for further work.

Rezinkoff (1955) also conducted a reasonably well-executed investigation of the psychological factors in breast cancer using 25 subjects with malignant tumors, 25 with benign tumors, and 25 with no demonstrable tumor. To each of these he administered a questionaire, a sentence completion test, and the T A T. His findings were that malignant patients revealed greater sexual maladjustment than the other two groups, in terms of sexual confusion, rejection of heterosexuality, greater marital discord, and greater fear of pregnancy and childbirth. The malignant patients also reported a greater number of sibling deaths at birth, which suggested a possibility of constitutional deficiencies.

The next two studies to be considered deal with different types of cancer than the prededing ones. Greene & Miller (1958), in a rather haphazard manner, report some of their observations on a group of 33 children and adolescents suffering from leukemia. They report that one of their most important findings was that each subject suffered the loss of an important relationship, or the threat of such loss, within two years preceding the onset of leukemia. In addition, the mother "...had usually been depressed."

Leshan & Worthington (1956) conducted a somewhat

more rigorous investigation than the previous one in that they did employ controls. They worked with 152 subjects with cancer of various types and 125 controls who had no demonstrable cancer. To each one they administered the Worthington Personal History, which is a projective test in the form of a questionaire. Three factors separated the groups: (1) loss of an important relationship at some unspecified time before the diagnosis of tumor (experimental 72%, control 12%); (2) inability to express hostile feelings toward other people (experimental 47%, control 25%); and (3) tension over the death of a parent, which was often an event that had occurred in the distant past (experimental 28%, control 11%). In order to check these findings further they examined 28 additional Personal History protocols and attempted to predict which subjects had neoplastic disease solely on the basis of the presence or absence of the three factors cited above. They report 24 correct identifications out of the 28 cases, which is a fairly impressive performance.

A number of investigators have attempted to assess the emotional reactions of cancer patients. These reactions as reported in the literature virtually cover the entire field of psychopathology and range in degree from mild anxiety and depression to psychotic reactions of various types. Most of the authors speak in general terms,

and there has apparently been very little systematic investigation in this area. Blumberg (1954) is one of the few who have conducted reasonably rigorous research with cancer patients, each of whom had been informed of his diagnosis. He was primarily concerned with differentiating between patients with slow-growing cancers and those with fast-growing cancers. He studied 50 cancer patients, 25 of whom had rapidly progressing neoplasms and 25 of whom had slowly progressing neoplasms on the basis of medical criteria. He administered the Minnesota Multiphasic Personality Inventory (MMPI), the Wechsler-Bellevue Intelligence Test, and the Rorschach. He found no significant difference on the Wechsler, and a significant difference on only 1 of 15 Rorschach signs, the one which indicates use of shading. This was more prevalent in the fast cases. With the M M P I he was able to differentiate the two groups most successfully. The fast patients were found to have greater "defensiveness" (a desire to look good on the test), more anxiety, and less ability "...to defend themselves against anxiety or to reduce their tensions through action." Use of these three M M P I signs enabled Blumberg to label 78 per cent of the 50 cases correctly, 88 per cent of the slow group and 75 per cent of the fast group.

Klopfer (1954) has also worked in the area of detecting speed of neoplastic growth by means of a psycholog-

ical test, the Rorschach. From each test record he makes an estimate of "ego strength", which is a combination of relatively unimpaired reality testing and minimal ego defensiveness. On the basis of this estimate he decides whether the individual is normal, neurotic, borderline, or psychotic. He has found that normals tend to have slow-growing cancers, and has explained that they are comfortable, well-adjusted people who can deal adequately with any aspect of reality. He has found that psychotics also tend to have slow-growing cancers, being relatively free from tension in their psychoses. On the other hand, neurotics are tension-ridden and "ego-defensive" individuals who almost invariably have fast-growing neoplasms. He has had much less success in determining rate of neoplastic growth in borderline patients. He writes (1954, p. 65), "It is hard to distinguish whether the decompensation of the defenses has already reached a point where the people are comfortable with their psychosis, or whether there is from the decompensated ego defenses enough scar tissue left to irritate them sufficiently so that their cancer will grow fast."

Abrams & Finesinger (1953) report on 60 patients with varying types of cancer and all with knowledge of their condition. They found that, as they expected, a "great deal" of fear was evident. In addition, 93 per cent

of the subjects gave some indication of guilt concerning their cancer. They felt that either they themselves or someone else was responsible for their cancer, seemed to feel a need to find a cause for their illness. The major reactions to their guilt feelings appeared to be: (1) denial of symptoms and delay in seeking medical aid; (2) stimulation of attitudes of inferiority, inadequacy, dependency, and feelings of rejection; and (3) inhibition of their ability to communicate.

Shands et al (1951) report very much the same findings, although they devote more attention to the various defense mechanisms employed. Among these are suppression, denial, dissociation, regression, conversion, and sublimation. They also mention psychotic depressive and paranoid reactions in cancer patients, although they cite no evidence as to the incidence of any of these manifestations.

McGovern et al (1959) describe two cases of lung cancer in which mental symptoms occurred prior to the diagnosis of cancer. These cases were not complicated by cerebral metastasis. The psychiatric syndrome consisted of depressive symptoms, intellectual impairment, and "alterations in consciousness", all of these components tending to be variable in degree and fluctuating in their course. This fluctuation and variability suggested an underlying biochemical disorder which other authors report might be

associated with liver dysfunction. The present authors disagree, although they do not state clearly what their opinion is regarding the basis of the observed psychiatric condition.

The present investigator agrees with Perrin & Pierce (1959), who in their review are generally rather critical of much of the work that has been done in the area of the psychological aspects of cancer. A great deal of it has been anecdotal or speculatory in nature, and where control groups have been used the methodology has often been questionable. For example, the validity of many of the psychological instruments and techniques employed is open to serious question. Furthermore, many investigators and other workers in the field have accepted certain hypotheses which still await verification. Common to many of the studies cited has been at least the implication that early life experiences may be important in the later development of cancer. The present study is an attempt to investigate these experiences more systematically than has been done before by following a strict behavioral approach.

CHAPTER II

PROCEDURE

The subjects in this investigation, hereafter to be referred to as Ss, consisted of 10 white, male lung cancer patients, 9 of whom came from the V A Hospital, Jackson, Mississippi,[1] and one from the V A Hospital, Atlanta, Georgia, and 10 white men without cancer, 3 of whom cane from the Jackson V A Hospital, 2 from the Atlanta V A Hospital, and 5 from Knoxville, Tennessee. An effort was made to select control Ss who, if hospitalized, had no obvious psychosomatic involvement and who were functioning reasonably well in their environment. The two groups were matched on the basis of race, sex, age, education, M A, and socioeconomic status. (See Table I.)

The principal instrument used in this study was the Pascal-Jenkins Behavioral Scales (Pascal & Jenkins, 1960). These scales afford a means of quantifying behavior, albeit a rough one, and require a very considerable amount of historical information concerning each S. In order to obtain this information each S was interviewed extensively. The interviews ranged from 12 to over 20 hours in total

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[1]Dr. J. V. Cockrell, Director of Professional Services at the Jackson V A Hospital, selected nine of the experimental Ss for this study.

TABLE I

POPULATION CHARACTERISTICS

	Experimental Subjects			
Pair	Age	Education	M.A.	Vocation
1	66	12	14+	Farmer (Retired)
2	62	14	14	Cotton Grader (Retired)
3	64	8	13	Laborer (Retired)
4	72	8	14	Mail Carrier (Retired)
5	43	17	14+	High School Principal
6	63	8	14+	Painter (Retired)
7	63	6	13	Barber (Retired)
8	43	12	14	Carpenter
9	66	12	14	Railroad Conductor (Retired)
10	65	6	13	Farmer (Retired)
Mean	60.7	10.3	13.7	
Range	43-72	6-17	13-14	

TABLE I (continued)

Control Subjects				
Pair	Age	Education	M.A.	Vocation
1	68	6	13	Tractor Operator (Retired)
2	48	14	14+	Office Manager
3	66	5	11	Laborer (Retired)
4	72	6	14+	Mail Carrier (Retired)
5	40	17	14+	Minister
6	64	6	13	Nursing Assistant (Retired)
7	72	4	14	Barber (Retired)
8	44	12	14	Carpenter
9	72	6	14+	Mail Clerk (Retired)
10	64	88	13	Textile Worker (Retired)
Mean	60.8	8.4	13.3	
Range	40-72	4-17	11-14	

length and were broken into sessions of not more than 1½ hours duration. In each case, the interview was conducted so as to elicit specific behavioral incidents from the S, concerning his current situation as well as the first 10 years of his life. "A BI (behavioral incident) is a stimulus-response sequence in gross human behavior which endures so long as there is no radical change in the stimulus situation as defined by the responses of the subject to it." (Pascal & Jenkins, 1960, p. 59) Thus reports of specific behavior are necessary. For example, suppose we are interested in the variable "displays of affection" on the part of his wife toward the S. The interviewer would ask him, "When was the last time your wife kissed you?" He might reply, "When I left home yesterday to come to the hospital." The interviewer would then say, "What happened?" S might reply, "I started toward the door, I called to her, 'Honey, I'm going,' and she said, 'Wait, let me kiss you goodbye,' and walked over to me and put her arms around me and kissed me." The interviewer would say, "What happened then?" The S might reply, "I hugged and kissed her too and went on out to the car while she stood in the door and watched." A sufficient number of such incidents would be obtained to permit the interviewer to rate the variable with a fair degree of certainty.

The purpose of eliciting behavioral incidents was

twofold: first, it was felt that by doing this, the S's judgments and opinions would be circumvented and a reasonably realistic picture would emerge, and second, ratings on the Scales can be carried out only on the basis of specific behaviors. That is, judgments and opinions from the S are not acceptable data for purposes of ratings on these Scales.

As indicated earlier, the present study investigated Ss' relationships with important people in the first ten years of life and in his current situation as well. The latter is referred to as "cross-sectional behavior" and encompasses behavior of the various people in the S's life at the time he was interviewed and for approximately two years preceeding the interviews.

The Scales consist of an extensive listing of known stimuli which impinge on the S, such as Mother, Father, Siblings, Job, etc., and responses which the S makes to these stimuli. In addition, one of the Scales is given over to so-called "Operant Responses", which are personal habits of the S such as Oral Habits (eating, drinking, etc.), Sleeping, Cleanliness, and so on. For each of the known stimuli there is a list of behavioral variables, such as "frequency of contact", "displays of affection", "religious behavior", and so one which are to be rated. (See Table II.) The ratings are assigned on the basis of how

TABLE II

VARIABLES ON WHICH STIMULI ARE RATED

1. Frequency of Contact
2. Activities
3. Displays of Affection
4. Providing Behavior
5. Restraints
6. Physical Punishment
7. Verbal Punishment
8. Intellectual Behavior
9. Status
10. Social Behavior
11. Religious Behavior
12. Physical Health
13. Compatibility
14. Role
15. Variability of Habitat
16. Sexual Behavior
17. Deviant Behavior

near the given behavior is to expectancy. If the behavior meets expectancy, it is given the rating "3". If it is clearly deviant, either too much or too little, it is given the rating "1". If it is somewhere between it is given the rating "2". If the stimulus is known to be or to have been absent, such as a mother who died at S's birth, all variables under that stimulus are rated "0". If there are no data at all on a particular stimulus, the variables for it are rated "N D". Thus we have a 5-point scale with expectancy receiving the rating "3", deviancy the rating "1", indeterminate behavior the rating "2", variables for stimuli which are known to be or to have been absent the rating "0", and variables for stimuli about which no information is given the designation "N D".

The ratings were performed by the investigator. He rated each stimulus across all Ss in order to avoid developing a "halo effect" for any single S. Another graduate student in Psychology at the University of Tennessee who is also trained in this technique then rated Mother and Father from the first ten years of life and Wife and Children from cross-sectional behavior on all Ss. This was done as a reliability check on the investigator's ratings.

The University of Tennessee Deprivation Scale (Pascal & Jenkins, 1960) was used in an effort to screen out potential control Ss who were functioning poorly. This Scale

consists of sixteen items relating to occupational, social, emotional and religious support or deprivation which a S is currently experiencing. The items are: employment, income, debts, job participation, job status, status--other, education, residence, church, other organizations, friends, relatives, parents, wife, children, and fear. A deprivation score is derived on the basis of one point for each item on which there is evidence of deprivation. Information to score each item is obtained by the behavioral incident technique. A low score indicates that the S is receiving adequate support from his environment while a high score suggests that he is being deprived of this support.

The Alcoholism Scale (Jenkins & Davis, 1957) was used to measure each S's alcohol consuming behavior. The Scale consists of eight items: amount consumed, variety of alcohol, rate of drinking, time between drinking periods, behavioral changes with drinking, conditions of drinking, after-effects of drinking, and long-range consequences of drinking. Specific behaviors are obtained to score each item on the scale, with a high total score indicating much alcoholic behavior and a low total score indicating little alcoholic behavior.

Two standard psychological tests were administered. All Ss were given the Bender-Gestalt as a rough check on

emotional status, and each experimental S was given the M M P I to permit a comparison with Blumberg's (1954) findings. These tests were administered in the standardized manner.

CHAPTER III

RESULTS

In the reliability study, the two raters were in agreement on 87% of the ratings, were one point apart on 12% of the ratings, and were two points apart on 1%. The data for the reliability study are to be found in Appendix IX. These findings are consistent with a number of similar studies which Pascal & Jenkins (1960) report.

A. Analysis of data.

As indicated earlier, an attempt was made to obtain and rate behaviors on seventeen behavioral variables for grandparents, parents, siblings, peers of both sexes, and older and younger people of both sexes for each S for the first ten years of life as well as for the present. This proved to be unfeasible since it was discovered that most Ss were unable to give sufficient information for a number of stimuli. For the first ten years, grandparents, female peers, and older and younger people of both sexes were discarded on the grounds of insufficient data. For the cross-sectional comparison, grandparents, parents, female peers, and older and younger people of both sexes were discarded on the same grounds. Appendix II contains the information on which the decision to discard the various

stimulus categories was based. The remaining stimulus categories for the first ten years were Mother, Father, Older Siblings, Younger Siblings, and Male Peers. For the cross-sectional comparison, the stimulus categories Wife, Children, Siblings, and Male Peers were used.

For each S, each of the seventeen variables was rated for each stimulus category. Then for every variable in each stimulus category a count was made of the number of times the rating of the control S exceeded that of the matched experimental S, the number of times there was a tie and the number of times there was a reversal. The binomial test was then applied to these data, with certain exceptions to be noted shortly, and a probability was determined for each variable in each stimulus category. For each variable in each stimulus category there was a maximum of 10 pairs of ratings, one for each pair of Ss. Within a given stimulus category, a variable was discarded if it contained more than 4 pairs in which at least one of the ratings was "no data".

A mean rating for each S was then taken for each stimulus category. A count was made of the number of times the control S's mean rating exceeded that of his matched experimental S, the number of times there was a tie and the number of times there was a reversal. The binomial test was then applied to these data for each stimulus and a

probability for each stimulus was obtained.

The ratings of each S on each variable was averaged across all stimulus categories, and a comparison of the resultant averages was made as described above. The same procedure was followed with the ratings of stimuli for both the first ten years of life and cross-sectional behavior. In addition, a comparison identical to that described above was made across each operant response category and average ratings over all response categories. Finally, average ratings for each S from the first ten years of life, cross-sectional behavior and operant responses were computed and a comparison was made of these ratings. The criterion for rejection in each case was that P be greater than .05.

The Wilcoxon Matched Pair Rank Test (Jenkins, 1956) was the other principal statistic used. While the binomial test measures only direction of difference, the Wilcoxon test takes magnitude of difference into consideration as well. It was used where appropriate. In addition, the t test for matched pairs (Edwards, 1959) was used in one instance.

B. Results from first ten years of life.

A table containing number of pairs rated and number of reversals for each variable across all stimuli is to be found in Appendix II.

The mean rating for each S on all stimuli is given in Table III. It is seen that father differentiates the groups significantly, with the control group having received higher or "better" ratings. The difference between the two groups closely approaches significance with mother and is in the same direction, that is, controls" mothers received higher ratings. The data from which Table III was drawn are to be found in Appendix III. Table IV, page 26, is merely an extension of Table III. The probabilities contained in Table IV are identical to those in Table III and are interpreted the same. Table V, page 27, depicts probabilities obtained for each variable in all stimulus categories as well as the overall P for each variable. It can be seen that Physical Health for mother is the only significant variable although Sexual Role for father approaches significance. The difference is again in favor of the control group. The absence of a P value for a given variable indicates insufficient data as described above. The data from which Table V is drawn are to be found in Appendix IV.

Since the groups differed significantly on father and approached significance closely on mother, it was decided to analyze their mean ratings separately. This analysis is presented in Table VI, page 28. It is seen that the groups differ significantly in each case, with the control group

TABLE III

MEAN RATING FOR EACH SUBJECT ON ALL STIMULI,

FIRST TEN YEARS OF LIFE

	1		2		3		4		5		6		7		8		9		10		P
	E	C	E	C	E	C	E	C	E	C	E	C	E	C	E	C	E	C	E	C	
Mother	1.7	2.9	2.6	2.7	2.3	2.8	2.5	2.7	2.6	3.0	2.7	2.6	2.6	2.9	2.7	2.9	2.1	2.9	2.5	3.0	.06
Father	2.4	2.8	2.4	2.4	2.4	2.6	1.3	2.1	2.3	2.9	2.9	2.5	2.6	2.7	2.2	2.7	1.9	2.8	2.4	2.6	.03
Older Sibs	2.7	2.6	0.0	N	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.7	2.8	2.8	2.6	0.0	0.0	2.9	2.8	3.0	.38
Younger Sibs	2.9	2.5	2.6	2.9	0.0	3.0	0.0	0.0	2.7	2.9	2.9	2.9	2.7	0.0	2.9	2.9	3.0	0.0	2.8	3.0	.50
Male Peers	2.6	2.8	2.4	3.0	2.7	2.7	2.5	2.8	2.4	2.9	2.9	2.9	2.7	2.3	2.3	2.7	2.9	2.9	2.9	3.0	.11
Totals	2.5	2.7	1.8	2.8	2.0	2.7	1.8	2.1	2.5	2.9	2.8	2.7	2.7	2.1	2.5	2.2	2.0	2.3	2.7	2.9	.172

TABLE IV

SUMMARY OF MEAN STIMULUS RATINGS,

FIRST TEN YEARS OF LIFE

Stimulus	Experimental	Control	P Value
Mother	2.4	2.8	.06
Father	2.3	2.6	.03
Older Sibs	2.4	2.5	.38
Younger Sibs	2.3	2.0	.50
Male Peers	2.6	2.8	.11
Totals	2.4	2.5	.172

TABLE V

P VALUES BY VARIABLES AND STIMULUS CATEGORIES,

FIRST TEN YEARS OF LIFE

Var.#	Mother	Father	Older Sibs	Younger Sibs	Male Peers	Total
1	.62	.17	.62	.73	.17	.172
2	.50	.62	.62	.50	.62	.500
3	.34	-	-	-	-	.145
4	.50	.62	-	-	-	.500
5	.50	.50	-	-	-	.377
6	.09	.36	-	-	-	.114
7	-	.34	-	-	-	--
8	-	-	-	-	-	--
9	.50	.36	-	-	-	.109
10	.27	.36	--	-	-	.254
11	.38	.36	-	.66	-	.500
12	.05	.62	-	.34	-	.377
13	.17	.25	.50	.75	.50	.275
14	.38	.06	.50	.75	.50	.275
15	.27	.27	.36	.62	-	.172
16	-	-	-	-	-	--
17	.38	.38	.64	.73	.62	.377
Totals	.06	.03	.38	.50	.11	.172

TABLE VI

MEAN RATINGS OF MOTHER AND FATHER,

FIRST TEN YEARS OF LIFE

	Mother		Father		Mother and Father Combined	
Pair	E	C	E	C	E	C
1	1.7	2.9	2.4	2.8	2.0	2.8
2	2.8	2.7	2.4	2.4	2.6	2.6
3	2.3	2.8	2.4	2.6	2.4	2.7
4	2.5	2.7	1.3	2.1	1.9	2.4
5	2.6	3.0	2.3	2.9	2.5	3.0
6	2.7	2.6	2.9	2.5	2.8	2.6
7	2.6	2.9	2.6	2.7	2.6	2.8
8	2.7	2.9	2.2	2.7	2.5	2.8
9	2.1	2.9	1.9	2.8	2.0	2.9
10	2.5	3.0	2.4	2.6	2.5	2.6
Totals	2.4	2.8	2.3	2.6	2.4	2.7
P	$< .01$		$\cong .01$		$< .01$	

having the higher mean ratings. P values were obtained by the Wilcoxon test. It was seen from Table V, page 27, that certain variables approached significance more closely with mother and father than did others. Mean ratings on seven of these variables were computed for mother and father with the results shown in Table VII. It is seen that variables number 1, Frequency of Contact, number 6, Physical Punishment, number 10, Social Behavior, number 13, Compatibility, and number 14, Sexual Role Appropriateness are all significant. In each case, the control group has the higher mean rating. The Wilcoxon test was used in this comparison also.

For reasons which will be amplified later, five controls were used who did not fit the criteria too closely. These five controls all had physical conditions which had psychosomatic overtones to a greater or lesser degree. The five remaining pairs were considered in a separate comparison of mean ratings on mother and father. A t test was used in this comparison. The results are given in Table VIII, page 31. It is seen that the subgroups are significantly different on all three aspects of this comparison, with the greatest difference arising from the combination of mean ratings of mother and father.

C. Results of cross-sectional comparison.

The mean rating for each S on all stimuli is found in

TABLE VII

MEAN RATINGS FOR MOTHER AND FATHER COMBINED ON

SEVEN MOST SIGNIFICANT BEHAVIORAL VARIABLES

Pair#	1		2		3		4		5		6		7		8		9		10		P
Var.#	E	C	E	C	E	C	E	C	E	C	E	C	E	C	E	C	E	C	E	C	
1	3	3	2.5	3	3	3	2	3	3	3	3	3	3	3	2.5	3	2.5	3	3	3	< .05
6	3	3	2	2	2	1.5	2	2	2.5	3	2	2	2	3	1.5	2	1.5	2.5	2	2.5	<.05
10	2	2.5	3	3	1.5	3	3	3	2	3	3	3	3	2.5	2.5	3	1	3	3	2.5	<.05
12	2	3	2.5	3	2	3	2.5	2	2	2.5	3	2.5	2	2.5	3	3	2	3	2.5	2.5	.17
13	2	2	2	2.5	2	3	2	3	3	3	3	3	3	3	3	3	2.5	3	2	3	< .03
14	2	3	2.5	3	2.5	3	2	2	2.5	33	33	33	3	3	3	3	2	3	2.5	3	< .01
15	3	3	3	2	3	3	2	3	3	3	3	3	1	3	3	3	1	3	1	3	> .05
Totals	2.4	2.8	2.4	2.6	2.3	2.8	2.1	2.6	2.6	2.9	2.9	2.8	2.4	2.8	2.6	2.8	1.8	2.9	2.3	2.8	< .005

TABLE VIII

MEAN RATINGS OF MOTHER AND FATHER

FOR FIVE SELECTED PAIRS

	Mother		Father		Mother and Father Combined	
Pair	E	C	E	C	E	C
1	1.7	2.9	2.4	2.8	2.0	2.8
3	2.3	2.8	2.4	2.6	2.3	2.7
4	2.5	2.7	1.3	2.1	1.9	2.4
5	2.6	3.0	2.3	2.9	2.4	2.9
9	2.1	2.9	1.9	2.8	2.0	2.8
Totals	2.2	2.9	2.1	2.6	2.1	2.7
P	$<.01$		$<.01$		$<.005$	

Table IX. It is seen that siblings is the only stimulus on which the groups differ significantly, and here the experimental Ss have the higher ratings. The data from which Table IX was drawn are to be found in Appendix V. Table X, page 34, is a summary of the data found in Table IX, with identical P values. A comparison of each variable across all stimulus categories yielded the results shown in Table XI, page 35. It is seen that none of the variables is significant for a single stimulus or across all stimuli. Here again, the absence of a P indicates insufficient data as described above. Data from which Table XI was drawn are to be found in Appendix VI. Table XII, page 36, depicts mean ratings for each operant response category. It can be seen that none of the categories is significant, nor is the comparison of mean ratings across all categories. Data from which Table XII was drawn are to be found in Appendix VII.

Table XIII, page 38, combines mean ratings on all Ss across all stimuli and operant responses from the first ten years of life and cross-sectional behavior. It is seen that this comparison is not significant. Table XIV, page 39, was constructed by arriving at a mean score for each S based on his rating on each of the seven most significant variables for mother and father. Each S's Deprivation Scales Score is also included in this table. A

TABLE IX

MEAN RATING FOR EACH SUBJECT ON ALL STIMULI,

CROSS-SECTIONAL

	1		2		3		4		5		6		7		8		9		10		P
	E	C	E	C	E	C	E	C	E	C	E	C	E	C	E	C	E	C	E	C	
Wife	2.8	2.8	0.0	0.0	0.0	0.0	2.9	3.0	2.6	3.0	2.9	2.1	2.8	3.0	2.8	0.0	3.0	3.0	2.8	2.9	.38
Children	0.0	0.0	2.8	0.0	0.0	0.8	2.9	3.0	2.4	3.0	3.0	2.9	3.0	3.0	0.0	2.9	0.0	3.0	3.0	3.0	.27
Siblings	3.0	2.3	2.9	2.7	3.0	3.0	2.2	0.0	2.9	3.0	3.0	2.8	3.0	3.0	2.9	2.8	3.0	2.4	2.0	2.8	.99
Male Peers	3.0	3.0	2.9	2.9	3.0	2.9	2.9	2.8	2.8	3.0	3.0	3.0	2.9	2.9	2.7	3.0	3.0	3.0	2.8	3.0	.50
Totals	2.2	2.0	2.2	1.4	1.5	1.7	2.7	1.8	2.7	3.0	3.0	2.7	2.9	3.0	2.1	2.2	2.3	2.9	2.7	2.9	.377

TABLE X

SUMMARY OF MEAN STIMULUS RATINGS,

CROSS-SECTIONAL

Stimulus	Experimental	Control	P Value
Wife	2.3	2.0	.38
Children	1.7	2.2	.27
Siblings	2.9	2.5	.99
Male Peers	2.9	3.0	.50
Totals	2.5	2.4	.377

TABLE XI

P VALUES BY VARIABLES AND STIMULUS CATEGORIES

CROSS-SECTIONAL

Var.#	Wife	Children	Siblings	Male Peers	Total
1	.83	.38	.89	.38	.726
2	.62	.50	.89	.38	.500
3	.75	.77	-	-	.828
4	.62	.34	-	-	.623
5	.36	-	-	-	--
6	-	-	-	-	--
7	-	-	-	-	--
8	-	-	-	-	--
9	.62	.50	.86	.77	.887
10	.50	-	-	.62	.623
11	.62	-	-	-	.637
12	.73	-	-	-	.500
13	.62	.50	.94	.64	.500
14	.62	.50	.86	.64	.377
15	.62	.50	.86	.64	.623
16	.66	-	-	-	--
17	.62	.50	.83	.62	.623
Totals	.38	.27	.99	.50	.377

TABLE XII

MEAN RATINGS OF OPERANT RESPONSES

Response	Experimental	Control	P Value
Oral Habits			
Eating	2.1	2.8	.11
Drinking	2.8	2.7	.73
Smoking	2.6	2.7	.50
Sleeping			
Sleeping	2.4	2.6	.50
Dreaming	2.9	2.8	.75
Elimination			
Defecation	2.3	2.5	.38
Urination	2.8	2.4	.83
Cleanliness			
Body Proper	2.9	2.8	.75
Hands and Face	-	-	-
Sex Organs	2.9	3.0	.50
Teeth	-	-	-
Clothes	2.8	2.8	.66
Living Quarters	2.7	3.0	.36
Food and Drink	-	-	-
Motility			
Gross Bodily Movements	2.0	2.8	.17
Fine Movements	3.0	2.9	.73
Verbal Behavior	2.7	3.0	.38
Health			
Attention to Physical Well Being	2.3	2.7	.25
Illnesses and Accidents	2.0	2.3	.34
Sexual Behavior			
Sexual Seeking Behavior	2.2	2.8	.23
Heterosexual Behavior	2.3	2.7	.50
Sexual Behavior--Other	-	-	-

TABLE XII (continued)

Response	Experimental	Control	P Value
Social Behavior (General)			
Social Play	2.1	2.7	.23
Public Behavior	2.6	3.0	.25
Companionship Seeking Activity (non-sexual)	2.2	2.9	.17
Social Behavior (Specific)			
Behavior Toward Unknown People	-	-	-
Behavior Toward Unknown Animals	-	-	-
Conforming Behavior			
Social	2.7	2.6	.77
Intellectual	-	-	-
Level of Responding			
Alertness to Cue Change	2.7	2.9	.50
Response to Stress	-	-	-
Work Level	1.6	2.6	.06
Other Non-Occupational Activities			
Hobbies and Avocations	2.6	2.8	.38
Solitary Behavior	2.8	2.8	.50
Hoarding Behavior	-	-	-
Driving Behavior	2.4	2.2	.75
Totals	2.5	2.7	.114

TABLE XIII

MEAN RATING FOR EACH SUBJECT,

FIRST TEN YEARS AND

CROSS-SECTIONAL

	1		2		3		4		5		6		7		8		9		10		P
	E	C	E	C	E	C	E	C	E	C	E	C	E	C	E	C	E	C	E	C	
First Ten Years	2.5	2.7	1.8	2.8	2.0	2.7	1.8	2.1	2.5	2.9	2.8	2.7	2.7	2.1	2.5	2.2	2.0	2.3	2.7	2.9	.172
Cross-Sectional	2.2	2.0	2.2	1.4	1.5	1.7	2.7	1.8	2.7	3.0	3.0	2.7	2.9	3.0	2.1	2.2	2.3	2.9	2.7	2.9	.377
Operant Responses	2.6	2.8	2.6	2.7	2.7	2.4	2.5	2.9	2.6	2.9	2.7	2.4	2.1	2.9	2.4	3.0	3.0	3.0	1.9	2.6	.114
Mean	2.4	2.5	2.2	2.3	2.4	2.3	2.3	2.3	2.6	2.9	2.8	2.6	2.6	2.7	2.3	2.5	2.8	2.7	2.4	2.8	.275
															Overall P:			.275			

TABLE XIV

MEAN RATINGS OF MOST SIGNIFICANT VARIABLES FOR MOTHER AND FATHER, FIRST TEN YEARS OF LIFE, AND DEPRIVATION SCALE SCORES OF EXPERIMENTAL AND CONTROL SUBJECTS

Pair	E Mean Rating	E Dep. Sc. * Score	C Mean Rating	C Dep. Sc. * Score
1	2.4	9	2.8	6
2	2.4	7	2.6	4
3	2.3	10	2.8	10
4	2.1	8	2.6	5
5	2.6	2	2.9	2
6	2.9	6	2.8	8
7	2.4	9	2.8	9
8	2.6	8	2.8	5
9	1.8	6	2.9	5
10	2.3	10	2.8	7

* P = .05

mean was taken of these two scores across both groups and each S was classified in terms of his scores on both measures in relation to the group ("grand") mean of each measure. Table XV is the result of this classification, and shows a slight but significant relationship between stimulus deprivation in early childhood and current adult behavior. High ratings from childhood tend to go along with low deprivation scale scores.

In Table XVI, page 42, are presented Bender-Gestalt Test scores for all Ss. The test was scored by the method developed by Pascal and Suttell (1951). Both the binomial test and the Wilcoxon test were applied to these data, and it is seen that there is no significant difference on this measure. Table XVII, page 43, indicates the disparity between prediction of rate of neoplasm growth according to Blumberg's M M P I signs and the surgeon's judgment of same. It is seen that there is disagreement on 5 of the 8 cases tested. In other words, using the surgeon's judgment as the criterion, M M P I prediction is not significantly different from chance. The surgical judgments were rendered by Dr. J. V. Cockrell, Director of Professional Services, V A Hospital, Jackson, Mississippi.

TABLE XV

THE RELATIONSHIP BETWEEN STIMULUS DEPRIVATION IN EARLY CHILDHOOD AND CURRENT ADULT BEHAVIOR

		Frequency of Ratings Divided on the Grand Mean (2.58)		
		> 2.58	< 2.58	Sum
Frequency of Deprivation Scale Scores Divided on the Grand Mean	> 6.8	5	6	11
	< 6.8	8	1	9
	Sum	13	7	20

Phi = .45

P < .05

TABLE XVI

PERFORMANCE ON

BENDER-GESTALT

TEST

Pair #	E	C
1	N S	69
2	50	65
3	78	83
4	100	61
5	42	38
6	48	79
7	152	95
8	120	N S
9	83	49
10	97	85

P = .36 (Binomial)

P > .10 (Wilcoxon)

TABLE XVII

PREDICTION OF NEOPLASM

RATE OF GROWTH

Experimental S Number	MMPI Prediction	Surgical Prediction
1	--	fast
2	slow	fast
3	slow	fast
4	fast	fast
5	fast	fast
6	slow	fast
7	slow	fast
8	slow	fast
9	fast	fast
10	--	--

CHAPTER IV

DISCUSSION

The findings of this study indicate the importance of the behavior of parental figures in an individual's early life. Of the many stimuli investigated from early life, mother and father are the two on which the groups were significantly different. These findings are consistent with other investigations of the relationship between early experience and later behavior. Pascal & Jenkins (1960) cite studies of alcoholics, psychotics, and duodenal ulcer patients in which parents of these groups had displayed deviant behavior in the subjects' early years.

In the present study, the difference between the parents of the two groups appears to arise principally from five variables: Frequency of Contact, Physical Punishment, Social Behavior, Compatibility with Spouse, and Sexual Role Appropriateness. In each case, parents of experimental Ss were more deviant than parents of control Ss. The data as presented in the preceding chapter do not reveal which direction the deviancies took, except for the last two variables. However, the case history material, which is to be found on file at the University of Tennessee Psychological Service Center, Knoxville, reveals that Frequency of Contact was too little, Physical Punishment was too much,

and Social Behavior was too little. Thus the experimental Ss were exposed to parents who were in less contact with them than would be expected, who were overly physically punitive toward them, who had few friends, who were unable to get along together,and quarreled and fought more than would be expected, and who did not fulfill their sexual roles appropriately. This last characteristic was particularly true of father.

It is interesting to look at the findings on the cross-sectional behavior in light of findings from early life. The experimental Ss appear to have been exposed to a certain amount of stress in the form of parents who were deviant in some respects. As Freud (1924) pointed out, early stress does affect later behavior, but the effect of stress in early years is not apparent in ratings of experimental Ss' cross-sectional behavior. Furthermore, while the two groups were very different in terms of early stress, they were only slightly different on still another rough index of current functioning, the Deprivation Scale. This suggests that the excessive early stress undergone by experimental Ss may indeed be reflected not in overt behavior but in neoplastic growth. It appears, then, that the present findings support the notion that growth of cancer in humans may be a reflection of early stress.

Men with various other types of pathology have been

studied with essentially the same technique as that employed in this study. Parents of alcoholics (Annual Report of Alcoholism Research, 1959) were found to be significantly different from those of controls. The significant variables were Frequency of Contact (mother only), Play Activities, Restraints, Physical Punishment (father only), Displays of Affection, Deviant Behavior (father only), Religious Behavior, Providing Behavior (mother only), and Compatibility with Spouse. In each case, alcoholic Ss showed more stimulus deprivation than did controls. It is seen that alcoholics, at least from the sample above, were exposed to much more stimulus deprivation, or stress, in early life than were the experimental Ss in the present study.

Horner (1961) studied schizophrenic men in an effort to find important stimulus variables in their early family relationships. He found that stimulus deprivation on the part of parents differentiated the groups, with significant variables being Play Activities, Displays of Affection, Social Behavior (father only), and Compatibility with Spouse.

It is seen that deprivation by parents is a factor which significantly differentiates alcoholics, schizophrenics, and men with cancer from controls. However, the only variable significant for all groups was Compatibility with

with Spouse, so it is apparent that the pattern of deprivation is quite different. Another important feature which should be pointed out is that the parents of alcoholics and schizophrenics are much more different from parents of controls than were parents of men with cancer. Parents of alcoholics were most deviant, parents of schizophrenics next, and parents of men with cancer of the lung least deviant.

Wheeler & Caldwell (1955), as a result of research on women with cancer of the breast and cervix, concluded that deprivation in the early life of people who later develop cancer might be a fruitful area for study, and the present investigation, with its suggestive findings, supports this conclusion. However, it is apparent that much more work will have to be done in this area before clear-cut relationships will emerge, if such there be. A number of investigators, among whom are Leshan & Worthington (1956), have reported that cancer patients feel tension over the death of a parent, an event that may have occurred in the distant past. The present study does not support this finding since the two groups were identical in this regard (17 experimental parental deaths, 17 control parental deaths).

There are certain aspects of the present study which should be commented on. It was mentioned in Chapter II

that the University of Tennessee Deprivation Scale would be used to screen out potential control Ss whose scores on this Scale indicated severe lack of environmental support. Because of an unforseen shortage of controls, this criterion was loosened and Ss were used who would not have been had others with lower scores been available. Three control Ss, #3, #6, and #7, with Deprivation Scale scores of 10, 8, and 9, are particularly questionable. Nevertheless, they do fulfill the primary criterion in that they have no demonstrable cancer. The Alcoholism Scale was also mentioned. No further reference to it has been made because of the ratings obtained. Three experimental Ss scored "1" on the scale, one scored "2", and all other experimental Ss scored "0". One control S scored "1" on the Scale while all others scored "0". Thus it was concluded that alcoholic consumption in the groups in question was entirely within expectancy and need not be considered.

A word of explanation should be given regarding the high frequency of "no data", ND, entries as shown in Appendix II. The major source of ND ratings was the S's inability to recall or his outright lack of knowledge concerning certain variables as they pertained to various individuals in his environment. This of course was somewhat more noticeable with data from the first ten years of life than with that from cross-sectional behavior. No

doubt contributing to this inability to recall was the relatively advanced age of the population from which Ss were drawn. Cancer of the lung is predominantly found in men who are of late middle age and older.

The medical characteristics of both groups are presented in Appendix I. It will be seen that six of the ten experimental Ss had undergone removal of a lung or a part thereof at varying periods of time preceding their contacts with the investigator. This operation resulted in varying degrees of impairment ranging from minimal to severe. The control groupsalso contained certain individuals with physical impairments. The Operant Response variable which would have been expected to reflect differences in general activity level, Work Level, did so but only at the .06 level of significance.

The present study has revealed certain differences in the early experiences of men with cancer of the lung and men without this condition. Replication would be necessary, however, before these differences could be accepted at face value. Pascal & Jenkins (1960) make certain suggestions concerning modifications of the methodology used in the present study. They point out that only certain selected stimuli and variables may be studied, depending on the nature of the problem. On the basis of the findings of the present study one could hypothesize that early stress

is related to later neoplastic development, and more specifically, that deviant parental behavior is one of the most important factors in this stress. Thus a replication of this study should be modified to bring major emphasis upon early parental behavior, particularly on those variables found to be significant. In addition, criteria for control Ss should be adhered to more closely.

CHAPTER V

SUMMARY AND CONCLUSIONS

The purpose of this study was to investigate, systematically, by means of scales developed by Pascal & Jenkins (1961), the characteristics of important people encountered in the first ten years of life by subjects with cancer of the lung, and to make a comparison between these and matched control cases. In addition, the characteristics of important people encountered at the present time by men with cancer of the lung were studied by means of the Pascal-Jenkins Scales, and a comparison made with matched control cases. Ten men with cancer of the lung were matched with ten cancer-free controls on the basis of race, age, education, MA, and vocation. A history was then taken from each subject, using the Pascal-Jenkins Scales as a guide. From each S, information was obtained concerning his mother, father, older and younger siblings, and his male peers from the first ten years of his life, and concerning his wife, children, siblings, and male peers from his current situation. Each stimulus (mother, father, etc.) was then rated on seventeen behavioral variables, such as Displays of Affection, Providing Behavior, etc. Each subject was rated on the University of Tennessee Deprivation Scale and was given the Bender-Gestalt Test. In

addition, eight of the experimental subjects were given the M M P I in order to check the indices of fast- and slow-growing neoplasm which were developed by Blumberg (1954). There was no relationship between M M P I and surgical prediction of rate of neoplastic growth.

The behavior of mother and father in the Ss' early years was found to differentiate the two groups significantly, with the specific variables being Frequency of Contact, Physical Punishment, Social Behavior, Compatibility with Spouse, and Sexual Role Appropriateness. The two groups were found to be essentially similar in adult behavior. Thus it was hypothesized that early stress was related to later development of a neoplasm, as other investigators (Wheeler & Caldwell, 1955) had suggested. It was suggested that replications of the present study test this hypothesis further, and specific recommendations for this further research were made.

REFERENCES

REFERENCES

Abrams, Ruth D., & Finesinger, J. E. Guilt reactions in patients with cancer. Cancer, 1953, 6(3), 474-482.

Annual Report, Alcoholism Research Project. University of Tennessee Psychological Service Center, Knoxville: 1959.

Bacon, Catherine L., Renneker, R., & Cutler, M. A psychosomatic survey of cancer of the breast. Psychosom. Med., 1952, 14, 453-460.

Bard, M., & Sutherland, A. M. Psychological impact of cancer and its treatment. IV. Adaptation to radical mastectomy. Cancer, 1955, 8, 656-672.

Blumberg, E. M. Results of psychological testing of cancer patients. In J. A. Gengerelli & F. J. Kirkner (Ed.), The psychological variables in human cancer. Berkeley and Los Angeles, Calif.: Univer. of Calif. Press, 1954. Pp. 30-61.

Butler, B. The use of hypnosis in the cure of cancer. Cancer, 1954, 7, 1-15.

Cobb, A. Beatrix. A social psychological study of the cancer patient. Unpublished doctoral dissertation, Univer. of Texas, 1953.

Cutler, M. The nature of the cancer process in relation to a possible psychosomatic influence. In J. A. Gengerelli & F. J. Kirkner (Ed.), The psychological variables in human cancer. Berkeley and Los Angeles, Calif.: Univer. of Calif. Press, 1954. Pp. 1-13.

Edwards, E. A. Statistical analysis. New York: Rinehart & Co., 1959.

Evans, Elida. Psychological study of cancer. Dodd, Mead and Company, Inc., 1926.

Freed, A. Psychology of the cancer patient. Amer. J. Psychother., 1947, 1, 511-516.

Freud, S. Collected papers. London: Hogarth Press, 1924.

Greene, W. A., & Miller, G. Psychological factors and reticuloendothelial disease. IV. Observations on a group of children and adolescents with leukemia: an interpretation of disease development in terms of the mother-child unit. Psychosom. Med., 1958, 20, 124-144.

Horner, R. F. A search for important stimulus variables in the early family relationships of schizophrenic patients. Unpublished doctoral dissertation, Univer. of Tennessee, 1961.

Jenkins, W. O. Quick and dirty statistics. Unpublished manuscript, Univer. of Tennessee, 1956.

Jenkins, W. O., & Davis, H. C. On the behavioral definition of alcoholism. Unpublished manuscript, Univer. of Tennessee, 1957.

Klopfer, B. Discussion of results of psychological testing. In J. A. Gengerelli & F. J. Kirkner (Ed.), The psychological variables in human cancer. Berkeley and Los Angeles, Calif.: Univer. of Calif. Press, 1954. Pp. 62-65.

Kowal, S. J. Emotions as a cause of cancer. Psychoanal. Rev., 1955, 42, 217-227.

Leshan, L., & Worthington, R. E. Some psychologic correlates of neoplastic disease: a preliminary report. J. clin. exp. Psychopath., 1955, 16, 281-288.

Leshan, L. L., & Worthington, R. E. Personality as a factor in the pathogenesis of cancer: a review of the literature. Brit. J. Med. Psychol., 1956, 29, 49-56.

McGovern, G. P., Miller, D. H., & Robertson, E. Elizabeth. A mental syndrome associated with lung carcinoma. A.M.A. Arch. Neurol. Psychiat., 1959, 81, 341-347.

Macmillan, M. B. A note on Leshan and Worthington's 'personality as a factor in the pathogenesis of cancer'. Brit. J. Med. Psychol., 1957, 30, 41.

Meerloo, J. A. M. Psychologic implications of cancer. Geriatrics, 1954, 9, 154-156.

Meerloo, J. A. M. Psychological implications of malignant growth: a survey of hypotheses. Brit. J. Med. Psychol., 1954, 27, 210-215.

O'Connor, J. F. Psychiatric manifestations in patients with systemic lupus erythematosus. A.M.A. Arch. Neurol. Psychiat., 1957, 77, 166-167.

Pascal, G. R. Behavioral change in the clinic--a systematic approach. New York: Grune & Stratton, 1959.

Pascal, G. R., & Jenkins, W. O. Systematic observation of gross human behavior. New York: Grune & Stratton, 1961.

Pascal, G. R., & Suttell, Barbara J. The Bender-Gestalt Test. New York: Grune & Stratton, 1951.

Perrin, G. M., & Pierce, Irene R. Psychosomatic aspects of cancer: a review. Psychosom. Med., 1959, 21, 397-421.

Reznikoff, M. Psychological factors in breast cancer. Psychosom. Med., 1955, 17, 96-108.

Shands, H. C., Finesinger, J. E., Cobb, S., & Abrams, Ruth D. Psychological mechanisms in patients with cancer. Cancer, 1951, 4, 1159-1170.

Simmons, H. E. The psychosomatic aspects of cancer. Washington, D. C.: Peabody Press, 1956.

Sutherland, A. M. Psychological impact of cancer and its therapy. The Medical Clinics of North America; Symposium from Memorial Center for Cancer and Allied Diseases, New York, on The Medical Aspects of Cancer, Philadelphia, London: W. B. Saunders Company, 1956, 705-720.

Sutherland, A. M., Orbach, C. E., Dyk, Ruth B., & Bard, M. The psychological impact of cancer and cancer surgery. I. Adaptation to the dry colostomy; preliminary report and summary of findings. Cancer, 1952, 5, 857-872.

Tarlau, M., & Smalheiser, I. Personality patterns in patients with malignant tumors of the breast and cervix. Psychosom. Med., 1951, 13, 117-121.

Wheeler, J. I., & Caldwell, Bettye McD. Psychological evaluation of women with cancer of the breast and of the cervix. Psychosom. Med., 1955, 17, 256-268.

APPENDIX I

TABLE XVIII

POPULATION MEDICAL CHARACTERISTICS

	Experimental		
Pair	Diagnosis and Date	Method of Diagnosis	Operation and Date
1	Bronchogenic Carcinoma, May '59	Bronchoscopic examination and examination of tissue sample	Exploratory right thoracotomy, found to be inoperable
2	Bronchogenic Carcinoma, January '59	Examination of tissue sample and X-ray	Right pneumonectomy, March '59
3	Bronchogenic Carcinoma, November '58	Examination of sputum and tissue sample	Right lobectomy, December '58
4	Bronchogenic Carcinoma, February '59	Examination of tissue sample	Left pneumonectomy, February '59
5	Bronchogenic Carcinoma, March '52	Bronchoscopic examination	Left pneumonectomy, April '52
6	Bronchogenic Carcinoma, December '58	Examination of sputum and tissue sample	Inoperable--metastasis to lymphatic system
7	Bronchogenic Carcinoma, May '58	Examination of sputum and tissue sample	Right pneumonectomy, May '58
8	Bronchogenic Carcinoma, July '59	Examination of sputum	No operation

TABLE XVIII (continued)

Pair	Diagnosis and Date	Method of Diagnosis	Operation and Date
		Experimental (continued)	
9	Bronchogenic Carcinoma, August '59	Bronchoscopic examination and examination of tissue	No operation
10	Bronchogenic Carcinoma, August '58	Examination of tissue	Right pneumonectomy, August '58
		Control	
1	Left bicipital tendonitis, May '59	Physical examination	None
2	Osteomyelitis, left ankle, April '60	Physical examination	None
3	No disease, February '60 (non-hospitalized)	Physical examination	None
4	No disease, May '60 (non-hospitalized)	Physical examination	None
5	Fracture, multiple; open, comminuted, elbow, left; ischial bone, left; through acetabulum, left; nasal bones; May '59	X-ray and direct examination	Closure of various fractures, May '59

TABLE XVIII (continued)

Control (continued)			
Pair	Diagnosis and Date	Method of Diagnosis	Operation and Date
6	Precardial Grade II, blowing systolic murmur, August '59	Physical examination	None
7	Low blood pressure, June '60	Physical examination	None
8	Ruptured disc	Physical examination and X-ray	Spinal fusion, April '60
9	No disease, May '60 (non-hospitalized)	Physical examination	None
10	Ulcer, left leg (result of circulatory disorder)	Physical examination	Above knee amputation, August '61

APPENDIX II

TABLE XIX

NUMBER OF PAIRS AND NUMBER OF REVERSALS
BY STIMULUS AND VARIABLE,
FIRST TEN YEARS OF LIFE

	Stimuli													
	Mother		Father		O. Sibs		Y. Sibs		M. Peers			
Var	Pr	Rev	Pr	Rev	Pr	Rev	Pr	Rev	Pr	Rev	Tot Pr	Tot Rev
1	10	5.0	10	3.0	9	4.5	10	5.5	10	3.0	49	21.0
2	8	3.5	10	3.0	9	4.5	10	4.5	10	5.0	47	20.5
3	6	2.0	3	0.0	0	0.0	1	0.5	0	0.0	10	2.5
4	10	4.5	10	5.0	4	3.0	3	1.5	0	0.0	27	14.0
5	10	4.5	8	4.5	3	2.0	4	2.5	2	0.5	27	14.0
6	9	2.0	7	2.5	2	1.0	2	1.0	3	1.0	23	7.5
7	5	3.0	6	2.0	2	1.5	22	1.0	3	0.5	18	8.0
8	1	0.5	0	0.0	0	0.0	1	0.5	0	0.0	2	1.0
9	6	2.5	7	2.5	4	1.5	3	1.5	2	0.5	22	8.5
10	10	3.5	7	2.5	4	2.5	3	2.0	4	2.0	28	12.5
11	10	4.0	8	3.0	5	2.5	6	3.0	0	0.0	29	12.5
12	10	2.0	10	4.0	5	2.5	6	2.0	3	1.5	34	12.0
13	9	2.5	9	3.0	8	3.5	9	5.0	9	4.0	44	18.0
14	10	4.0	10	2.0	8	3.5	9	5.0	9	5.0	46	19.5
15	10	4.0	10	3.5	8	3.0	9	4.5	3	1.0	38	15.5
16	0	0.0	0	0.0	0	0.0	1	0.5	0	0.0	1	0.5
17	10	4.0	10	4.0	8	4.0	10	5.5	9	4.5	47	22.0
Totals											492	209.5

TABLE XX

NUMBER OF PAIRS AND NUMBER OF REVERSALS
BY STIMULUS AND VARIABLE,
CROSS-SECTIONAL

	Stimuli									
	Wife		Children		Siblings		Male Peers			
Var	Pr	Rev	Pr	Rev	Pr	Rev	Pr	Rev	Tot Pr	Tot Rev
1	10	6.0	10	4.5	10	6.5	10	4.5	40	21.0
2	9	4.5	10	4.5	10	6.5	10	4.0	39	19.5
3	9	5.0	6	3.5	3	2.0	1	0.5	19	11.0
4	10	5.0	6	2.0	3	1.5	4	2.0	23	10.5
5	7	2.5	2	1.5	1	1.0	0	0.0	10	5.0
6	3	1.5	1	0.5	0	0.0	1	0.5	5	2.5
7	3	1.5	1	0.5	0	0.0	1	0.5	5	2.5
8	3	2.0	1	0.5	0	0.0	1	0.5	5	3.0
9	9	4.5	7	3.0	8	5.0	7	4.0	31	16.5
10	7	3.0	4	2.0	3	1.0	10	5.0	24	11.0
11	9	4.5	1	0.5	1	0.5	4	2.0	15	7.5
12	10	5.5	5	1.5	5	4.5	2	1.0	22	12.5
13	9	4.5	6	2.5	6	4.5	7	3.5	28	15.0
14	9	4.5	8	3.5	8	5.0	8	4.0	33	17.0
15	9	4.5	8	3.5	7	4.5	7	3.5	31	16.0
16	6	3.0	1	0.5	0	0.0	0	0.0	7	3.5
17	9	4.5	9	4.0	9	5.5	9	4.5	36	18.5
Totals									373	193.5

TABLE XXI

FREQUENCY OF NO DATA ENTRIES BY STIMULUS AND VARIABLE, FIRST TEN YEARS OF LIFE AND CROSS-SECTIONAL

Variable	Pat. G-mother 1st 10 Yrs. E	Pat. G-mother 1st 10 Yrs. C	Pat. G-father 1st 10 Yrs. E	Pat. G-father 1st 10 Yrs. C
1. Frequency of Contact	-	-	-	-
2. Activities	1	-	-	-
3. Displays of Affection	1	2	-	-
4. Providing Behavior	1	2	-	1
5. Restraints	2	2	-	1
6. Physical Punishment	1	-	-	-
7. Verbal Punishment	1	-	-	-
8. Intellectual Behavior	2	2	-	1
9. Status	2	1	-	1
10. Social Behavior	1	1	-	1
11. Religious Behavior	1	1	-	-
12. Physical Health	1	-	-	-
13. Compatibility	2	1	-	1
14. Role	2	-	-	-
15. Variability of Habitat	1	-	-	-
16. Sexual Behavior	2	2	-	1
17. Deviant Behavior	1	-	-	-
Sum	22	14	0	7
Mean	1.3	0.8	0.0	0.4

TABLE XXI (continued)

Var.#	Mat. G-mother 1st 10 Yrs. E	Mat. G-mother 1st 10 Yrs. C	Mat. G-father 1st 10 Yrs. E	Mat. G-father 1st 10 Yrs. C	Mother 1st 10 Yrs. E	Mother 1st 10 Yrs. C	Mother Cross-Sect. E	Mother Cross-Sect. C
1.	-	1	-	-	-	-	-	-
2.	1	3	-	1	1	1	-	-
3.	3	4	3	4	3	1	1	-
4.	3	4	2	4	-	-	1	2
5.	3	6	2	4	-	-	1	2
6.	3	5	3	4	1	-	1	2
7.	2	5	3	4	4	2	1	2
8.	5	6	3	4	7	8	1	2
9.	3	4	3	1	4	1	-	1
10.	4	6	3	4	-	-	-	2
11.	5	5	3	4	-	-	-	2
12.	3	2	3	-	-	-	-	-
13.	3	4	2	3	1	-	-	2
14.	2	3	2	2	-	-	-	1
15.	1	2	1	2	-	-	-	-
16.	6	6	3	4	10	10	1	2
17.	2	3	1	2	-	-	-	1
Sum	49	69	36	47	31	23	7	21
Mean	2.9	4.1	2.1	2.8	1.8	1.4	0.4	1.2

TABLE XXI (continued)

	Father				Older Sibs		Younger Sibs	
	1st 10 Yrs.		Cross-Sect.		1st 10 Yrs.		1st 10 Yrs.	
Var.#	E	C	E	C	E	C	E	C
1.	-	-	-	-	-	1	-	-
2.	-	-	-	-	-	1	-	-
3.	4	4	-	2	6	9	6	7
4.	-	-	1	1	4	4	5	5
5.	2	-	1	-	2	5	5	1
6.	3	1	2	1	5	5	7	4
7.	2	3	2	1	6	4	7	4
8.	9	9	2	1	8	8	8	6
9.	2	1	-	-	4	3	6	3
10.	2	2	-	1	5	4	6	4
11.	2	-	-	1	3	4	4	-
12.	-	-	-	-	1	4	2	2
13.	1	-	-	1	-	2	1	-
14.	-	-	-	-	-	2	1	-
15.	-	-	-	-	-	2	1	-
16.	10	10	2	1	8	8	8	6
17.	-	-	-	-	-	2	-	-
Sum	37	30	10	10	52	68	67	42
Mean	2.2	1.8	0.6	0.6	3.1	4.0	3.9	2.5

TABLE XXI (continued)

	Male Peers				Female Peers			
	1st 10 Yrs.		Cross-Sect.		1st 10 Yrs.		Cross-Sect.	
Var.#	E	C	E	C	E	C	E	C
1.	-	-	-	-	-	2	-	-
2.	-	-	-	-	1	2	-	-
3.	9	10	7	7	7	9	6	8
4.	8	9	2	5	7	8	8	6
5.	4	5	7	8	6	8	8	9
6.	4	4	7	9	6	8	9	9
7.	4	4	7	9	6	9	9	9
8.	10	10	7	9	7	9	9	9
9.	7	4	2	2	7	8	2	5
10.	4	3	-	-	6	5	4	4
11.	9	9	4	4	6	8	6	5
12.	5	3	6	7	5	5	8	6
13.	-	1	2	1	6	3	4	4
14.	-	1	2	2	6	3	5	4
15.	4	5	3	2	6	5	5	3
16.	10	9	9	10	7	7	8	7
17.	-	1	1	-	4	3	5	4
Sum	78	78	66	75	93	102	96	92
Mean	4.6	4.6	3.9	4.4	5.5	6.0	5.6	5.4

TABLE XXI (continued)

	Older Males				Older Females			
	1st 10 Yrs.		Cross-Sect.		1st 10 Yrs.		Cross-Sect.	
Var.#	E	C	E	C	E	C	E	C
1.	1	2	4	3	1	3	4	3
2.	2	5	4	3	1	3	4	3
3.	9	8	8	7	7	8	6	5
4.	6	9	7	7	7	8	6	3
5.	7	7	7	9	5	9	6	6
6.	9	10	8	9	6	9	6	7
7.	9	7	8	9	6	8	6	7
8.	9	10	7	9	5	9	6	7
9.	8	8	5	6	5	8	6	3
10.	8	9	6	4	6	9	6	3
11.	7	10	6	7	6	8	5	5
12.	7	7	5	5	6	8	6	4
13.	7	8	5	5	7	7	6	4
14.	6	8	5	5	5	7	6	3
15.	8	8	4	3	6	8	6	3
16.	9	8	8	9	9	9	6	7
17.	4	7	5	3	4	8	6	3
Sum	116	131	102	103	94	132	97	77
Mean	6.8	7.7	6.0	6.0	5.5	7.7	5.7	4.5

TABLE XXI (continued)

	Younger Males				Younger Females			
	1st 10 Yrs.		Cross-Sect.		1st 10 Yrs.		Cross-Sect.	
Var.#	E	C	E	C	E	C	E	C
1.	5	5	2	-	5	5	2	-
2.	5	6	2	-	5	7	2	-
3.	10	10	6	7	9	10	7	5
4.	10	10	4	7	9	10	6	5
5.	8	10	7	10	8	10	9	7
6.	9	10	9	10	9	10	9	8
7.	9	10	9	10	9	10	9	8
8.	10	10	9	10	9	10	10	8
9.	9	10	5	6	9	10	4	4
10.	9	9	5	7	9	9	6	5
11.	10	9	10	8	9	9	9	6
12.	8	10	8	8	7	10	8	7
13.	7	9	5	3	7	10	6	3
14.	7	10	5	5	7	10	4	6
15.	10	10	5	5	9	10	4	4
16.	10	10	10	10	9	10	10	7
17.	7	9	5	4	7	9	5	3
Sum	143	157	106	110	136	159	110	86
Mean	8.4	9.2	6.2	6.5	8.0	9.4	6.5	5.1

TABLE XXI (continued)

Var.#	All Sibs Cross-Sect. E	All Sibs Cross-Sect. C	Wife Cross-Sect. E	Wife Cross-Sect. C	Children Cross-Sect. E	Children Cross-Sect. C
1.	-	-	-	-	-	-
2.	-	-	1	-	-	-
3.	4	4	-	1	-	4
4.	2	5	-	-	3	3
5.	7	8	3	-	3	8
6.	8	9	7	5	6	8
7.	8	9	7	4	6	8
8.	9	9	7	6	6	8
9.	-	2	7	6	6	8
10.	4	5	2	1	2	5
11.	6	7	-	1	6	7
12.	2	4	-	-	3	2
13.	1	3	1	-	2	2
14.	-	2	1	-	1	1
15.	1	2	1	-	1	1
16.	10	9	2	2	6	8
17.	-	1	1	-	-	1
Sum	62	79	34	20	46	68
Mean	3.6	4.6	2.0	1.2	2.7	4.0

TABLE XXI (continued)

	Sum Across All Stimuli				Mean	
	1st 10 Yrs.		Cross-Sect.		1st 10 Yrs.	Cross-Sect.
Var.#	E	C	E	C		
1.	12	19	12	6	2.2	1.5
2.	15	29	13	7	3.1	1.7
3.	77	85	32	34	11.6	5.5
4.	60	74	40	44	9.6	7.0
5.	54	76	63	67	9.8	10.8
6.	66	70	72	77	9.7	12.4
7.	68	70	72	74	9.9	12.2
8.	92	102	73	78	13.9	12.6
9.	65	63	22	31	9.1	4.4
10.	63	65	35	38	9.1	6.1
11.	65	67	52	53	9.4	8.8
12.	47	51	46	43	7.0	7.4
13.	45	49	32	28	6.7	5.0
14.	38	46	29	29	6.0	4.8
15.	47	52	30	23	7.1	4.4
16.	101	100	72	65	14.4	11.4
17.	30	44	28	19	5.3	3.9
Sum	945	1062	723	696		
Mean	6.7	7.6	6.6	6.3		

APPENDIX III

TABLE XXII

RATINGS OF SUBJECTS' MOTHERS ON SEVENTEEN BEHAVIORAL VARIABLES,

FIRST TEN YEARS OF LIFE

Var.# Pair#	1 E-C	2 E-C	3 E-C	4 E-C	5 E-C	6 E-C	7 E-C	8 E-C	9 E-C	10 E-C	11 E-C	12 E-C	13 E-C	14 E-C	15 E-C	16 E-C	17 E-C	Means E - C
1	3-3	1-3	N-3	2-3	1-3	3-3	N-3	N-N	N-N	1-2	1-3	1-3	N-2	2-3	3-3	N-N	1-3	1.7-2.9
2	3-3	3-2	3-2	3-3	3-2	2-3	N-3	N-N	3-3	3-3	2-2	3-3	2-3	3-3	3-2	N-N	3-3	2.8-2.7
3	3-3	2-3	2-3	3-3	3-2	N-2	2-2	2-2	N-3	1-3	3-3	2-3	2-3	2-3	3-3	N-N	3-3	2.3-2.8
4	3-3	2-2	2-N	3-3	1-3	2-3	3-2	2-N	N-2	3-3	3-3	3-3	2-3	3-2	3-3	N-N	3-3	2.5-2.7
5	3-3	2-N	N-3	3-3	2-3	3-3	N-3	2-N	N-3	2-3	3-3	2-3	3-3	3-3	3-3	N-N	3-3	2.6-3.0
6	3-3	2-2	N-2	3-3	2-2	2-2	3-2	N-N	2-2	3-3	3-3	3-3	3-3	3-3	3-3	N-N	3-3	2.7-2.6
7	3-3	3-3	3-3	3-3	3-3	2-3	N-N	N-N	3-3	3-2	3-3	1-2	3-3	3-3	1-3	N-N	3-3	2.6-2.9
8	3-3	3-3	1-3	3-3	3-2	2-3	2-3	N-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	N-N	3-3	2.7-2.9
9	3-3	N-2	2-3	3-3	3-3	2-2	3-N	N-N	3-3	1-3	1-3	1-3	3-3	2-3	1-3	N-N	1-3	2.1-2.9
10	3-3	3-3	3-3	3-3	2-3	2-3	3-3	N-N	2-3	3-3	3-3	2-3	2-3	3-3	1-3	N-N	3-3	2.5-3.0
																	Means of Total	2.4-2.8

TABLE XXIII

RATINGS OF SUBJECTS' FATHERS ON SEVENTEEN BEHAVIOR VARIABLES,

FIRST TEN YEARS OF LIFE

Var.# / Pair#	1 E-C	2 E-C	3 E-C	4 E-C	5 E-C	6 E-C	7 E-C	8 E-C	9 E-C	10 E-C	11 E-C	12 E-C	13 E-C	14 E-C	15 E-C	16 E-C	17 E-C	Means E - C
1	3-3	2-3	N-3	3-3	2-2	N-N	N-N	N-N	2-N	3-3	N-2	2-3	2-2	2-3	3-3	N-N	2-3	2.4-2.8
2	2-3	2-2	N-2	3-3	3-2	N-1	2-2	N-N	3-3	N-N	2-3	2-3	2-2	2-3	3-2	N-N	3-3	2.4-2.4
3	3-3	2-1	N-N	3-3	2-3	2-1	2-3	N-N	N-3	2-3	2-1	2-3	2-3	3-3	3-3	N-N	3-3	2.4-2.6
4	1-3	2-2	1-N	2-1	N-2	N-1	N-2	N-N	1-2	N-3	N-3	2-1	N-3	1-2	1-3	N-N	1-2	1.3-2.1
5	3-3	2-3	1-3	3-3	1-3	2-3	2-3	N-N	N-2	2-3	3-3	2-2	3-3	2-3	3-3	N-N	3-3	2.3-2.9
6	3-3	3-2	N-2	3-3	2-1	2-2	3-2	N-N	3-2	3-3	3-3	3-2	3-3	3-3	3-3	N-N	3-3	2.9-2.5
7	3-3	3-2	3-N	3-3	3-2	2-3	2-2	2-N	2-2	3-3	3-3	3-3	3-3	3-3	1-3	N-N	3-3	2.6-2.7
8	2-3	2-2	1-2	3-3	2-2	1-1	2-3	N-3	1-3	2-3	2-3	3-3	3-3	3-3	3-3	N-N	3-3	2.2-2.7
9	2-3	2-2	2-N	3-3	N-3	1-3	1-N	N-N	2-2	1-N	1-3	3-3	2-3	2-3	1-3	N-N	3-3	1.9-2.8
10	3-3	3-3	2-3	2-3	3-3	2-2	2-N	N-N	2-3	3-2	3-3	3-2	2-3	2-3	1-3	N-N	3-3	2.4-2.6
																	Means of Total	2.3-2.6

TABLE XXIV

RATINGS OF SUBJECTS' OLDER SIBS ON SEVENTEEN BEHAVIORAL VARIABLES, FIRST TEN YEARS OF LIFE

Var.# Pair#	1 E-C	2 E-C	3 E-C	4 E-C	5 E-C	6 E-C	7 E-C	8 E-C	9 E-C	10 E-C	11 E-C	12 E-C	13 E-C	14 E-C	15 E-C	16 E-C	17 E-C	Means E - C
1	3-3	2-3	N-N	3-2	2-3	N-2	N-3	N-2	N-2	N-N	N-N	2-2	3-3	3-3	3-3	N-N	3-3	2.7-2.6
2	0-N	0-N	0-N	0-N	0-N	0-N	0-N	0-N	0-N	0-N	0-N	0-N	0-N	0-N	0-N	0-N	0-N	0.0- N
3	3-3	3-2	2-N	N-2	2-1	2-3	N-3	N-N	N-3	N-N	3-N	2-2	2-3	3-3	3-3	N-N	3-3	2.5-2.6
4	3-2	3-3	3-N	3-3	2-N	N-N	N-N	N-N	2-N	N-N	N-N	2-N	2-N	3-N	3-N	N-N	3-N	2.6-2.7
5	3-3	2-3	N-N	N-N	N-3	N-3	N-3	N-N	N-N	N-2	N-3	N-2	3-3	2-3	3-3	N-N	3-3	2.7-2.8
6	3-2	3-2	N-N	N-N	2-N	N-N	N-N	N-N	N-2	N-3	3-3	2-N	3-3	3-3	3-3	N-N	3-3	2.8-2.7
7n	3-3	3-3	N-N	3-3	3-N	N-2	N-3	N-N	3-3	3-2	3-3	2-2	3-3	3-3	1-3	N-N	3-3	2.8-2.8
8	3-0	3-0	N-0	2-0	3-0	2-0	2-0	N-0	3-0	2-0	3-0	2-0	3-0	3-0	3-0	N-0	3-0	2.6-0.0
9	0-3	0-3	0-N	0-N	0-N	0-N	0-N	0-N	0-3	0-3	0-3	0-2	0-3	0-3	0-3	0-N	0-3	0.0-2.9
10	3-3	3-3	N-N	N-3	N-3	3-N	3-3	N-N	2-3	3-3	3-3	3-N	3-3	3-3	1-3	N-3	3-3	2.8-3.0
														Means of Total				2.4-2.5

TABLE XXV

RATINGS OF SUBJECTS' YOUNGER SIBS ON SEVENTEEN BEHAVIORAL VARIABLES, FIRST TEN YEARS OF LIFE

Var.# Pair#	1 E-C	2 E-C	3 E-C	4 E-C	5 E-C	6 E-C	7 E-C	8 E-C	9 E-C	10 E-C	11 E-C	12 E-C	13 E-C	14 E-C	15 E-C	16 E-C	17 E-C	Means E - C
1	3-3	3-3	N-N	N-N	N-2	N-2	N-2	N-N	N-N	N-N	N-2	2-2	3-3	3-3	3-3	N-N	3-3	2.9-2.5
2	3-3	3-3	2-N	2-3	3-2	N-3	N-3	N-N	N-3	N-3	3-3	1-2	3-3	3-3	3-3	N-N	3-3	2.6-2.9
3	0-3	0-3	0-N	0-N	0-N	0-N	0-N	0-N	0-N	0-N	0-3	0-3	0-3	0-3	0-3	0-N	0-3	0.0-3.0
4	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0.0-0.0
5	3-3	3-3	3-N	2-N	2-3	N-N	N-N	N-N	N-N	N-N	N-3	N-2	N-3	N-3	N-3	N-N	3-3	2.7-2.9
6	3-3	3-3	N-N	N-N	N-3	N-N	N-N	N-N	N-2	N-N	3-3	2-N	3-3	3-3	3-3	N-N	3-3	2.9-2.9
7	3-0	3-0	N-0	N-0	3-0	N-0	N-0	N-0	3-0	2-0	3-0	3-0	3-0	3-0	1-0	N-0	3-0	2.7-0.0
8	3-3	3-3	N-N	N-N	N-2	N-N	N-N	N-3	N-3	N-3	N-3	2-3	3-3	3-3	3-3	N-N	3-3	2.9-2.9
9	3-0	3-0	N-0	3-0	N-0	N-0	N-0	N-0	N-0	N-0	N-0	N-0	3-0	3-0	3-0	N-0	3-0	3.0-0.0
10	3-3	3-3	N-N	N-3	N-3	3-3	3-3	N-N	2-3	3-3	3-3	3-N	3-3	3-3	1-3	N-3	3-3	2.8-3.0
																	Means of Total	2.3-2.0

TABLE XXVI

RATINGS OF SUBJECTS' MALE PEERS ON SEVENTEEN BEHAVIORAL VARIABLES, FIRST TEN YEARS OF LIFE

Var.# Pair#	1 E-C	2 E-C	3 E-C	4 E-C	5 E-C	6 E-C	7 E-C	8 E-C	9 E-C	10 E-C	11 E-C	12 E-C	13 E-C	14 E-C	15 E-C	16 E-C	17 E-C	Means E - C
1	2-3	3-3	N-N	N-N	N-2	N-N	N-N	N-N	N-N	2-N	N-N	2-2	3-3	3-3	3-3	N-N	3-3	2.6-2.8
2	3-3	3-3	N-N	2-N	2-N	2-N	2-N	N-N	N-3	2-3	N-N	2-N	3-N	3-N	2-N	N-N	3-3	2.4-3.0
3	3-3	3-3	N-N	N-3	N-3	N-3	2-3	N-N	N-N	N-N	N-N	2-2	3-2	3-3	N-2	N-N	3-3	2.7-2.7
4	2-3	3-3	N-N	N-N	2-N	2-3	N-2	N-N	N-3	N-3	N-N	N-2	3-3	3-3	2-3	N-N	3-3	2.5-2.8
5	2-3	3-3	2-N	2-N	2-3	N-3	N-3	N-N	N-N	2-N	N-N	N-2	2-3	3-3	3-N	N-N	3-3	2.4-2.9
6	3-3	3-3	N-N	N-N	3-N	N-3	N-3	N-N	N-3	N-3	N-N	3-N	3-3	3-3	2-2	N-N	3-3	2.9-2.9
7	3-1	3-2	N-N	N-N	3-N	2-N	2-N	N-N	3-3	3-2	N-3	N-2	2-3	3-2	N-N	N-N	3-N	2.7-2.3
8	2-3	2-3	N-N	N-N	N-3	2-2	2-2	N-N	2-3	3-3	2-N	2-2	3-3	3-3	2-N	N-N	3-3	2.3-2.7
9	3-3	3-3	N-N	N-N	3-3	3-3	2-3	N-N	N-3	N-3	N-N	N-2	3-3	3-3	N-N	N-N	3-3	2.9-2.9
10	2-3	3-3	N-N	N-N	N-N	3-N	3-N	N-N	3-N	3-3	N-N	N-N	3-3	3-3	N-3	N-3	3-3	2.9-3.0
																	Means of Total	2.6-2.8

APPENDIX IV

TABLE XXVII

FREQUENCY OF CONTACT BY STIMULUS CATEGORIES,

FIRST TEN YEARS OF LIFE

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Mother	30	10	3.0	30	10	3.0	.62
Father	25	10	2.5	30	10	3.0	.17
Older Sibs	24	10	2.4	22	9	2.4	.62
Younger Sibs	24	10	2.4	21	10	2.1	.73
Male Peers	25	10	2.5	28	10	2.8	.17
Totals	128	50	2.6	131	49	2.7	.172

TABLE XXVII

PLAY ACTIVITIES BY STIMULUS CATEGORIES,

FIRST TEN YEARS OF LIFE

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Mother	21	9	2.3	23	9	2.6	.50
Father	23	10	2.3	22	10	2.2	.62
Older Sibs	22	10	2.2	22	9	2.4	.62
Younger Sibs	24	10	2.4	21	10	2.1	.50
Male Peers	29	10	2.9	29	10	2.9	.62
Totals	119	49	2.4	117	48	2.4	.500

TABLE XXIX

DISPLAYS OF AFFECTION BY STIMULUS CATEGORIES,

FIRST TEN YEARS OF LIFE

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Mother	16	7	2.3	25	9	2.8	.34
Father	10	6	1.7	15	6	2.5	-
Older Sibs	5	4	1.3	0	1	0.0	-
Younger Sibs	5	4	1.3	0	3	0.0	-
Male Peers	2	1	2.0	-	-	-	-
Totals	38	22	1.7	40	19	1.3	.145

TABLE XXX

PROVIDING BEHAVIOR BY STIMULUS CATEGORIES,

FIRST TEN YEARS OF LIFE

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Mother	29	10	2.9	30	10	3.0	.50
Father	28	10	2.8	28	10	2.8	.62
Older Sibs	11	6	1.8	13	6	2.2	-
Younger Sibs	7	5	1.4	6	5	1.2	-
Male Peers	4	2	2.0	3	1	3.0	-
Totals	79	33	2.2	80	32	2.4	.500

TABLE XXXI

RESTRAINTS BY STIMULUS CATEGORIES,

FIRST TEN YEARS OF LIFE

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Mother	23	10	2.3	26	10	2.6	.50
Father	18	8	2.3	23	10	2.3	.50
Older Sibs	14	8	1.8	10	5	2.0	-
Younger Sibs	8	5	1.6	15	9	1.7	-
Male Peers	15	6	2.5	14	5	2.8	-
Totals	78	37	2.1	88	39	2.3	.377

TABLE XXXII

PHYSICAL PUNISHMENT BY STIMULUS CATEGORIES,

FIRST TEN YEARS OF LIFE

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Mother	20	9	2.2	27	10	2.7	.09
Father	12	7	1.7	17	9	1.9	.36
Older Sibs	7	5	1.4	10	5	2.0	-
Younger Sibs	3	3	1.0	8	6	1.3	-
Male Peers	14	6	2.3	17	6	2.8	-
Totals	56	30	1.7	79	36	2.1	.114

TABLE XXXIII

VERBAL PUNISHMENT BY STIMULUS CATEGORIES,

FIRST TEN YEARS OF LIFE

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Mother	16	6	2.7	21	8	2.6	-
Father	16	8	2.0	17	7	2.4	.34
Older Sibs	5	4	1.3	15	6	2.5	-
Younger Sibs	3	3	1.0	8	6	1.3	-
Male Peers	13	6	2.2	16	6	2.7	-
Totals	53	27	1.8	77	33	2.3	-

TABLE XXXIV

INTELLECTUAL BEHAVIOR BY STIMULUS CATEGORIES,

FIRST TEN YEARS OF LIFE

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Mother	6	3	2.0	5	2	2.5	-
Father	2	1	2.0	3	1	3.0	-
Older Sibs	0	2	0.0	2	2	1.0	-
Younger Sibs	0	2	0.0	3	4	0.8	-
Male Peers	-	-	-	-	-	-	-
Totals	8	8	1.0	13	9	1.8	-

TABLE XXXV

STATUS BY STIMULUS CATEGORIES,

FIRST TEN YEARS OF LIFE

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Mother	16	6	2.7	25	9	2.8	.50
Father	16	8	2.0	22	9	2.4	.36
Older Sibs	10	6	1.7	16	7	2.3	-
Younger Sibs	5	4	1.3	11	7	1.6	-
Male Peers	8	3	2.7	18	6	3.0	-
Totals	55	27	2.1	92	38	2.4	.109

TABLE XXXVI

SOCIAL BEHAVIOR BY STIMULUS CATEGORIES,

FIRST TEN YEARS OF LIFE

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Mother	23	10	2.3	28	10	2.8	.27
Father	19	8	2.4	23	8	2.9	.36
Older Sibs	8	5	1.6	13	6	2.2	-
Younger Sibs	5	4	1.3	9	6	1.5	-
Male Peers	15	6	2.5	20	7	2.9	-
Totals	70	33	2.0	93	37	2.5	.254

TABLE XXXVII

RELIGIOUS BEHAVIOR BY STIMULUS CATEGORIES,

FIRST TEN YEARS OF LIFE

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Mother	25	10	2.5	29	10	2.9	.38
Father	19	8	2.4	27	10	2.7	.36
Older Sibs	15	7	2.1	15	6	2.5	-
Younger Sibs	12	6	2.0	20	10	2.0	.66
Male Peers	2	1	2.0	3	1	3.0	-
Totals	73	32	2.2	94	37	2.6	.500

TABLE XXXVIII

PHYSICAL HEALTH BY STIMULUS CATEGORIES,

FIRST TEN YEARS OF LIFE

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Mother	21	10	2.1	29	10	2.9	.05
Father	25	10	2.5	25	10	2.5	.62
Older Sibs	15	9	1.7	10	6	1.7	-
Younger Sibs	13	8	1.6	12	8	1.5	.34
Male Peers	11	5	2.2	14	7	2.0	-
Totals	85	42	2.0	90	41	2.1	.377

TABLE XXXIX

COMPATIBILITY BY STIMULUS CATEGORIES,

FIRST TEN YEARS OF LIFE

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Mother	23	9	2.6	29	10	2.9	.17
Father	22	9	2.4	28	10	2.8	.25
Older Sibs	22	10	2.2	21	8	2.6	.50
Younger Sibs	21	9	2.3	21	10	2.1	.75
Male Peers	28	10	2.8	26	9	2.9	.50
Totals	116	47	2.5	125	47	2.7	.275

TABLE XL

ROLE BY STIMULUS CATEGORIES,

FIRST TEN YEARS OF LIFE

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Mother	27	10	2.7	29	10	2.9	.38
Father	23	10	2.3	29	10	2.9	.06
Older Sibs	23	10	2.3	21	8	2.6	.50
Younger Sibs	21	9	2.3	21	10	2.1	.75
Male Peers	30	10	3.0	26	9	2.9	.50
Totals	124	49	2.5	126	47	2.7	.275

TABLE XLI

VARIABILITY OF HABITAT BY STIMULUS CATEGORIES,

FIRST TEN YEARS OF LIFE

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Mother	24	10	2.4	29	10	2.9	.27
Father	22	10	2.2	29	10	2.9	.27
Older Sibs	20	10	2.0	21	8	2.6	.36
Younger Sibs	17	9	1.9	21	10	2.1	.62
Male Peers	14	6	2.3	13	5	2.6	-
Totals	97	45	2.2	113	43	2.6	.172

TABLE XLII

SEXUAL BEHAVIOR BY STIMULUS CATEGORIES,

FIRST TEN YEARS OF LIFE

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Mother	-	-	-	-	-	-	-
Father	-	-	-	-	-	-	-
Older Sibs	0	2	0.0	3	2	1.5	-
Younger Sibs	0	2	0.0	3	4	0.8	-
Male Peers	-	-	-	3	1	3.0	-
Totals	0	4	0.0	9	7	1.1	-

TABLE XLIII

DEVIANT BEHAVIOR BY STIMULUS CATEGORIES,

FIRST TEN YEARS OF LIFE

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Mother	26	10	2.6	30	10	3.0	.38
Father	27	10	2.7	29	10	2.9	.38
Older Sibs	24	10	2.4	21	8	2.6	.64
Younger Sibs	24	10	2.4	21	10	2.1	.73
Male Peers	30	10	3.0	27	9	3.0	.62
Totals	131	50	2.6	128	47	2.7	.377

TABLE XLIV

MEAN STIMULUS RATINGS BY SUBJECT AND VARIABLE,

FIRST TEN YEARS OF LIFE

Pair#	1		2		3		4		5		6	
Var.#	E	C	E	C	E	C	E	C	E	C	E	C
1	2.8	3.0	2.2	3.0	2.2	3.0	1.8	2.2	2.8	3.0	3.0	2.8
2	2.2	3.0	2.2	2.5	2.0	2.4	2.0	2.0	2.4	3.0	2.8	2.4
3	N	3.0	1.7	2.0	1.3	3.0	1.5	0.0	2.0	3.0	N	2.0
4	2.7	2.7	2.0	3.0	2.0	2.8	2.0	1.8	2.5	3.0	3.0	3.0
5	1.7	2.4	2.2	2.0	1.8	2.3	1.3	1.7	1.8	3.0	2.3	2.0
6	3.0	2.3	1.3	2.3	1.3	2.3	1.3	1.8	2.5	3.0	2.0	2.3
7	N	2.7	1.3	2.7	1.5	2.8	N	1.5	N	3.0	N	2.3
8	N	N	N	N	N	N	N	N	N	N	N	N
9	N	N	2.0	3.0	N	3.0	1.0	1.8	N	N	N	2.2
10	2.0	3.0	1.7	3.0	1.0	N	N	2.3	2.0	2.7	3.0	3.0
11	N	2.3	2.5	2.8	2.0	2.3	N	N	3.0	3.0	3.0	3.0
12	1.8	2.4	1.6	2.8	1.6	2.6	1.8	1.5	2.0	2.2	2.6	2.5
13	2.5	2.4	1.8	2.3	1.8	2.8	1.8	2.3	2.8	2.8	2.8	3.0
14	2.6	3.0	2.2	3.0	2.2	3.0	2.0	1.8	2.5	3.0	3.0	3.0
15	3.0	3.0	2.2	2.2	2.3	2.8	1.8	2.3	3.0	3.0	2.8	2.8
16	N	N	N	N	N	N	N	N	N	N	N	N
17	2.4	3.0	2.4	3.0	2.4	3.0	2.0	2.0	3.0	3.0	3.0	3.0
Mean	2.4	2.7	2.0	2.6	1.8	2.7	1.6	1.8	2.5	2.9	2.8	2.6

TABLE XLIV (continued)

Pair#	7		8		9		10		
Var.#	E	C	E	C	E	C	E	C	P
1	3.0	2.0	2.6	2.4	2.2	2.4	2.8	3.0	.172
2	3.0	2.0	2.6	2.2	2.0	2.0	3.0	3.0	.500
3	3.0	1.5	1.0	1.7	1.3	1.5	2.5	3.0	.145
4	3.0	3.0	2.7	2.0	2.3	2.0	2.7	3.0	.500
5	3.0	1.7	2.7	1.8	2.0	2.3	2.5	3.0	.377
6	2.0	2.0	1.8	1.5	1.5	2.0	2.6	2.7	.114
7	N	1.7	2.0	2.0	1.5	N	2.8	3.0	--
8	N	N	N	2.3	N	N	N	N	--
9	2.8	2.2	2.3	2.4	1.7	2.2	2.2	3.0	.109
10	2.0	1.8	2.5	2.4	0.7	2.3	3.0	2.8	.254
11	2.5	2.2	2.5	2.3	0.7	2.3	3.0	3.0	.500
12	2.3	1.8	2.4	2.2	1.0	2.2	2.2	2.5	.377
13	2.8	2.4	2.8	2.4	2.0	2.4	2.6	3.0	.275
14	3.0	2.2	3.0	2.4	2.0	2.4	2.8	3.0	.275
15	1.0	2.3	2.8	2.3	1.3	2.3	1.0	3.0	.172
16	N	N	N	N	N	N	N	N	--
17	3.0	2.3	3.0	2.3	2.0	2.3	3.0	3.0	.377
Mean	2.7	2.1	2.4	2.2	1.6	2.2	2.6	2.9	.172

APPENDIX V

TABLE XLV

RATINGS OF SUBJECTS' WIVES ON SEVENTEEN BEHAVIORAL VARIABLES,

CROSS-SECTIONAL

Var.# Pair#	1 E-C	2 E-C	3 E-C	4 E-C	5 E-C	6 E-C	7 E-C	8 E-C	9 E-C	10 E-C	11 E-C	12 E-C	13 E-C	14 E-C	15 E-C	16 E-C	17 E-C	Means E - C
1	3-3	3-3	3-3	3-3	2-3	3-3	3-3	3-2	3-3	3-3	3-2	2-3	3-3	2-3	3-3	N-2	3-3	2.8-2.8
2	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0.0-0.0
3	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0.0-0.0
4	3-3	3-3	3-3	3-3	N-3	N-N	N-N	N-N	3-3	2-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	2.9-3.0
5	3-3	2-3	2-3	3-3	2-3	N-N	N-N	N-N	3-3	3-3	3-3	3-3	2-3	3-3	3-3	1-3	3-3	2.6-3.0
6	3-2	3-2	3-1	3-3	3-2	N-N	N-2	N-N	3-3	3-N	2-3	2-1	2-3	2-3	3-3	3-1	3-3	2.9-2.1
7	3-3	3-3	3-N	3-3	N-3	N-N	N-N	N-N	3-3	N-3	2-3	2-3	3-3	3-3	3-3	3-N	3-3	2.8-3.0
8	3-0	N-0	3-0	3-0	N-0	N-0	N-0	N-0	N-0	N-0	3-0	2-0	N-0	N-0	N-0	N-0	N-0	2.8-0.0
9	3-3	3-3	3-3	3-3	3-3	N-N	N-N	N-N	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-N	3-3	3.0-3.0
10	3-3	3-3	3-3	2-3	2-3	N-3	N-3	N-N	3-3	3-3	2-N	3-2	3-3	3-3	3-3	3-3	3-3	2.8-2.9
														Means of Total				2.3-2.0

TABLE XLVI

RATINGS OF SUBJECTS' CHILDREN ON SEVENTEEN BEHAVIORAL VARIABLES, CROSS-SECTIONAL

Var.# Pair#	1 E-C	2 E-C	3 E-C	4 E-C	5 E-C	6 E-C	7 E-C	8 E-C	9 E-C	10 E-C	11 E-C	12 E-C	13 E-C	14 E-C	15 E-C	16 E-C	17 E-C	Means E - C
1	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0-0	0.0-0.0
2	3-0	3-0	3-0	3-0	3-0	N-0	N-0	N-0	3-0	2-0	N-0	2-0	3-0	3-0	3-0	N-0	3-0	2.8-0.0
3	0-1	0-0	0-0	0-2	0-N	0-N	0-N	0-N	0-N	0-N	0-N	0-N	0-1	0-N	0-N	0-N	0-N	0.0-0.8
4	3-3	3-3	2-N	N-N	N-N	N-N	N-N	N-N	3-3	3-N	N-N	3-N	3-3	3-3	3-3	N-N	3-3	2.9-3.0
5	3-3	3-3	1-3	N-N	1-N	N-N	N-N	N-N	3-N	3-N	N-3	2-3	1-N	3-3	3-3	N-N	3-3	2.4-3.0
6	3-3	3-3	3-2	3-N	3-N	N-N	N-N	N-N	N-3	N-3	N-N	N-3	N-3	3-3	3-3	N-N	3-3	3.0-2.9
7	3-3	3-3	3-3	N-3	N-N	N-N	N-N	N-N	3-3	N-N	N-N	N-3	N-3	3-3	3-3	N-N	3-3	3.0-3.0
8	0-2	0-3	0-N	0-3	0-N	0-N	0-N	0-N	0-3	0-3	0-N	0-3	0-3	0-3	0-3	0-N	0-3	0.0-2.9
9	0-3	0-3	0-N	0-3	0-N	0-N	0-N	0-N	0-3	0-N	0-N	0-3	0-N	0-3	0-3	0-N	0-3	0.0-3.0
10	3-3	3-3	3-N	3-3	N-N	N-N	N-N	N-N	3-3	3-3	N-N	N-N	3-3	N-3	N-3	N-N	3-3	3.0-3.0
														Means of Total				1.7-2.2

TABLE XLVII

RATINGS OF SUBJECTS' SIBLINGS ON SEVENTEEN BEHAVIORAL VARIABLES,

CROSS-SECTIONAL

Var.# Pair#	1 E-C	2 E-C	3 E-C	4 E-C	5 E-C	6 E-C	7 E-C	8 E-C	9 E-C	10 E-C	11 E-C	12 E-C	13 E-C	14 E-C	15 E-C	16 E-C	17 E-C	Means E - C
1	3-2	3-2	3-3	3-N	3-N	3-N	3-N	N-N	3-N	3-N	N-N	3-N	3-2	3-N	3-N	N-N	3-N	3.0-2.3
2	3-3	3-2	N-N	3-3	3-2	3-N	3-N	3-N	3-N	2-3	3-N	3-3	3-2	3-3	3-N	N-N	3-3	2.9-2.7
3	3-3	3-3	3-N	3-3	3-N	N-N	N-N	N-N	3-3	3-N	3-3	3-N	3-3	3-3	3-3	N-N	3-3	2.0-2.0
4	1-0	3-0	2-0	N-0	N-0	N-0	N-0	N-0	2-0	N-0	N-0	2-0	2-0	2-0	3-0	N-0	3-0	2.2-0.0
5	2-3	3-3	N-3	3-N	N-N	N-N	N-N	N-N	3-3	N-N	N-N	3-N	3-N	3-3	N-3	N-N	3-3	2.9-3.0
6	3-3	3-3	N-2	N-3	N-N	N-N	N-N	N-N	3-3	3-3	3-N	3-2	3-N	3-N	3-3	N-N	3-3	3.0-2.8
7	3-3	3-3	3-N	3-N	N-N	N-N	N-N	N-N	3-3	3-3	N-N	N-3	3-3	3-3	3-3	N-N	3-3	3.0-3.0
8	3-2	3-3	2-2	3-3	N-N	N-N	N-N	N-N	3-3	N-N	N-N	N-N	3-N	3-3	3-3	N-N	3-3	2.9-2.8
9	3-2	3-3	3-N	3-N	N-N	N-N	N-N	N-N	3-3	N-3	N-3	3-2	N-2	3-2	3-2	N-N	3-2	3.0-2.4
10	3-3	3-3	N-3	3-N	N-N	N-N	N-N	N-N	3-2	3-N	3-N	3-2	3-3	3-3	3-3	N-N	3-3	3.0-2.8
																	Means of Total	2.9-2.5

TABLE XLVIII

RATINGS OF SUBJECTS' MALE PEERS ON SEVENTEEN BEHAVIORAL VARIABLES, CROSS-SECTIONAL

Var.# Pair#	1 E-C	2 E-C	3 E-C	4 E-C	5 E-C	6 E-C	7 E-C	8 E-C	9 E-C	10 E-C	11 E-C	12 E-C	13 E-C	14 E-C	15 E-C	16 E-C	17 E-C	Means E - C
1	3-3	3-3	N-N	3-3	N-3	3-3	3-3	3-N	3-3	3-3	3-N	N-N	3-3	3-3	3-3	N-N	3-3	3.0-3.0
2	3-2	3-3	3-N	3-N	3-N	3-N	3-N	3-3	3-3	3-3	N-N	N-N	3-3	3-3	2-3	N-N	3-3	2.9-2.9
3	3-3	3-3	N-N	3-N	3-N	3-N	3-N	N-N	3-2	3-3	3-3	3-N	3-3	3-3	3-3	N-N	3-3	3.0-2.9
4	3-3	3-3	2-N	3-3	N-N	N-N	N-N	N-N	3-3	3-3	N-3	N-2	3-3	3-3	3-2	N-N	3-3	2.9-2.8
5	3-3	2-3	N-3	3-3	N-N	N-N	N-N	3-N	3-3	3-3	3-3	N-N	2-N	3-3	N-N	N-N	3-3	2.8-3.0
6	3-3	3-3	3-3	3-N	3-N	N-N	N-N	N-N	N-N	3-3	3-3	N-N	N-3	N-N	N-N	N-N	N-3	3.0-3.0
7	3-3	3-3	N-N	N-3	N-3	N-N	N-N	N-N	N-3	3-3	N-N	2-2	3-3	3-3	3-3	N-N	3-3	2.9-2.9
8	2-3	2-3	N-3	3-3	N-N	N-N	N-N	N-N	3-3	3-3	3-N	N-N	N-3	3-3	N-3	2-N	3-3	2.7-3.0
9	3-3	3-3	N-N	3-N	N-N	N-N	N-N	N-N	3-3	3-3	N-3	3-3	3-3	3-3	3-3	N-N	3-3	3.0-3.0
10	2-3	3-3	N-N	N-N	N-N	N-N	N-N	N-N	3-N	3-3	3-3	2-N	3-3	N-N	3-3	N-N	3-3	2.8-3.0
																	Means of Total	2.9-3.0

APPENDIX VI

TABLE XLIX

FREQUENCY OF CONTACT BY STIMULUS CATEGORIES,

CROSS-SECTIONAL

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Wife	24	10	2.4	20	10	2.0	.83
Children	18	10	1.8	21	10	2.1	.38
Siblings	27	10	2.7	24	10	2.4	.89
Male Peers	28	10	2.8	29	10	2.9	.38
Totals	97	40	2.4	94	40	2.4	.726

TABLE L

PLAY ACTIVITIES BY STIMULUS CATEGORIES,

CROSS-SECTIONAL

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Wife	20	9	2.2	20	10	2.0	.62
Children	18	10	1.8	21	10	2.1	.50
Siblings	30	10	3.0	25	10	2.5	.89
Male Peers	28	10	2.8	30	10	3.0	.38
Totals	96	39	2.5	96	40	2.4	.500

TABLE LI

DISPLAYS OF AFFECTION BY STIMULUS CATEGORIES,

CROSS-SECTIONAL

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Wife	23	10	2.3	16	9	1.8	.75
Children	15	10	1.5	8	6	1.3	.77
Siblings	16	6	2.7	13	6	2.2	-
Male Peers	8	3	2.7	9	3	3.0	-
Totals	62	29	2.3	46	24	2.1	.828

TABLE LII

PROVIDING BEHAVIOR BY STIMULUS CATEGORIES,

CROSS-SECTIONAL

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Wife	23	10	2.3	21	10	2.1	.62
Children	9	7	1.3	14	7	2.0	.34
Siblings	24	8	3.0	12	5	2.4	-
Male Peers	24	8	3.0	15	5	3.0	-
Totals	80	33	2.4	62	27	2.4	.623

TABLE LIII

RESTRAINTS BY STIMULUS CATEGORIES,

CROSS-SECTIONAL

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Wife	12	7	1.7	20	10	2.0	.36
Children	7	7	1.0	0	2	0.0	-
Siblings	9	3	3.0	2	2	1.0	-
Male Peers	9	3	3.0	6	2	3.0	-
Totals	37	20	2.2	28	16	1.5	-

TABLE LIV

PHYSICAL PUNISHMENT BY STIMULUS CATEGORIES,

CROSS-SECTIONAL

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Wife	3	3	1.0	6	5	1.2	-
Children	0	4	0.0	0	2	0.0	-
Siblings	6	2	3.0	0	1	0.0	-
Male Peers	9	3	3.0	3	1	3.0	-
Totals	18	12	1.8	9	9	1.1	-

TABLE LV

VERBAL PUNISHMENT BY STIMULUS CATEGORIES,

CROSS-SECTIONAL

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Wife	3	3	1.0	8	6	1.3	-
Children	0	4	0.0	0	2	0.0	-
Siblings	6	2	3.0	0	1	0.0	-
Male Peers	9	3	3.0	3	1	3.0	-
Totals	18	12	1.8	11	10	1.1	-

TABLE LVI

INTELLECTUAL BEHAVIOR BY STIMULUS CATEGORIES,

CROSS-SECTIONAL

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Wife	3	3	1.0	2	4	0.5	-
Children	0	4	0.0	0	2	0.0	-
Siblings	3	1	3.0	0	1	0.0	-
Male Peers	9	3	3.0	3	1	3.0	-
Totals	15	11	1.8	5	8	0.9	-

TABLE LVII

STATUS BY STIMULUS CATEGORIES,

CROSS-SECTIONAL

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Wife	21	9	2.3	21	10	2.1	.62
Children	15	9	1.7	18	8	2.3	.50
Siblings	23	10	2.3	20	8	2.5	.86
Male Peers	24	8	3.0	23	8	2.9	.77
Totals	83	36	2.3	82	34	2.5	.887

TABLE LVIII

SOCIAL BEHAVIOR BY STIMULUS CATEGORIES,

CROSS-SECTIONAL

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Wife	17	8	2.1	18	9	2.0	.50
Children	11	8	1.4	9	5	1.8	-
Siblings	17	6	2.8	12	5	2.4	-
Male Peers	30	10	3.0	30	10	3.0	.62
Totals	75	32	2.3	69	29	2.3	.623

TABLE LIX

RELIGIOUS BEHAVIOR BY STIMULUS CATEGORIES,

CROSS-SECTIONAL

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Wife	21	10	2.1	17	9	1.9	.62
Children	0	4	0.0	3	3	1.0	-
Siblings	12	4	3.0	6	3	2.0	-
Male Peers	18	6	3.0	18	6	3.0	-
Totals	51	24	2.0	44	21	2.0	.637

TABLE LX

PHYSICAL HEALTH BY STIMULUS CATEGORIES,

CROSS-SECTIONAL

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Wife	21	10	2.1	18	10	1.8	.73
Children	7	7	1.0	15	7	2.1	-
Siblings	23	8	2.9	12	6	2.0	-
Male Peers	10	4	2.5	7	3	2.3	-
Totals	61	29	2.1	52	26	2.1	.500

TABLE LXI

COMPATIBILITY BY STIMULUS CATEGORIES,

CROSS-SECTIONAL

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Wife	20	9	2.2	20	10	2.0	.62
Children	10	8	1.3	16	8	2.0	.50
Siblings	26	9	2.9	15	7	2.1	.94
Male Peers	23	8	2.9	27	9	3.0	.64
Totals	79	34	2.3	78	34	2.3	.500

TABLE LXII

ROLE BY STIMULUS CATEGORIES,

CROSS-SECTIONAL

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Wife	20	9	2.2	20	10	2.0	.62
Children	15	9	1.7	21	9	2.3	.50
Siblings	29	10	2.9	20	8	2.5	.86
Male Peers	24	8	3.0	24	8	3.0	.62
Totals	88	36	2.5	85	35	2.5	.377

TABLE LXIII

VARIABILITY OF HABITAT BY STIMULUS CATEGORIES,

CROSS-SECTIONAL

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Wife	21	9	2.3	21	10	2.1	.62
Children	15	9	1.7	21	9	2.3	.50
Siblings	27	9	3.0	20	8	2.5	.86
Male Peers	20	7	2.9	23	8	2.9	.64
Totals	83	34	2.5	85	35	2.5	.623

TABLE LXIV

SEXUAL BEHAVIOR BY STIMULUS CATEGORIES,

CROSS-SECTIONAL

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Wife	16	8	2.0	12	8	1.5	.66
Children	0	4	0.0	0	2	0.0	-
Siblings	-	-	-	0	1	0.0	-
Male Peers	2	1	2.0	-	-	-	-
Totals	18	13	1.3	12	11	0.5	--

TABLE LXV

DEVIANT BEHAVIOR BY STIMULUS CATEGORIES,

CROSS-SECTIONAL

	Experimental			Control			
Stimulus	Sum of Ratings	No. of S's Rated	Mean Rating	Sum of Ratings	No. of S's Rated	Mean Rating	P Value
Wife	21	9	2.3	21	10	2.1	.62
Children	18	10	1.8	21	9	2.3	.50
Siblings	30	10	3.0	23	9	2.6	.83
Male Peers	27	9	3.0	30	10	3.0	.62
Totals	96	38	2.5	95	38	2.5	.623

TABLE LXVI

MEAN STIMULUS RATING BY SUBJECT AND VARIABLE,

CROSS-SECTIONAL

Pair#	1		2		3		4		5		6	
Var.#	E	C	E	C	E	C	E	C	E	C	E	C
1	2.3	2.0	2.3	1.3	1.5	1.8	2.5	2.3	2.8	3.0	3.0	2.8
2	2.3	2.0	2.3	1.3	3.0	3.0	3.0	2.3	2.5	3.0	2.3	3.0
3	2.0	2.0	2.0	0.0	1.0	0.0	2.3	2.5	1.5	3.0	3.0	2.0
4	2.3	2.0	2.3	1.0	1.5	1.7	3.0	2.0	3.0	3.0	3.0	3.0
5	1.7	2.0	2.3	0.7	2.0	0.0	N	1.5	1.5	N	3.0	N
6	2.3	1.5	2.0	0.0	1.0	N	N	N	N	N	N	N
7	2.3	2.0	2.0	0.0	1.0	N	N	N	N	N	N	N
8	2.0	1.0	2.0	1.0	N	N	N	N	N	N	N	N
9	2.3	2.0	2.3	1.0	2.0	1.7	2.7	2.3	3.0	3.0	3.0	3.0
10	2.3	2.0	1.8	1.4	1.5	1.5	2.7	2.0	3.0	3.0	3.0	3.0
11	2.0	1.0	1.5	0.0	1.5	2.0	N	2.0	3.0	3.0	2.5	3.0
12	1.7	1.5	1.7	1.0	1.5	N	2.7	1.7	2.7	3.0	2.5	3.0
13	2.3	2.0	2.3	1.3	1.5	1.8	2.8	2.3	2.0	N	2.5	3.0
14	2.0	2.0	2.3	1.5	1.5	2.0	2.8	2.3	3.0	3.0	2.7	3.0
15	2.3	2.0	2.7	1.5	1.5	2.0	3.0	2.0	3.0	3.0	3.0	3.0
16	N	1.0	N	0.0	0.0	N	N	1.5	N	N	N	N
17	2.3	2.0	2.3	2.0	1.5	2.0	3.0	2.3	3.0	3.0	3.0	3.0
Mean	2.1	1.7	2.1	0.9	1.5	1.6	2.8	2.0	2.6	3.0	2.6	2.9

TABLE LXVI (continued)

Pair#	7		8		9		10		P
Var.#	E	C	E	C	E	C	E	C	
1	3.0	3.0	2.0	1.8	2.3	2.8	2.8	3.0	.726
2	3.0	3.0	1.7	2.3	2.3	3.0	3.0	3.0	.500
3	3.0	3.0	1.7	1.7	2.0	3.0	3.0	3.0	.828
4	3.0	3.0	2.3	2.3	2.3	3.0	2.7	3.0	.623
5	N	3.0	N	N	1.5	N	N	N	.--
6	N	N	N	N	N	N	N	N	--
7	N	N	N	N	N	N	N	N	--
8	N	N	N	N	N	N	N	N	--
9	3.0	3.0	2.0	2.3	2.3	3.0	3.0	2.7	.887
10	3.0	3.0	1.5	2.0	2.0	3.0	3.0	3.0	.623
11	N	N	2.0	N	1.5	3.0	2.7	2.5	.637
12	2.0	2.7	1.0	1.5	2.3	2.8	2.7	2.0	.500
13	3.0	3.0	1.5	2.0	2.0	2.7	3.0	3.0	.500
14	3.0	3.0	2.0	2.3	2.3	2.8	3.0	3.0	.377
15	3.0	3.0	1.5	2.3	2.3	2.8	3.0	3.0	.623
16	N	N	1.0	N	1.5	N	N	N	--
17	3.0	3.0	2.0	2.3	2.3	2.8	3.0	3.0	.623
Mean	2.9	2.9	1.7	2.1	2.1	2.9	2.9	2.9	.377

APPENDIX VII

TABLE LXVII

RATINGS OF OPERANT RESPONSES,

CROSS-SECTIONAL

Var.# Pair#	1.1 E-C	1.2 E-C	1.3 E-C	2.1 E-C	2.2 E-C	3.1 E-C	3.2 E-C	4.1 E-C	4.2 E-C	4.3 E-C	4.4 E-C	4.5 E-C	4.6 E-C	4.7 E-C
1	1-3	3-3	2-2	2-3	3-2	1-3	3-3	3-3	3-3	3-3	N-N	3-2	3-3	3-3
2	1-3	3-2	2-1	2-2	3-3	3-3	3-3	N-3	N-N	N-3	N-N	N-3	N-2	N-N
3	3-3	3-3	3-3	3-2	N-3	3-1	3-2	3-2	2-2	3-N	3-N	3-3	2-3	2-N
4	2-3	3-3	3-3	3-3	3-3	2-3	3-3	2-3	2-3	2-3	N-3	2-3	2-3	2-N
5	3-3	2-2	3-3	3-3	3-3	3-3	3-3	3-3	N-N	3-3	N-N	3-3	3-3	N-N
6	3-3	2-3	2-3	3-2	3-3	3-2	3-1	3-2	3-N	3-3	3-N	3-N	3-N	N-N
7	2-2	3-3	3-3	2-3	2-3	1-2	1-3	3-3	2-N	3-3	N-N	3-3	3-3	N-N
8	2-3	3-3	3-3	1-3	3-3	3-3	3-N	3-3	2-3	3-3	3-3	3-N	3-3	N-N
9	3-3	3-2	3-3	3-3	3-3	3-3	3-3	3-3	2-3	3-3	N-3	3-3	3-3	N-N
10	1-2	3-3	2-3	2-2	3-2	1-2	3-2	2-N	2-N	2-N	N-N	3-N	3-N	N-N

TABLE LXVII (continued)

Var.# Pair#	5.1 E-C	5.2 E-C	5.3 E-C	6.1 E-C	6.2 E-C	7.1 E-C	7.2 E-C	7.3 E-C	8.1 E-C	8.2 E-C	8.3 E-C	9.1 E-C	9.2 E-C
1	1-3	3-3	3-3	3-3	N-3	N-3	N-3	N-3	3-2	3-3	3-3	3-3	N-N
2	2-3	3-3	3-3	3-3	2-2	2-3	3-3	3-2	2-3	3-3	3-2	N-N	N-N
3	3-3	3-3	3-3	3-3	2-3	3-3	3-2	N-2	2-2	3-3	2-3	2-3	N-N
4	1-3	3-3	3-3	2-3	3-3	3-N	3-N	3-N	2-3	2-3	2-3	N-3	N-N
5	3-3	3-3	3-3	2-3	2-N	1-3	1-3	N-3	3-N	2-3	1-3	3-3	N-N
6	3-2	3-3	3-3	2-2	2-2	3-2	3-2	N-N	N-3	3-3	3-3	N-N	N-N
7	1-3	3-3	1-3	2-2	2-3	3-N	3-N	3-N	1-N	1-N	2-N	2-N	N-N
8	0-N	3-3	3-3	2-N	2-N	2-3	2-3	N-3	2-3	3-3	1-3	N-3	3-N
9	3-3	3-3	3-3	3-3	N-3	3-N	3-N	3-N	3-3	3-3	3-3	3-3	N-N
10	1-2	3-2	2-3	1-2	1-1	2-3	2-3	N-3	1-3	1-3	2-3	N-3	N-N

TABLE LXVII (continued)

Var.# Pair#	10.1 E-C	10.2 E-C	11.1 E-C	11.2 E-C	11.3 E-C	12.1 E-C	12.2 E-C	12.3 E-C	12.4 E-C	Means E - C
1	3-2	3-3	3-3	N-N	1-3	3-3	3-3	N-3	3-3	2.6-2.8
2	3-2	2-2	3-3	3-N	1-3	3-3	2-3	3-N	3-3	2.6-2.7
3	3-2	3-N	3-2	N-N	1-2	3-2	3-1	N-N	3-0	2.7-2.4
4	N-3	N-3	3-3	3-N	2-3	2-2	3-3	N-N	3-3	2.5-2.9
5	N-2	N-2	3-3	N-N	3-3	2-3	3-3	N-N	3-2	2.6-2.9
6	3-3	N-3	2-3	3-N	1-1	3-3	3-3	N-N	2-0	2.7-2.4
7	2-3	3-3	2-N	2-N	1-3	2-3	3-3	N-N	0-3	2.1-2.9
8	2-3	N-3	N-N	N-N	2-N	3-3	3-3	N-N	2-3	2.4-3.0
9	3-3	3-3	N-3	N-N	3-3	3-3	3-3	N-N	3-3	3.0-3.0
10	N-3	N-3	2-3	N-N	1-2	2-3	2-3	N-N	0-N	1.9-2.6
							Means of Total			2.5-2.8

APPENDIX VIII

TABLE LXVIII

DEPRIVATION SCALE SCORES FOR EXPERIMENTAL SUBJECTS

Item S #	1	2	3	4	5	6	7	8	9	10	Totals
1. Employment	1	1	1	1	0	1	1	1	1	1	9
2. Income	1	1	1	0	0	1	1	0	0	1	6
3. Debts	0	0	0	0	0	0	0	0	0	0	0
4. Job Participa.	1	1	1	1	0	1	1	1	1	1	9
5. Job Status	1	1	1	1	0	1	1	0	1	1	8
6. Status-Other	1	1	1	1	0	0	1	1	0	1	7
7. Education	0	0	0	0	0	0	1	0	0	1	2
8. Residence	0	0	0	0	0	0	0	1	0	0	1
9. Church	1	1	1	1	0	0	1	0	1	1	7
10. Other Organiza.	1	0	1	1	0	1	1	1	0	1	7
11. Friends	0	0	0	0	1	0	0	1	0	0	2
12. Relatives	0	0	0	1	0	0	0	0	0	0	1
13. Parents	1	0	1	1	0	1	1	1	1	1	8
14. Wife	0	1	1	0	1	0	0	0	0	0	3
15. Children	1	0	1	0	0	0	0	1	1	0	4
16. Fear	0	0	0	0	0	0	0	0	0	1	1
Totals	9	7	10	8	2	6	9	8	6	10	75

TABLE LXIX

DEPRIVATION SCALE SCORES FOR CONTROL SUBJECTS

Item S #	1	2	3	4	5	6	7	8	9	10	Totals
1. Employment	1	0	1	1	0	1	1	1	1	1	8
2. Income	0	0	1	0	0	1	1	0	0	1	4
3. Debts	0	0	0	0	0	0	0	0	0	0	0
4. Job Participa.	1	0	1	1	0	1	1	1	1	1	8
5. Job Status	1	0	1	1	0	1	1	1	1	1	8
6. Status-Other	0	0	1	0	1	1	1	0	0	1	5
7. Education	1	0	1	1	0	1	1	0	1	0	6
8. Residence	0	0	0	0	0	0	0	0	0	0	0
9. Church	0	1	0	0	0	0	1	1	0	0	3
10. Other Organiza.	0	1	1	0	1	0	1	1	0	1	6
11. Friends	0	0	0	0	0	0	0	0	0	0	0
12. Relatives	0	1	0	0	0	0	0	0	0	0	1
13. Parents	1	0	1	1	0	1	1	0	1	1	7
14. Wife	0	0	1	0	0	1	0	0	0	0	2
15. Children	1	1	1	0	0	0	0	0	0	0	3
16. Fear	0	0	0	0	0	0	0	0	0	0	0
Totals	6	4	10	5	2	8	9	5	5	7	61

APPENDIX IX

TABLE LXX

RELIABILITY STUDY: RATINGS OF Ss' MOTHERS
ON SEVENTEEN BEHAVIORAL VARIABLES,
FIRST TEN YEARS OF LIFE

Pair#	1		2		3		4		5	
Var.#	* E I-R	C I-R	E I-R	C I-R	E I-R	C I-R	E I-R	C I-R	E I-R	C I-R
1	3-1	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3
2	1-2	3-3	3-3	2-2	2-1	3-2	2-2	2-2	2-2	N-N
3	N-N	3-3	3-3	2-2	2-2	3-3	2-2	N-N	N-N	3-3
4	2-1	3-3	3-3	3-1	3-3	3-3	3-3	3-1	3-3	3-1
5	1-1	3-3	3-3	2-1	3-3	2-3	1-1	3-3	2-3	3-3
6	3-3	3-2	2-2	3-3	N-N	2-3	2-3	3-3	3-3	3-3
7	N-N	3-3	N-N	3-3	2-2	2-3	3-3	2-2	N-N	3-3
8	N-N	N-N	N-N	N-N	2-3	2-3	2-3	N-N	2-2	N-N
9	N-N	N-N	3-3	3-3	N-N	3-3	N-N	2-2	N-N	3-3
10	1-2	2-2	3-3	3-3	1-3	3-3	3-3	3-2	2-3	3-3
11	1-1	3-3	2-2	2-2	3-3	3-3	3-3	3-3	3-3	3-3
12	1-1	3-3	3-3	3-3	2-2	3-3	3-3	3-3	2-3	3-3
13	N-N	2-3	2-2	3-3	2-2	3-3	3-3	3-3	3-3	3-3
14	2-2	3-3	3-3	3-3	2-3	3-3	3-3	2-2	3-3	3-3
15	3-3	3-3	3-3	2-2	3-3	3-3	3-3	3-3	3-3	3-3
16	N-N	N-N	N-N	N-N	N-N	N-N	N-N	N-N	N-N	N-N
17	1-1	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3

TABLE LXX (continued)

Pair#	6		7		8		9		10	
	E	C	E	C	E	C	E	C	E	C
Var.#	*I-R	I-R	I-R	I-R	I-R	I-R	I-R	I-R	I-R	I-R
1	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3
2	2-2	2-2	3-3	3-3	3-3	3-3	N-N	2-2	3-3	3-3
3	N-N	2-2	3-3	2-2	1-2	3-1	2-1	3-3	3-3	3-3
4	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3
5	2-3	2-2	3-3	3-3	3-3	2-2	3-3	3-3	2-2	3-3
6	2-1	2-2	2-2	3-3	2-2	3-3	2-2	2-2	2-2	3-3
7	3-3	2-1	N-N	N-N	2-2	3-3	3-3	N-N	3-3	3-3
8	N-N	N-N	N-N	N-N	N-N	3-2	N-N	N-N	N-N	N-N
9	2-3	2-3	3-1	3-3	3-3	3-3	3-3	3-3	2-2	3-3
10	3-3	3-3	3-3	2-2	3-3	3-3	1-1	3-3	3-3	3-3
11	3-3	3-3	3-3	3-3	3-3	3-3	1-2	3-3	3-3	3-3
12	3-3	3-3	1-2	2-3	3-3	3-3	1-1	3-3	2-2	3-3
13	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	2-2	3-3
14	3-3	3-3	3-3	3-3	3-3	3-2	2-2	3-3	3-3	3-3
15	3-3	3-3	1-1	3-3	3-3	3-3	1-2	3-3	1-1	3-3
16	N-N	N-N	N-N	N-N	N-N	N-N	N-N	N-N	N-N	N-N
17	3-3	3-3	3-3	3-3	3-3	3-3	1-2	3-3	3-3	3-3

*I = Original investigator
R = Reliability rater

TABLE LXXI

RELIABILITY STUDY: RATINGS OF Ss' FATHERS
ON SEVENTEEN BEHAVIORAL VARIABLES,
FIRST TEN YEARS OF LIFE

Pair#	1		2		3		4		5	
	E	C	E	C	E	C	E	C	E	C
Var.#	I-R	I-R	I-R	I-R	I-R	I-R	I-R	I-R	I-R	I-R
1	3-3	3-3	2-2	3-3	3-3	3-3	1-1	3-3	3-3	3-3
2	2-2	3-2	2-1	2-2	2-2	1-1	2-2	2-2	2-2	3-3
3	N-N	3-3	N-N	2-2	N-N	N-N	1-1	N-N	1-2	3-3
4	3-3	3-3	3-3	3-3	3-3	3-3	2-1	1-1	3-3	3-3
5	2-2	2-2	3-3	2-1	2-2	3-3	N-N	2-2	1-1	3-3
6	N-N	N-N	N-N	1-1	2-1	1-1	N-N	1-1	2-2	3-3
7	N-N	N-N	2-2	2-2	2-2	3-2	N-N	2-2	2-2	3-2
8	N-N	N-N	N-N	N-N	N-N	N-N	N-N	N-N	N-N	N-N
9	2-3	N-N	3-2	3-3	N-N	3-3	1-1	2-1	N-N	2-3
10	3-3	3-3	N-N	N-N	2-2	3-3	N-N	3-3	2-2	3-3
11	N-N	2-2	2-2	3-3	2-1	1-2	N-N	3-3	3-3	3-3
12	2-3	3-3	2-1	3-3	2-2	3-3	2-1	1-1	2-3	2-3
13	2-2	2-3	2-2	2-2	2-2	3-3	N-N	3-3	3-3	3-3
14	2-3	3-3	2-2	3-3	3-3	3-3	1-1	2-1	2-3	3-3
15	3-3	3-3	3-3	2-2	3-3	3-3	1-1	3-3	3-3	3-3
16	N-N	N-N	N-N	N-N	N-N	N-N	N-N	N-N	N-N	N-N
17	2-2	3-3	3-3	3-3	3-3	3-3	1-1	2-2	3-3	3-3

TABLE LXXI (continued)

Pair#	6		7		8		9		10	
	E	C	E	C	E	C	E	C	E	C
Var.#	I-R	I-R	I-R	I-R	I-R	I-R	I-R	I-R	I-R	I-R
1	3-3	3-3	3-3	3-3	2-3	3-3	2-1	3-3	3-3	3-3
2	3-3	2-2	3-3	2-2	2-2	2-2	2-1	2-2	3-3	3-3
3	N-N	2-2	3-3	N-N	1-2	2-2	2-2	N-N	2-2	3-3
4	3-3	3-3	3-2	3-3	3-3	3-3	3-3	3-3	2-2	3-3
5	2-3	1-2	3-3	2-2	2-1	2-2	N-N	3-1	3-3	3-3
6	2-3	2-3	2-2	3-3	1-2	1-2	1-2	3-3	2-2	2-2
7	3-3	2-2	2-2	2-2	2-1	3-2	1-2	N-N	2-2	N-N
8	N-N	N-N	2-2	N-N	N-N	3-3	N-N	N-N	N-N	N-N
9	3-2	2-3	2-1	2-3	1-2	3-2	2-3	2-3	2-2	3-3
10	3-3	3-3	3-3	3-3	2-2	3-2	1-1	N-N	3-3	2-2
11	3-3	3-3	3-3	3-3	2-3	3-3	1-2	3-3	3-3	3-3
12	3-3	2-2	3-3	3-2	3-3	3-3	3-3	3-3	3-3	2-2
13	3-3	3-3	3-3	3-3	3-2	3-3	2-1	3-3	2-2	3-3
14	3-3	3-3	3-3	3-3	3-3	3-3	2-2	3-3	2-2	3-3
15	3-3	3-3	1-1	3-3	3-3	3-3	1-2	3-3	1-1	3-3
16	N-N	N-N	N-N	N-N	N-N	N-N	N-N	N-N	N-N	N-N
17	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3	3-3

TABLE LXXII

RELIABILITY STUDY: RATINGS OF Ss' WIVES ON SEVENTEEN BEHAVIORAL VARIABLES, CROSS-SECTIONAL

Pair#	1		2		3		4		5	
	E	C	E	C	E	C	E	C	E	C
Var.#	I-R	I-R	I-R	I-R	I-R	I-R	I-R	I-R	I-R	I-R
1	3-3	3-3	0-0	0-0	0-0	0-0	3-3	3-3	3-3	3-3
2	3-3	3-3	0-0	0-0	0-0	0-0	3-3	3-3	2-2	3-3
3	3-3	3-3	0-0	0-0	0-0	0-0	3-3	3-3	2-2	3-3
4	3-3	3-2	0-0	0-0	0-0	0-0	3-3	3-3	3-3	3-3
5	2-2	3-3	0-0	0-0	0-0	0-0	N-N	3-3	2-2	3-3
6	3-3	3-3	0-0	0-0	0-0	0-0	N-N	N-N	N-N	N-N
7	3-3	3-3	0-0	0-0	0-0	0-0	N-N	N-N	N-N	N-N
8	3-3	2-2	0-0	0-0	0-0	0-0	N-N	N-N	N-N	N-N
9	3-3	3-3	0-0	0-0	0-0	0-0	3-3	3-3	3-3	3-3
10	3-3	3-3	0-0	0-0	0-0	0-0	2-2	3-3	3-3	3-3
11	3-3	2-2	0-0	0-0	0-0	0-0	3-2	3-3	3-3	3-2
12	2-1	3-3	0-0	0-0	0-0	0-0	3-3	3-2	3-3	3-1
13	3-3	3-3	0-0	0-0	0-0	0-0	3-3	3-3	2-3	3-3
14	2-2	3-2	0-0	0-0	0-0	0-0	3-3	3-3	3-3	3-3
15	3-3	3-3	0-0	0-0	0-0	0-0	3-3	3-3	3-3	3-3
16	N-N	2-2	0-0	0-0	0-0	0-0	3-3	3-3	1-1	3-3
17	3-3	3-3	0-0	0-0	0-0	0-0	3-3	3-3	3-3	3-3

TABLE LXXII (continued)

Pair#	6		7		8		9		10	
	E	C	E	C	E	C	E	C	E	C
Var.#	I-R	I-R	I-R	I-R	I-R	I-R	I-R	I-R	I-R	I-R
1	3-3	2-3	3-3	3-3	3-3	0-0	3-3	3-3	3-3	3-3
2	3-3	2-2	3-3	3-3	N-N	0-0	3-3	3-3	3-3	3-3
3	3-3	1-1	3-3	N-N	3-3	0-0	3-3	3-3	3-3	3-3
4	3-2	3-2	3-3	3-2	3-3	0-0	3-3	3-3	2-2	3-3
5	3-3	2-2	N-N	3-3	N-N	0-0	3-2	3-3	2-2	3-3
6	N-N	N-N	N-N	N-N	N-N	0-0	3-3	3-3	N-N	3-3
7	N-N	2-2	N-N	N-N	N-N	0-0	N-N	N-N	N-N	3-3
8	N-N	N-N	N-N	N-N	N-N	0-0	N-N	N-N	N-N	N-N
9	3-3	3-3	3-2	3-3	N-N	0-0	3-3	3-3	3-3	3-3
10	3-3	N-N	N-N	3-3	N-N	0-0	3-3	3-3	3-3	3-3
11	2-3	3-3	2-3	3-3	3-3	0-0	3-2	3-3	2-2	N-N
12	2-3	1-1	2-2	3-3	2-2	0-0	3-3	3-3	3-3	2-2
13	2-3	3-1	3-3	3-3	N-N	0-0	3-2	3-3	3-3	3-3
14	2-3	3-3	3-3	3-3	N-N	0-0	3-3	3-3	3-3	3-3
15	3-3	2-2	3-3	3-3	N-N	0-0	3-3	3-3	3-3	3-3
16	3-3	1-2	3-3	N-N	N-N	0-0	3-3	N-N	3-3	3-3
17	3-3	3-3	3-3	3-3	N-N	0-0	3-3	3-3	3-3	3-3

TABLE LXXIII

RELIABILITY STUDY: RATINGS OF Ss' CHILDREN

ON SEVENTEEN BEHAVIORAL VARIABLES

CROSS-SECTIONAL

Pair#	1		2		3		4		5	
	E	C	E	C	E	C	E	C	E	C
Var.#	I-R	I-R	I-R	I-R	I-R	I-R	I-R	I-R	I-R	I-R
1	0-0	0-0	3-3	0-0	0-0	1-1	3-3	3-3	3-3	3-3
2	0-0	0-0	3-3	0-0	0-0	0-0	3-3	3-3	3-3	3-3
3	0-0	0-0	3-3	0-0	0-0	0-0	2-2	N-N	1-2	3-3
4	0-0	0-0	3-2	0-0	0-0	2-1	N-N	N-N	N-N	N-N
5	0-0	0-0	3-3	0-0	0-0	N-N	N-N	N-N	1-2	N-N
6	0-0	0-0	N-N	0-0	0-0	N-N	N-N	N-N	N-N	N-N
7	0-0	0-0	N-N	0-0	0-0	N-N	N-N	N-N	N-N	N-N
8	0-0	0-0	N-N	0-0	0-0	N-N	N-N	N-N	N-N	N-N
9	0-0	0-0	3-3	0-0	0-0	N-N	3-3	3-3	3-3	N-N
10	0-0	0-0	2-2	0-0	0-0	N-N	3-3	N-N	3-3	N-N
11	0-0	0-0	N-N	0-0	0-0	N-N	N-N	N-N	N-N	3-3
12	0-0	0-0	2-3	0-0	0-0	N-N	3-3	N-N	2-3	3-3
13	0-0	0-0	3-3	0-0	0-0	1-2	3-3	3-3	1-2	N-N
14	0-0	0-0	3-3	0-0	0-0	N-N	3-3	3-3	3-3	3-3
15	0-0	0-0	3-3	0-0	0-0	N-N	3-3	3-3	3-3	3-3
16	0-0	0-0	N-N	0-0	0-0	N-N	N-N	N-N	N-N	N-N
17	0-0	0-0	3-3	0-0	0-0	N-N	3-3	3-3	3-3	3-3

TABLE LXXIII (continued)

Pair#	6		7		8		9		10	
	E	C	E	C	E	C	E	C	E	C
Var.#	I-R	I-R	I-R	I-R	I-R	I-R	I-R	I-R	I-R	I-R
1	3-3	3-3	3-3	3-3	0-0	2-2	0-0	3-2	3-3	3-3
2	3-3	3-3	3-3	3-3	0-0	3-3	0-0	3-3	3-3	3-3
3	3-3	2-3	3-3	3-3	0-0	N-N	0-0	N-N	3-3	N-N
4	3-3	N-N	N-N	3-3	0-0	3-3	0-0	3-2	3-3	3-3
5	3-3	N-N	N-N	N-N	0-0	N-N	0-0	N-N	N-N	N-N
6	N-N	N-N	N-N	N-N	0-0	N-N	0-0	N-N	N-N	N-N
7	N-N	N-N	N-N	N-N	0-0	N-N	0-0	N-N	N-N	N-N
8	N-N	N-N	N-N	N-N	0-0	N-N	0-0	N-N	N-N	N-N
9	N-N	3-3	3-3	3-3	0-0	3-3	0-0	3-3	3-3	3-3
10	N-N	3-3	N-N	N-N	0-0	3-3	0-0	N-N	3-3	3-3
11	N-N	N-N	N-N	N-N	0-0	N-N	0-0	N-N	N-N	N-N
12	N-N	3-3	N-N	3-3	0-0	3-3	0-0	3-3	N-N	N-N
13	N-N	3-3	N-N	3-3	0-0	3-3	0-0	N-N	3-3	3-3
14	3-3	3-3	3-3	3-3	0-0	3-3	0-0	3-3	N-N	3-3
15	3-3	3-3	3-3	3-3	0-0	3-3	0-0	3-3	N-N	3-3
16	N-N	N-N	N-N	N-N	0-0	N-N	0-0	N-N	N-N	N-N
17	3-3	3-3	3-3	3-3	0-0	3-3	0-0	3-3	3-3	3-3