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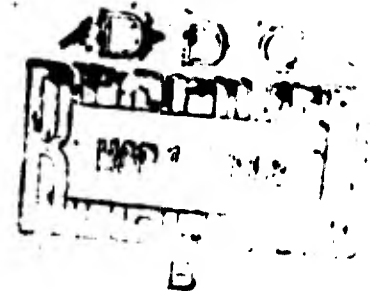
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**PSYCHOLOGICAL FACTORS RELATED TO TOLERANCE
OF CONFINEMENT, NOVEMBER 1967**

FINAL REPORT

**Contract No. OCD-PS-65-5
Work Unit 1519B**

NOVEMBER 1967



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**PSYCHOLOGICAL FACTORS RELATED TO
TOLERANCE OF CONFINEMENT**

SUMMARY

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Prepared for:

**Office of Civil Defense
Office of the Secretary of the Army
Washington, D.C. 20310**

Contract No. OCD-PS-65-5

Work Unit 1519B

November 1967

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INTRODUCTION

The current study was conducted as a follow-on to the previous investigation by Wright and Hambacher (Psycho-Social Problems of Shelter Occupancy, Wright and Hambacher, 1965, and The Psychological Environment of Protective Shelters, Wright and Hambacher, 1966), and represents the second Shelter Confinement study conducted by HRB-Singer.

Inherent in some of the assumptions under which fallout shelters have been set up are the beliefs that individuals will seek refuge from fallout following a thermonuclear blast; that they will accept the inconveniences caused by austere conditions; that they will adjust to and endure severe deprivations if necessary; and that they will choose to remain confined in a shelter as long as it is dangerous to be outside of it. In brief, it is assumed that those surviving a thermonuclear blast will be glad to be alive and will make every effort and concession to remain so.

These assumptions probably are valid in most instances for most people. While all would provide avenues for research, this study concerns itself, primarily, with the assumption that individuals will choose to remain confined in a shelter as long as it is dangerous to be outside of it.

The findings of this study can be generalized to those fallout shelters that would be used in an actual nuclear attack to the extent that the actual and simulated shelter stays are similar. Every attempt was made to attain realism in the study.

Objectives of the Study

Briefly, the study was designed to meet two objectives.

To examine relationships between defections and those stress variables which previous work and judgment would indicate to be salient.

To determine the applicability of several psychological measures in studying effects of confinement.

The behavior of individuals who deviate from the normal, that is, who behave differently from most of the people, can have both positive and negative effects. It can have a wholesome effect or it can lead to disastrous consequences. This is true because behavior is contagious. Thus, the behavior of even one individual is very influential on the subsequent behavior of the members of his group. Deviant behavior, therefore, cannot be ignored.

It was expected that the findings from the study would provide us with information on both physical and psychological conditions which might be basic to or precipitate behavior problems relative to incompleting shelter stays. Procedures can subsequently be developed which would assist in preventative as well as remedial actions to be initiated or set up for inclusion in shelter management procedures. Just as important as this application of information would be the setting up of a research procedure to study defection and defectors. The present study assists in developing a base of information on which to build a fund of knowledge in this specific problem area.

The variables manipulated were shelter management and psychological and physical stresses. Two shelter runs were carried out. The first run was conducted without a trained shelter manager. Guidance materials on shelter management (prepared by AIR -- Vol. III -- Shelter Manager's Guide and the recent, abbreviated Small Shelter Guide) were placed near the food supplies. The second group was conducted with a trained shelter manager in charge.

The sample contained individuals with varying theoretical thresholds for tolerance of confinement. In addition, stresses were initiated at preselected times to what effect they would have on the individuals and the group. The added stresses for both groups were overcrowding, and periods of high ambient temperature. Each of the enshelterment conditions was realistic to shelter living under actual emergency circumstances.

PROCEDURES

Selection of Individuals for Study Sample

The sample selected was a stratified random one. Some attrition due to inability or unwillingness to participate was noted, but the volunteer effect

was reduced as much as was feasible. It was intended to represent the general population, including lower-middle class residential, middle-upper class residential, trailer parks, and rural-farm areas. The range of occupations is great, including medical doctors, engineers, professors, ministers, carpenters, junk dealers, clerks, laborers, students, secretaries, etc.

Description of the Fallout Shelter

This study attempted to comply with recommendations by the Office of Civil Defense for minimum but adequate provision for fallout shelters. The shelter stocking guide and 10 square feet of space per occupant was employed as the basic criteria for the shelter runs.

RESULTS

Defections

The experimental phase of this study was designed and executed with the purpose of investigating psychological factors related to tolerance of confinement. Problems posed by those individuals who, when confined to a fallout shelter, choose to terminate their stay and depart prematurely were of special interest.

The following results were obtained:

(1) No meaningful difference in defections as a function of shelter manager was observed. One effective defector in each group was observed. Five persons of one family left one shelter but there is evidence that one member, the father, wished to leave and the others accompanied him. Thus, one effective defector was scored. One person left the other shelter, thus one defector was scored for this group.

(2) Various psychological tests and measures were employed to determine their effectiveness in confinement research. In general, several techniques were found to be of value in measuring certain aspects of the behavior of those so confined.

Because the study did not result in a significant number of defections, it was, therefore, not possible to study defectors in as much depth as had been planned.

The effect of defections on remaining shelterees also was not studied because of the paucity of defectors. In the instances where defections occurred, there were no observable effects on those who remained in the shelter. Furthermore, because of the rapidity with which defections occurred, there was not time to obtain the intended early measures, nor was it possible to get adequate followup data. For these reasons, the emphasis of the study necessarily shifted to the secondary interest, of testing the applicability of various psychological measures to shelter research.

PSYCHOLOGICAL TEST EVALUATION OF TOLERANCE OF CONFINEMENT

Edward's Personal Preference Schedule

The Edward's Personal Preference Schedule was administered as a selection device as well as a predictor of behavior in the shelter situation. Unfortunately, because of the outside demands on the shelterees, using this device as the selection measure was impractical. In addition to this, there were so few defectors in the two shelter runs that using the scores on the Edwards as predictors of shelter defection was again impractical. From the behavioral data available, it appears that the Edward's Personal Preference Schedule (EPPS) is not a good predictor of behavior within the confines of a shelter.

Civil Defense Knowledge Test

The Civil Defense Knowledge Test was given both before and after the shelter experience to provide information about civil defense knowledge acquired during the enshelterment. Most answers on the second testing reflect increased knowledge of blast effects and fallout.

Confinement Feelings Questionnaire.

The Confinement Feelings Questionnaire was administered prior to the beginning of the shelter study as well as following the shelter study. There were no significant changes between the pre and post scores, but scores on the measure correlated significantly with other indices, indicating a degree of usefulness as a predictor of certain behavior in shelters.

Self-Description Scale I (Leary)

The Leary Self-Description Scale I was administered early in the shelter run and prior to the discharge of the shelterees from the shelter. The Leary Scale is considered a measure of behavior and gives scores which represent the personality factors of love and dominance. Again, there were no significant differences between the means on the two administrations of the love and dominance scores for the two shelter groups, but a correlational analysis indicates many changes which seem to be related to the shelterees experience in the shelter.

Confinement Acceptance Scale

The Confinement Acceptance Scale was administered at approximately the same time as the Leary Scale. The Confinement Acceptance Scale is composed of eight factors which indicate various aspects of the hardships encountered in Confinement. Few differences between shelter run groups were noted. However, the report discusses several correlational relationships between the confinement Acceptance Scale and other measures which were of potential benefit to future research.

Conclusions

While it is recognized that various events occurred during the administration of the enshelterment phases which serve to attenuate the generalizability of the results and the study, two main conclusions are drawn.

First, few defections were induced by those stresses implicit to confinement or those induced by the research team. Late arrivals, a psychological stress, was the addition of six late-comers to each shelter. Uncomfortable ambient temperatures (peaks of 81° F) are considered to be a physical stress. Uncomfortable is subjectivity defined as the reactions of the shelterees and the observers stationed outside the shelter.

Secondly, the considerable number of relationships among the various psychological measures which were revealed by the correlational analyses indicate a degree of reliability for several of the psychological measures employed as indices of behavior.

It should be noted at this point, that even though the selection procedures for obtaining subjects were designed to produce a representative sample, a certain degree of self selection bias is present in the groups who did participate. It is also reasonable to say that the population with the lowest tolerance of confinement was under represented in the experimental groups, thus contributing to the low number of defectors obtained by the research.

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SCIENCE PARK, BOX 60 • STATE COLLEGE, PA. 16801
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**PSYCHOLOGICAL FACTORS RELATED TO
TOLERANCE OF CONFINEMENT**

**PREPARED FOR
OFFICE OF CIVIL DEFENSE
OFFICE OF THE SECRETARY OF THE ARMY
WASHINGTON, D.C. 20310**

UNDER

CONTRACT NO. OCD-PS-65-5

WORK UNIT 1519B

PREPARED BY **C. E. NEWMILLER**
P. S. FRANCIS, PH. D.
R. B. COOPER

November 1967

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ABSTRACT

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"Psychological Factors Related to Tolerance of Confinement" presents the findings of two shelter confinements. Two fifty-one person groups were separately confined in a fallout shelter for sixty seven hours each. Several psychological measures were employed in the study, and their applicability to it is discussed. The effect of a trained shelter manager on defections and other in-shelter behavior is also presented.

ACKNOWLEDGMENTS

The authors wish to extend their gratitude to the numerous individuals who participated in the preparation, conduct, and analysis of the present study.

Special recognition is due to Dr. Grace H. Wright, who was Project Director during the conceptualization, design and shelter-run phases.

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CHAPTER I
INTRODUCTION

The current study was conducted as a follow-on to the previous investigation by Wright and Hambacher (Psycho-Social Problems of Shelter Occupancy, Wright and Hambacher, 1965, and The Psychological Environment of Protective Shelters, Wright and Hambacher, 1966), and represents the second shelter confinement study conducted by HRB-Singer.

The first study for OCD conducted by HRB-Singer was conducted with thirty-three "near-normal" patients selected from six psychiatric hospitals (Wright and Hambacher, 1965). Selected patients were tested 24 hours after hospital admission and again 72 hours later. This group is referred to as Group I.

Groups II and III were selected to participate in study II, and were composed of residents of Patton Township, Centre County, Pennsylvania, randomly selected and invited to participate in a research project. This latter project was the first shelter stay conducted at the HRB-Singer facility.

The independent variable in the first confinement study was psychological support. Psychological support for Group II was held to a minimum, but was realistic for a fallout shelter confinement. Group III was composed of 26 residents of the same township, selected in the same way, and also confined in the HRB-Singer shelter. Selected psychological support, realistic for a fallout shelter confinement was provided for Group III.

These earlier studies were primarily concerned with the following items:

- (1) Validating an earlier finding that significant relationships exist between behavior and the psychological environment of early confinement.
- (2) Validating the findings that significant relationships exist between behavior and the psychological confinement of extended physical confinement.
- (3) Changes in behavior as a function of periods of confinement.
- (4) Changes in the acceptance of the psychological environment of confinement as a function of a period of confinement.
- (5) Differences in behavior as a function of two levels of psychological support.

Because of the close relationship between the first confinement study and the current one, it was decided to present the material in as similar a format as possible. Accordingly, the group designation numbers were Group IV and V.

General

Inherent in some of the assumptions under which fallout shelters have been set up are the beliefs that individuals will seek refuge from fallout following a thermonuclear blast; that they will accept the inconveniences caused by austere conditions; that they will adjust to and endure severe deprivations if necessary; and that they will choose to remain confined in a shelter as long as it is dangerous to be outside of it. In brief, it is assumed that those surviving a thermonuclear blast will be glad to be alive and will make every effort and concession to remain so.

These assumptions probably are valid in most instances for most people. While all would provide avenues for research, this study concerns itself, primarily, with the assumption that individuals will choose to remain confined in a shelter as long as it is dangerous to be outside of it.

Background

Evidence is found in the studies of Hammes and Osborne (1963), Hammes (1964, 1965, 1966), Hale (1966) and others, that this assumption may not always be valid. These studies were designed to investigate various aspects of fallout shelters. In each, conditions simulating living in a fallout shelter were set up and people attempted to live as they would during the closed-up phase following a thermonuclear blast. However, in each, many individuals chose to terminate their confinement prior to scheduled time of departure.

In a study of this kind, conditions approximating a confinement can be created. Physical austerity, social disorganization, and uncomfortably high ambient temperatures can all be tested concerning their effects on the behavior of shelterees. However, it is not possible to simulate, in a completely realistic fashion, a genuine fear of the outside, bodily harm, or the ignorance of nuclear effect. The factors all may affect behavior in an actual nuclear attack. Still, certain behaviors are exhibited under simulated conditions that have a potential for expression under actual conditions.

The assumption in the present instance is that if people defect under the conditions to be tested in this experiment, these kinds of people could also defect under actual enshelterment. It is recognized that confinement during actual conditions would provide stronger reasons to remain in the shelter than during an experimental enshelterment. In the event of few or no defections, it would appear that defections under actual enshelterment would be even less probable, providing the environment of the shelter remains within the limits of the stress variables employed in experimental shelter runs.

Shelter occupancy studies at the University of Georgia (1962-1966) have revealed a potential defection problem even though they concentrated on shelter management. Concerning the defectors from the 1962-1963 studies, Hammes and Osborne (1963, p. 132) said, "Shelterees exiting prior to study completion (26 of 120 participants) did so primarily for reasons of psychological instability and inability and unwillingness to adjust. (These were also major reasons given for the defections in Experimental Study VIII (Hammes, 1965, p. 181).) Headaches, body aches, and nausea were secondary reasons for early exit." In a later report (Hammes, 1964), a chapter is devoted to defections (pp. 45-48). Hammes noted that of the total number, thirty-five, nine were "medical" defectors, that is, nine shelterees left the shelter on the advice of a member of the medical staff. Many medical defectors were observed in later studies. These were primarily adults with symptoms that required outside medical attention. More rigorous procedures on the part of the physicians in shelters have reduced the number of medical defection. Most of the remaining twenty-six "non-medical" defections were due to physical symptoms which the medical staff did not consider serious. Hammes also noted that there were no defections in the 14-19 year age group.

Of the six shelter occupancies (December 1962-August 1964) all had defections except the sixth one. Four reasons were given concerning why none of the three hundred shelterees in the latter shelter study defected (Hammes, 1964, p. 47): (1) being a member of a family group, (2) the brevity of the shelter stay (50 hours), (3) emphasis upon remaining by recruitment and management staff members; and (4) the nonexistence of deviant persons since most shelterees scored "near the average on most characteristics."

Hambacher (August 1964) administered projective drawings and interviewed shelterees who defected from a 300 person, 1964 occupancy study at the University of Georgia. This procedure was not a part of the original research plan but was initiated when it became obvious that defections would occur. Hambacher concluded that stated and revealed motivations for leaving the shelter were not congruent, and that to some extent "causes" of defections could be defined for an individual. Some of the underlying psychological reasons for leaving were found to be: feelings of insecurity, inability to play familiar roles, lack of familiar physical and psychological supports, lack of identification and acceptance, isolation, lack of flexibility, dependency needs, as well as partial failure of defense mechanisms to operate successfully. Hostility and undesirable behavior frequently expressed themselves. In all, data were gathered from a total of twenty of the sixty-two defectors.

In a recent report (1966, p. 88), Hammes noted that most of the defectors were aged 20 or below (74%); there were more female than male defectors; and that no defectors were over 47 years of age. The reasons given for fifty-one defections were nonmedical (twelve of these left when other family members left) and defectors also listed fewer items and fewer essential items brought with them. Finally, the nonmedical defector has not coped with as many family problems as those shelterees who remained. The criterion for the latter is not given, however, nor is this hypothesis discussed in the report.

The University of Georgia researchers concluded (Hammes, 1964, p. 40) that two of the most facilitating factors in withstanding the difficulties of long-term confinement were (1) the emergence of group-orientation ("we are going to face this together and meet the challenge") and (2) the actions of an aggressive and empathetic shelter manager. (It would seem then, that if these factors could be produced and stressed -- the likelihood of defections would decrease.)

Assumptions and Limitations of the Study

The limitations of the study are centered primarily on those related to working with small samples. For example, it was not possible to separate the shelter group into subclassifications by age, sex, occupation and educational levels, etc., for statistical analysis because of the small number (N=51) in each shelter group.

The findings of this study can be generalized to those fallout shelters that would be used in an actual nuclear attack to the extent that the actual and simulated shelter stays are similar. Every attempt was made to attain realism in the study

Because of the method of selection, it was assumed that the people in the shelter stays of the study were more representative of the general population (and hence shelter populations) than individuals who volunteer might be. It is assumed further that the sample was a more realistic one because the individuals lived in the same geographic area and therefore might well find themselves together in the event of an actual attack.

Objectives of the Study.

Briefly, the study was designed to meet two objectives.

- To examine relationships between defections and those stress variables which previous work and judgment would indicate to be salient.
- To determine the applicability of several psychological measures in studying effects of confinement.

The behavior of individuals who deviate from the normal, that is, who behave differently from most of the people, can have both positive and negative effects. It can have a wholesome effect or it can lead to disastrous consequences. This is true because behavior is contagious. Thus, the behavior of even one individual is very influential on the subsequent behavior of the members of his group. Deviant behavior, therefore, cannot be ignored.

It was expected that the findings from the study would provide us with information on both physical and psychological conditions which might be basic to or precipitate behavior problems relative to incompleting shelter stays. Procedures can subsequently be developed which would assist in preventative as well as remedial actions to be initiated or set up for inclusion in shelter management procedures. Just as important as this application of information would be the setting up of research procedure to study defection and defectors. The present study assists in developing a base of information on which to build a fund of knowledge in this specific problem area.

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CHAPTER II

METHOD

In order to supplement data from the present study, as well as to attempt to isolate additional stress variables, a questionnaire was sent to those persons who had defected from a previous study (AIR at West Virginia, 1966). Of thirty defectors in that study, sixteen completed and returned the questionnaire to our staff. Its main function with respect to the present study was to provide the stress variables considered by the subjects in the AIR study to be related to defection. The data were not of sufficient quantity or quality to warrant inclusion here and are not presented.

Both groups confined were handled in the same manner throughout, except for variables to be discussed. Each family received supplementary instructions by telephone at 6:00 p.m. the evening of the shelter stay. Previously by letter they had been informed that this would be a simulated shelter stay, that they would use standard OCD supplies in the shelter, but that they could bring items with them to supplement these supplies. They were also asked to bring two blankets per person.

Each person was asked to bring whatever he might have on his person or could gather in one or two minutes if in an emergency he had to find shelter quickly outside his home, school, or office. This information was given by phone just prior to the beginning of the enshelterment.

Preconfinement testing was carried out on the Thursday evening of each shelter run. This took place after the subjects arrived at HRB-Singer, approximately one-half hour following the telephone message alerting them to the emergency. Each family group or individual subject was first checked and signed in by a member of the HRB-Singer security guard staff. An envelope containing four questionnaires was then distributed to them. These questionnaires were the Doctor's Information Sheet, Pre-Confinement Feelings Questionnaire, and an information form requesting a list of all items brought with them to the shelter and a Civil Defense Knowledge Questionnaire. The subjects also received a medical checkup at this time.

Just prior to entering the shelter, the movie entitled "Operation Zero" was shown to the subjects. This movie showed a thermonuclear blast and the effects it would have on dwellings and individuals within a particular radius of the blast. The movie also "set the stage" for realism in the shelter stay.

A. VARIABLES

The variables manipulated were shelter management and psychological and physical stresses. Two shelter runs were carried out. The first run was conducted without a trained shelter manager. Guidance materials on shelter management (prepared by AIR -- Vol. III -- Shelter Manager's Guide and the recent, abbreviated Small Shelter Guide) were placed near the food supplies. The second group was conducted with a trained shelter manager in charge.

The sample contained individuals with varying theoretical thresholds for tolerance of confinement. In addition, stresses were initiated at preselected times to see what effect they would have on the individuals and the group. The added stresses for both groups were overcrowding, and periods of high ambient temperature. Figure 1 shows the temperature at selected times throughout each run. OCD standards only relate to stocking guides, and space requirements.

B. DESCRIPTION OF MEASURES

Tolerance of confinement is partly defined as an individual's ability to remain in shelter until the period of confinement officially ends. Thus, the measure is simply that enshelterment was or was not completed by each individual participating.

Other psychological indicators of tolerance of confinement supplemented the primary dichotomous measure, and were measured by various instruments in preconfinement, early-confinement, late-confinement, and post-confinement periods. These instruments are described in the following, and their order of administration is graphically illustrated in Figure 2.

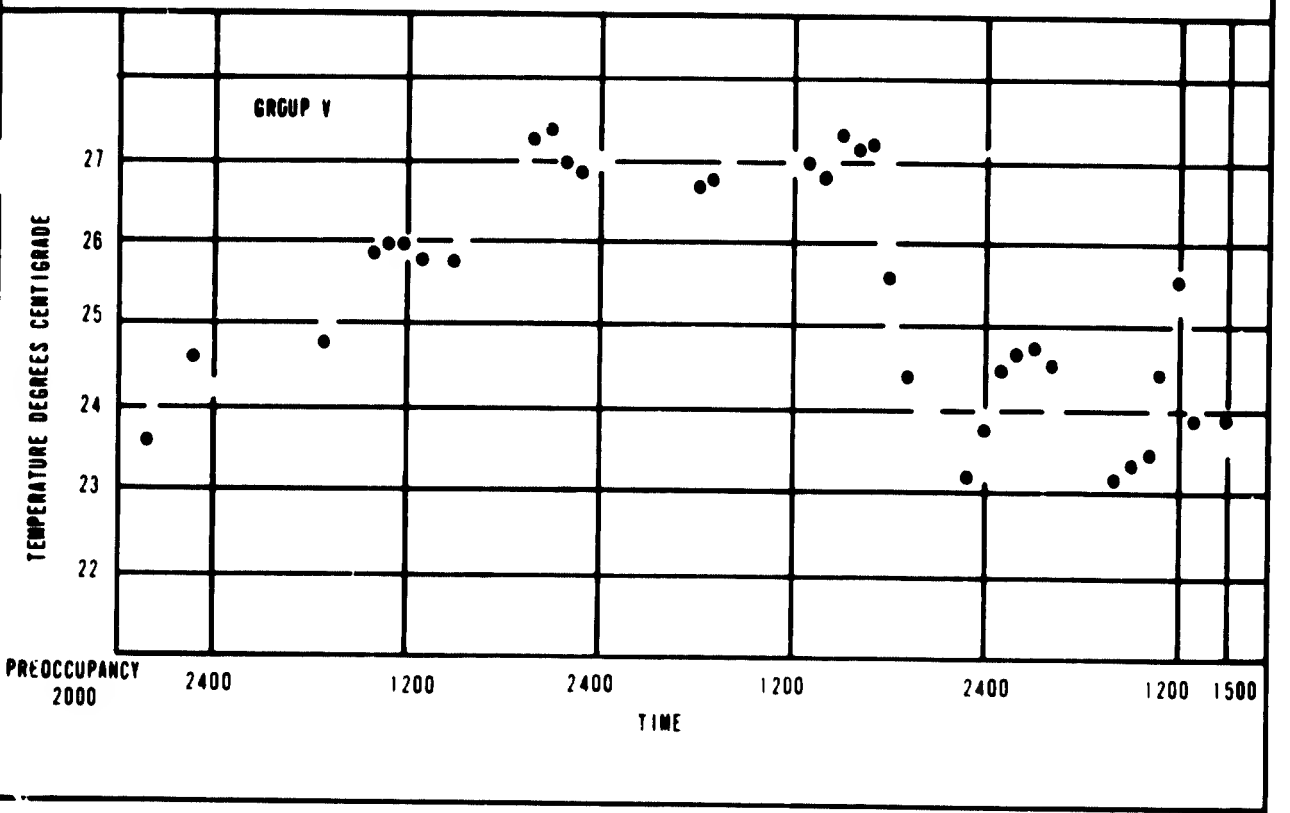
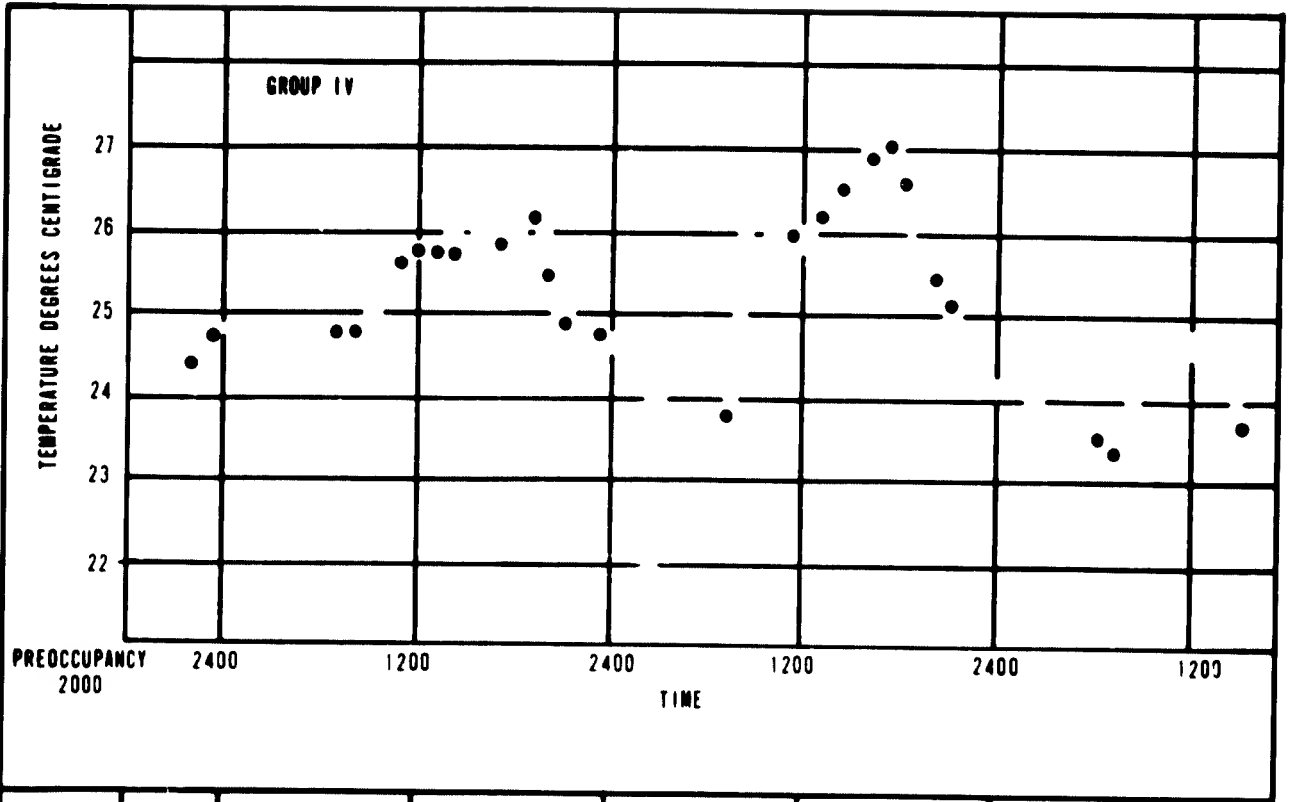


FIG 1 HOURLY TEMPERATURE PROFILE

Self-Description Scale I -- (Leary)

The Self-Description Scale is a standardized test by Leary (1955) to reveal self-perceptions in terms of common descriptive phrases. The modification developed for use with the hospital population remained unchanged for the current study. (Appendix A.)

To use this scale, a shelteree selects the statement which he feels describes himself at that particular time. The use of the scale results in four measurements, with dominance and submission on either end of one continuum and love and hostility on either end of a second continuum. These four factors are defined in the definition section. Examples of statements representing dominance are: dictatorial, bossy, and able to give orders. Examples of statements representing love are: gives freely of self, helpful, and likes everybody. Next, to these statements are circles. The shelteree blackens the circles next to the statement he thinks applies to him at that time.

Confinement Acceptance Scale -- Form C

This scale measures the individuals reactions to confinement. It consists of items which the individual checks according to how frequently they bother him: always, often, sometimes, rarely, or never. (Appendix A.)

Pre-Confinement Feelings Questionnaire

The Pre-Confinement Feelings Questionnaire was adapted with minor change from that employed in previous shelter research (Hale, et al., 1965). It is used to ascertain an individual's feelings toward selected aspects of fallout shelter confinement. The shelteree circles a word that best describes a feeling he might have with respect to several aspects of shelter living. Four degrees of annoyance were possible: none, much, some and little. Dirt, food and toilet facilities are examples of the nineteen listed to be described. At the bottom of the page, the shelteree is asked to list the three things he thinks will bother him the most. (Appendix A.)

Post-Confinement Feelings Questionnaire

This questionnaire was also adapted with several changes from that of the group using the Pre-Confinement Questionnaire. While the same nineteen factors

were retained, the questions were supplemented with eleven groupings of questions appropriate to the current problem. For example, one added question was: Which persons did you spend the most time with? (Appendix A.)

Follow-Up Questionnaire for Delayed Expression of Stress

The one-page questionnaire contained seven questions designed to elicit information concerning any delayed expression of stress which might have occurred after the shelteree returned home. After each question, space is provided on the form for each individual to write about his experiences. An example of a question included is: After returning home, did you notice any difference in your relationship with your family or with friends and acquaintances? (Appendix A.)

CHAPTER III

PROCEDURES

A. PRE-CONFINEMENT

Selection of Individuals for Study Sample

The sample used was obtained through a stratified random selection technique. The shelterees were selected by choosing every tenth name on the College and Harris Townships occupational tax listings. The person receiving the letter could bring members of his household with him or he or other members could come alone. And, as can be noted by an inspection of the letters and forms in Appendix C, all participants were to be in normally good health.

Each person who received an invitation to participate was asked to return the acceptance form by mail. Those accepting were asked to come to the HRB-Singer facilities for an initial interview and the administration of a questionnaire. The Edwards Personal Preference Schedule was also given at this time. The affiliation scale was used to roughly equate the two groups. Since this is a restricted instrument copies are not included in this report.

The initial review was semistructured. Its main purposes were the dissemination of information (Appendix C), the observation of subjects in conversation, and the administration of the questionnaires. In addition, the subjects were told to expect a telephone call on the day of the study. It would come one-half hour before the time they would be entering the shelter. This call was designed to simulate a radio message one might receive at the onset of a thermonuclear emergency. (Appendix C.)

The sample was intended to represent the general population, including lower-middle class residential, middle-upper class residential, trailer parks, and rural-farm areas. The range of occupations is great, including medical doctors, engineers, professors, ministers, carpenters, junk dealers, clerks, laborers, students, secretaries, etc. A description of the sex, age, marital and family status, occupation and education appears in Appendix C.

The first shelter run, Group IV, was made up of the following: six complete families (two with six members, one with five members, and two with four members); eight partial families (one parent with three children, one parent with two children, five parents with one child, and one couple with no children); and three adults only. Total: fifty-one shelterees. The second run, Group V, was made up of the following: nine complete families (one with seven members, four with six members, two with five members, and two with three members); no partial families; and four adults alone. Total: fifty-one shelterees.

Description of the Fallout Shelter

This study attempted to comply with recommendations of the Office of Civil Defense. All arrangements were designed to be similar to those that might be encountered in an actual shelter. The shelter was located in an underground concrete tunnel, adjacent to a basement section of HRB-Singer's Building Five. The tunnel was 6.5 feet high, 5.5 feet wide, and 87 feet long. Light was provided by three bare 100-watt incandescent light bulbs, the switches of which were under control of the shelterees. A large exhaust fan in an adjacent area pulled in fresh air to provide adequate ventilation. Cold air from the outside or warm air from the inside was provided continuously.

The toilet facilities were set off separately to provide privacy. This may or may not be truly representative of an actual shelter, but is necessary for a study of this kind. Two other liberties were taken in furnishing the shelter. Ends of carpeting were put on the concrete floor and a long bench was built along the wall opposite the light fixtures.

Each shelter was equipped with the following items:

8 each	20 lb. cans of Crackers
1 each	35 lb. can of Carbohydrate Supplement
1 each	Medical Kit "A"
2 each	35 gal. water drums
2 each	Model SK IV, Sanitation Kits
1 each	AIR -- Vol. III -- Shelter Manager's Guide

1 each	Small Shelter Guide
1 set	Field Phones
1 each	Flashlight
51 each	Notebooks
5 dozen	Pencils

B. CONFINEMENT

a. The Early Confinement testing occurred in the shelter early Friday morning. The questionnaires were the Self-Description I and Confinement Acceptance Scale. These tests were placed in-shelter with instructions pertaining to the time they were to be taken and independently completed. Parents of children unable to write or express themselves had been asked to pay special attention to the needs and feelings of their children and to fill out some forms for them.

b. Late-Confinement testing took place on Sunday morning, approximately sixty-four hours after shelter entry. The tests were, again, the Self-Description I and Confinement Acceptance Scale.

Thus, the Confinement Acceptance Scale and the Self-Description Scale I were given to the shelterees at two different times during the period of confinement, both groups receiving them at approximately the same time. Both instruments are self-administering and were distributed by the shelterees themselves.

The entire period of confinement was 67 hours. During this period, significant incidents and activities of interest were recorded by means of tape and by a log book kept by a team of observers. Information thus obtained supplemented the prime sources of data. Various broadcasts were taped into the shelter (see Appendix C) and certain information was obtained, as requested, from the shelter via telephone communication to "shelter control." Temperature, ventilation, in-shelter activities, attitudes, illnesses, etc., were continuously monitored. In order to make the shelter stay more realistic, the subjects were unaware of their exact departure time, although they did know they would be released sometime on Sunday.

C. POST-CONFINEMENT

Although the general time of departure "late afternoon" was known by the shelterees, the specific departure time was announced only a few minutes prior to departure. When the doors were officially opened, the subjects were escorted from the shelter of the lobby area. At this time, each subject again was examined by the medical doctor and asked to fill out four questionnaires; the Post-Confinement Feelings Questionnaire, Civil Defense Knowledge Questionnaire to see what learning took place in-shelter, a Personal Data Sheet, and a list of the items which were brought to the shelter and used.

Debriefing

In addition, semistructured debriefing interviews were conducted by the staff (Appendix C). All adults, the shelter manager, the teenagers and selected children were interviewed to attempt to get a first-hand account of their experiences and feelings and to give them a chance to ask any questions they wished. These interviews also provided the shelterees an opportunity to express hostility, that is, to "let off steam." For several reasons, not the least of which was a hurry to "get home," no usable information was obtained by this procedure.

Post-Departure Data Collection

Letters and telephone calls were received from numerous shelterees, post-departure. In addition, a follow-up questionnaire was sent to all shelterees, inviting them to express any and all feelings, thoughts, changes in behavior, etc. which they had noticed after being home. Again, for reasons which are not apparent, return rates were very poor and those returned were not completed enough to provide usable data.

Payment and certificates were mailed to the shelterees during the week following the individual's shelter stay. (Appendix C.)

CHAPTER IV

RESULTS

A. DEFECTIONS

The experimental phase of this study was set up and carried out with the purpose of investigating psychological factors related to tolerance for confinement. Problems posed by those individuals who, when confined to a fallout shelter, choose to terminate their stay and depart prematurely, were of special interest.

The following results were obtained:

(1) No differences in defections as a function of shelter manager were observed. One effective defector in each group was observed. Effective defector is defined and discussed in the Discussion and Conclusion section.

(2) Various psychological tests and measures were employed to determine their effectiveness in confinement research. In general, several techniques were found to be of value in measuring certain aspects of the behavior of those so confined.

Because the study did not result in a significant number of defections, it was, therefore, not possible to study defectors in as much depth as had been planned. The effect of defections on remaining shelterees was also not studied because of a paucity of defectors. In the instances where defections occurred, there were no observable effects on those who remained in the shelter. Furthermore, because of the rapidity with which defections occurred, there was not time to obtain the intended early measures, nor was it possible to get adequate followup data. For these reasons, the emphasis of the study necessarily shifted to the second interest.

B. PSYCHOLOGICAL TEST EVALUATION OF TOLERANCE OF CONFINEMENT

Edwards' Personal Preference Schedule

The Edwards' Personal Preference Schedule was administered as a selection device as well as a predictor of behavior in the shelter situation. Unfortunately, because of the outside demands on the shelterees, using this device as a selection measure was impractical. While it would have been theoretically possible to balance the two groups with respect to the EPPS, practically, this was impossible. Some subjects could only participate on one of the two weekends, thereby effectively eliminating one possibility of assigning individuals to both groups. In addition to this, there were so few defectors in the two shelter runs that evaluating the Edwards scores as predictors of shelter defection was again impractical. From the behavioral data available, it appears that the Edwards' Personal Preference Schedule (EPPS) is not a good predictor of behavior within the confines of a shelter.

Civil Defense Knowledge Test

The Civil Defense Knowledge Test was given both before and after the shelter experience to provide information about civil defense knowledge acquired during the enshelterment. The importance of completing the test was not sufficiently emphasized, and the shelterees failed to answer many questions on both testings. On the second testing, the shelterees responded to so few items as to make a really meaningful analysis impossible. Nevertheless, most answers on the second testing reflect increased knowledge of blast effects and fallout.

Questions one through seventeen, question twenty, and questions twenty-five and twenty-six were such that correct or incorrect answers could be determined. There was an increase in the percentage correct for all these questions with the following exceptions: Question fourteen, whether a plastic suit with filtering mask is an example of adequate protection against fallout, was answered incorrectly by those people in the shelter Group IV more frequently on the second testing. Shelter Group V, however, improved their knowledge of this question. On question seventeen, which was, "the radio activity following nuclear attack would make the world impossible to live in for years," was answered correctly more frequently on the first testing than on the second in shelter Group V. Shelter Group IV, however, improved.

The percentage of correct answers in shelter Group IV from the first to the second testing went from 67% correct to 84% correct and, in Group V, the average percent correct on the second items went from 69% to 76%. (The percentages for each question are calculated by the following ratio: Number correct answers/number of answers) Group IV shelterees were left to their own devices concerning study of Civil Defense material while in Group V, the Civil Defense material was presented in a more organized fashion by the shelter manager. The most plausible explanation for this would be found in research into group dynamics. Commitment to decisions has been greater in groups with emergent leadership as opposed to authority or appointed leadership. In the present case, commitment to the learning could have been higher in the nonshelter manager group, but there is no direct evidence on this.

(a) Attitudes

For both groups, a war between two major powers including the United States was seen as unlikely. Also, the majority guessed that if nuclear war does come, it will come at least two years in the future. Most people are opposed to the United States making the first move in such a war.

When posed with the question of what one should do if their community were directly attacked, most thought there was little that could be done other than protect themselves from the blast. The methods listed as protective devices seemed rather naive. The majority did feel, however, that they could protect themselves from radio active fallout most by seeking underground shelter or going to a fallout shelter.

In addition, most people feel that law and order would be restored after an attack though it may take some time; that scientists do know enough about nuclear phenomena to make reliable predictions, that there are enough marked and stocked public shelters to accommodate the entire population, that building a shelter is cowardly, and that, if an attack comes, a person may have to protect his home shelter from neighbors who may try to break in. Concerning this attitude, there was a shift in both groups toward a more pessimistic view of neighbors reactions in the face of atomic attack. (Many feel that living in a shelter for a prolonged period would drive many people insane.) Most people did not feel that shelters cost more than families can afford, and that most people have space available for a shelter if they so desire to build one. Everyone felt that building a family shelter is the proper thing to do.

In some cases, these attitudes are inconsistent (Kretch, et al., 1962). An inconsistent belief system is not unusual, and in this case, some evidence of such an inconsistent belief system is available.

Confinement Feelings Questionnaire

The Confinement Feelings Questionnaire was administered prior to the beginning of the shelter study as well as following the shelter study. There was no significant difference between the pre- and post-shelter administrations; however, there were individual changes which do seem to be related to other factors as will be discussed in the results of the correlation study.

Self-Description Scale I (Leary)

The Leary Self-Description Scale I was administered early in the shelter run and prior to the discharge of the shelterees from the shelter. The Leary Scale is considered a measure of behavior and gives scores which represent the personality factors of love and dominance. Again, there were no significant differences between the means on the two administrations of the love and dominance scores for the two shelter groups, but a correlation analysis indicates many changes which seem to be related to the shelterees experience in the shelter.

Confinement Acceptance Scale

The Confinement Acceptance Scale was administered at approximately the same time as the Leary Scale. The Confinement Acceptance Scale is composed of eight factors which indicate various aspects of the hardships encountered in Confinement. Few differences between shelter run groups were noted. However, the report discusses several correlational relationships between the Confinement Acceptance Scale and other measures which were of potential benefit to future research.

A comparison of the early and late confinement scores on the Confinement Acceptance Scale was calculated using the "t" test technique. The scores from each of these groups were handled differently in order to determine if the presence or absence of an assigned shelter manager had any differential effect on the early and late scores. The significant levels of these "t's" are presented in Tables 1b and 1d. It should be noted that none of the differences reached

significant proportions, although factor number 4, lack of physical supports, approached the level of significance for Group V, but not for Group IV. While a significant change was not noted between factors 1 through 4, physical confinement, psychological confinement, lack of privacy, and lack of physical supports, there was, nonetheless, agreement between the two groups as to direction of score change. In each of these four factors there was noted a lower mean score for both groups. For factors 5 through 8, the direction of mean scores was different for the two groups.

In addition to the "t" analysis, a correlation coefficient was computed between the early and late confinement scores for the adults and children over nine years of age in the two combined groups. The early and late confinement scores of the younger children were not included in this analysis because it was felt that the questionnaire could not reliably be filled out by children of less than ten years of age. The correlation coefficient for each of the factors in this analysis was found in Table 2.

Follow-Up Questionnaire for Delayed Expression of Stress

A Mail Survey Follow-Up Questionnaire was sent to each of the shelterees following the shelter experience. Because of the failure of many of the shelterees to return these to the sender and because of the nature of the answers which were given to the questionnaire, these data were found to be impractical for use in this study.

C. CORRELATION ANALYSIS OF PSYCHOLOGICAL MEASURES

A Correlation Matrix including all of the fifteen scores of the Edwards' Personal Preference Schedule, the Leary "Early" and "Late" Love and Dominance Scores, the scores of the Pre- and Post-Confinement Feelings Questionnaire and the Early and Late Administrations Scores on the factors on the Confinement Feelings Questionnaire were entered into a common correlation matrix and all intercorrelations were computed.

The Early Dominance Scale on the Leary was found to correlate positively and significantly with the Dominance Scale and the Heterosexuality Scale on the EPPS and negatively with the need Abasement Score on the EPPS. The dominance scores on the two administrations correlated .36, indicating a rather low reliability, unless one assumes gross changes in one's perceived behavior. The

TABLE 1a DIFFERENCES BETWEEN MEANS OF EARLY AND LATE CONFINEMENT TEST SCORES, GROUP IV--SELF-DESCRIPTION I (LEARY)

VARIABLE	F VALUE	MEANS
1. DOMINANCE (VS. SUBMISSION)	.50	55.57 EARLY 55.14 LATE
2. LOVE (VS. HOSTILITY)	3.70	50.64 EARLY 49.09 LATE
FOR $df = 1, 43$; $F = 4.00$ AT .05 (*); $F = 7.31$ AT .01 (**)		

TABLE 1b DIFFERENCES BETWEEN MEANS OF EARLY AND LATE CONFINEMENT TEST SCORES, GROUP IV--SELF-DESCRIPTION II (CONFINEMENT ACCEPTANCE)

VARIABLE	F VALUE	MEANS
1. PHYSICAL CONFINEMENT	1.67	3.43 EARLY 3.32 LATE
2. PSYCHOLOGICAL CONFINEMENT	.10	3.44 EARLY 3.40 LATE
3. LACK OF PRIVACY	.37	3.64 EARLY 3.59 LATE
4. LACK OF PHYSICAL SUPPORTS	.74	3.35 EARLY 3.22 LATE
5. LACK OF FAMILIAR BEHAVIOR PATTERNS	.08	3.40 EARLY 3.44 LATE
6. LACK OF FAMILIAR INTERPERSONAL RELATIONSHIPS	.46	3.78 EARLY 3.71 LATE
7. LOSS OF IDENTITY	.31	3.80 EARLY 3.56 LATE
8. FEARS	.57	3.55 EARLY 3.52 LATE
FOR $df = 88$; $t = 1.99$ AT .05; $t = 2.84$ AT .01		

**TABLE 1c DIFFERENCES BETWEEN MEANS OF EARLY AND LATE CONFINEMENT TEST SCORES,
GROUP V--SELF-DESCRIPTION I (LEARY)**

VARIABLE	F VALUE	MEANS
1. DOMINANCE (VS. SUBMISSION)	.54	57.49 EARLY 56.93 LATE
2. LOVE (VS. HOSTILITY)	.06	51.33 EARLY 51.40 LATE
FOR $df = 1, 43$: $\bar{F} = 4.06$ AT .05 $F = 7.31$ AT .01		

**TABLE 1d DIFFERENCES BETWEEN MEANS OF EARLY AND LATE CONFINEMENT TEST SCORES,
GROUP V--SELF-DESCRIPTION II (CONFINEMENT ACCEPTANCE)**

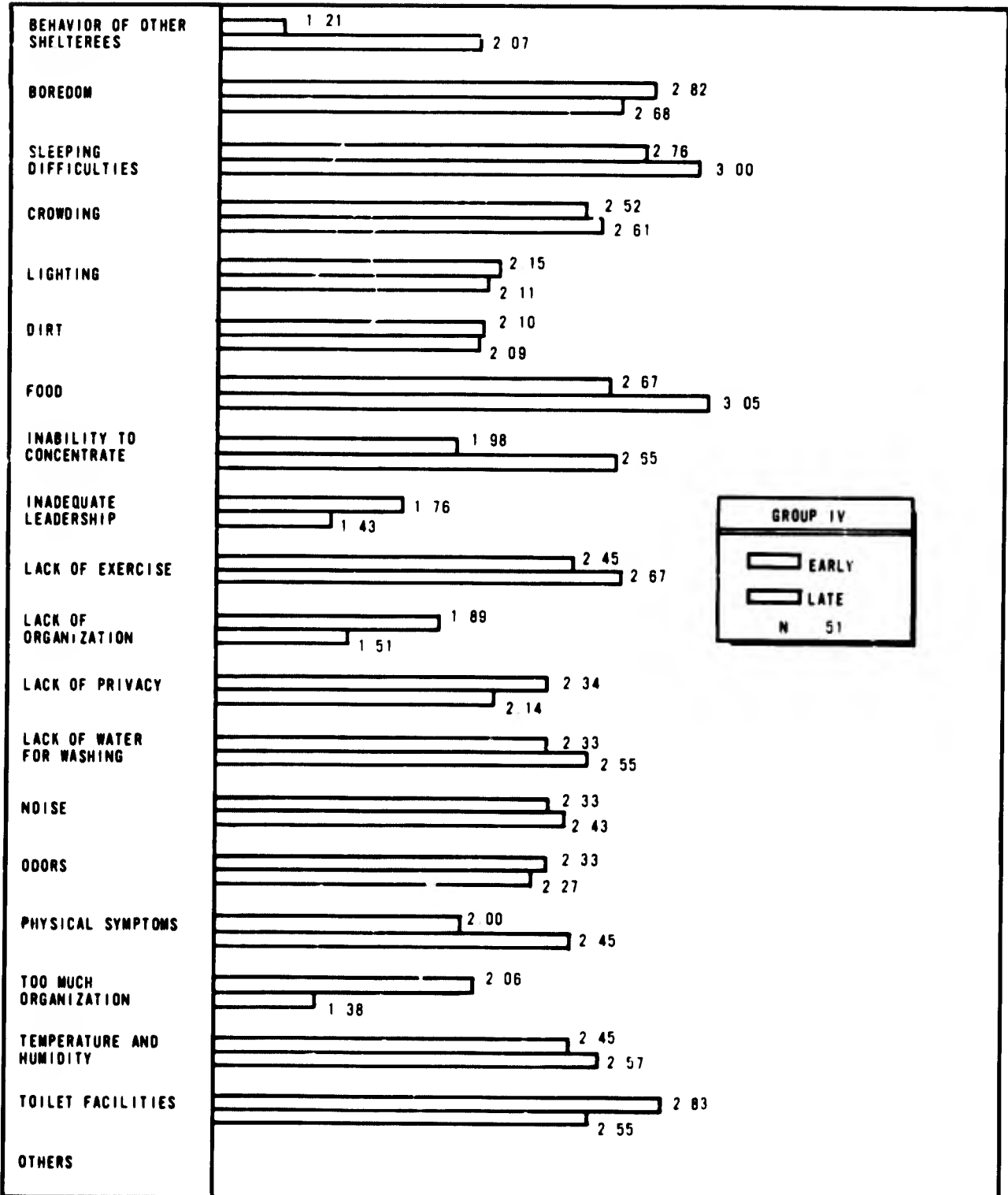
VARIABLE	F VALUE	MEANS
1. PHYSICAL CONFINEMENT	1.04	3.65 EARLY 3.47 LATE
2. PSYCHOLOGICAL CONFINEMENT	.78	3.73 EARLY 3.55 LATE
3. LACK OF PRIVACY	.16	3.84 EARLY 3.81 LATE
4. LACK OF PHYSICAL SUPPORT	1.98	3.75 EARLY 3.41 LATE
5. LACK OF FAMILIAR BEHAVIOR PATTERNS	.40	3.89 EARLY 3.83 LATE
6. LACK OF FAMILIAR INTERPERSONAL RELATIONSHIPS	.93	4.07 EARLY 4.22 LATE
7. LOSS OF IDENTITY	.52	3.93 EARLY 4.01 LATE
8. FEARS	.54	3.64 EARLY 3.72 LATE
FOR $df = 85$: $t = 1.99$ AT .05 $t = 2.84$ AT .01		

TABLE 2 INTERCORRELATION MATRIX OF MEASUREMENT SCORES

	SELF-DESCRIPTION I (LEARY)				PRE- CONFINEMENT FEELINGS QUESTIONNAIRE	POST- CONFINEMENT FEELINGS QUESTIONNAIRE
	DOMINANCE (VS. SUBMISSION) -EARLY	DOMINANCE (VS. SUBMISSION) -LATE	LOVE (VS. HOSTILITY) -EARLY	LOVE (VS. HOSTILITY) -LATE		
EPPS¹						
1. DOMINANCE	.37**	.06	-.25	-.33*	.18	.00
2. ACHIEVEMENT	.21	.09	-.20	-.32*	-.04	-.14
3. DEFERENCE	-.15	.00	.34*	.33*	-.08	-.07
4. AFFILIATION	-.13	-.05	.29*	.26	.07	-.11
5. SUCCORANCE	-.10	.25	-.12	.31*	-.11	.22
6. ABASEMENT	-.39**	-.24	.24	.14	-.09	.11
7. NURTURANCE	-.05	.14	.16	.32*	-.39**	.00
8. METROSEXUALITY	.29*	.02	-.21	-.21	.00	-.03
SELF-DESCRIPTION I (LEARY)						
1. DOMINANCE (VS. SUBMISSION) - EARLY	1.00	.36*	-.28	-.16	-.03	-.05
2. DOMINANCE (VS. SUBMISSION) - LATE	.36*	1.00	-.30*	.53**	-.08	.42**
3. LOVE (VS. HOSTILITY) - EARLY	-.28	-.30*	1.00	.41	-.09	-.31
4. LOVE (VS. HOSTILITY) - LATE	-.16	.53**	.41**	1.00	-.06	.28
PRECONFINEMENT FEELINGS QUESTIONNAIRE	-.03	-.09	-.09	-.06	1.00	.27
POST-CONFINEMENT FEELINGS QUESTIONNAIRE	-.05	.42**	-.31	.28	.27	1.00
SELF-DESCRIPTION II						
1. PHYSICAL CONFINEMENT - EARLY	.02	.07	.19	.13	-.48**	-.49**
PHYSICAL CONFINEMENT - LATE	.10	.46**	.11	.47**	-.49**	-.18
2. PSYCHOLOGICAL CONFINEMENT - EARLY	-.15	.10	.24	.19	-.48**	-.38**
PSYCHOLOGICAL CONFINEMENT - LATE	.11	.54**	.17	.57**	-.43**	-.17
3. LACK OF PRIVACY - EARLY	.13	.03	.30*	.23	-.45**	-.28
LACK OF PRIVACY - LATE	.04	.50**	.17	.53**	-.47**	-.17
4. LACK OF PHYSICAL SUPPORTS - EARLY	.10	.08	.14	.04	-.40**	-.45**
LACK OF PHYSICAL SUPPORTS - LATE	.18	.43**	.18	.45**	-.44**	-.24
5. LACK OF FAMILIAR BEHAVIOR PATTERNS - EARLY	.17	.15	.07	.07	-.47**	-.32**
LACK OF FAMILIAR BEHAVIOR PATTERNS - LATE	.15	.59**	-.07	.41**	-.42**	-.09
6. LACK OF FAMILIAR INTERPER. REL. - EARLY	.10	.09	.00	.08	-.49**	-.15
LACK OF FAMILIAR INTERPER. REL. - LATE	.10	.63**	-.08	.49**	-.41**	.00
7. LOSS OF IDENTITY - EARLY	.07	.07	.19	.16	-.51**	-.41**
LOSS OF IDENTITY - LATE	.07	.59**	.08	.54**	-.48**	-.06
8. FEARS - EARLY	.11	.12	.15	.12	-.47**	-.30**
FEARS - LATE	.12	.62**	.07	.54**	-.44**	-.06

FOR OF .45, R .29 FOR $p < .05$ (*) AND .37 FOR $p < .01$ (**)

1. ONLY THOSE EPPS FACTORS WHICH CORRELATED SIGNIFICANTLY ARE SHOWN.



GROUP IV
 EARLY
 LATE
 N 51

1 00 2 00 3 00 4 00
 NONE LITTLE SOME MUCH

FIG. 3 INTRAGROUP COMPARISON OF THE MEANS OF RESPONSES BETWEEN EARLY AND LATE CONFINEMENT FEELINGS -- GROUP IV

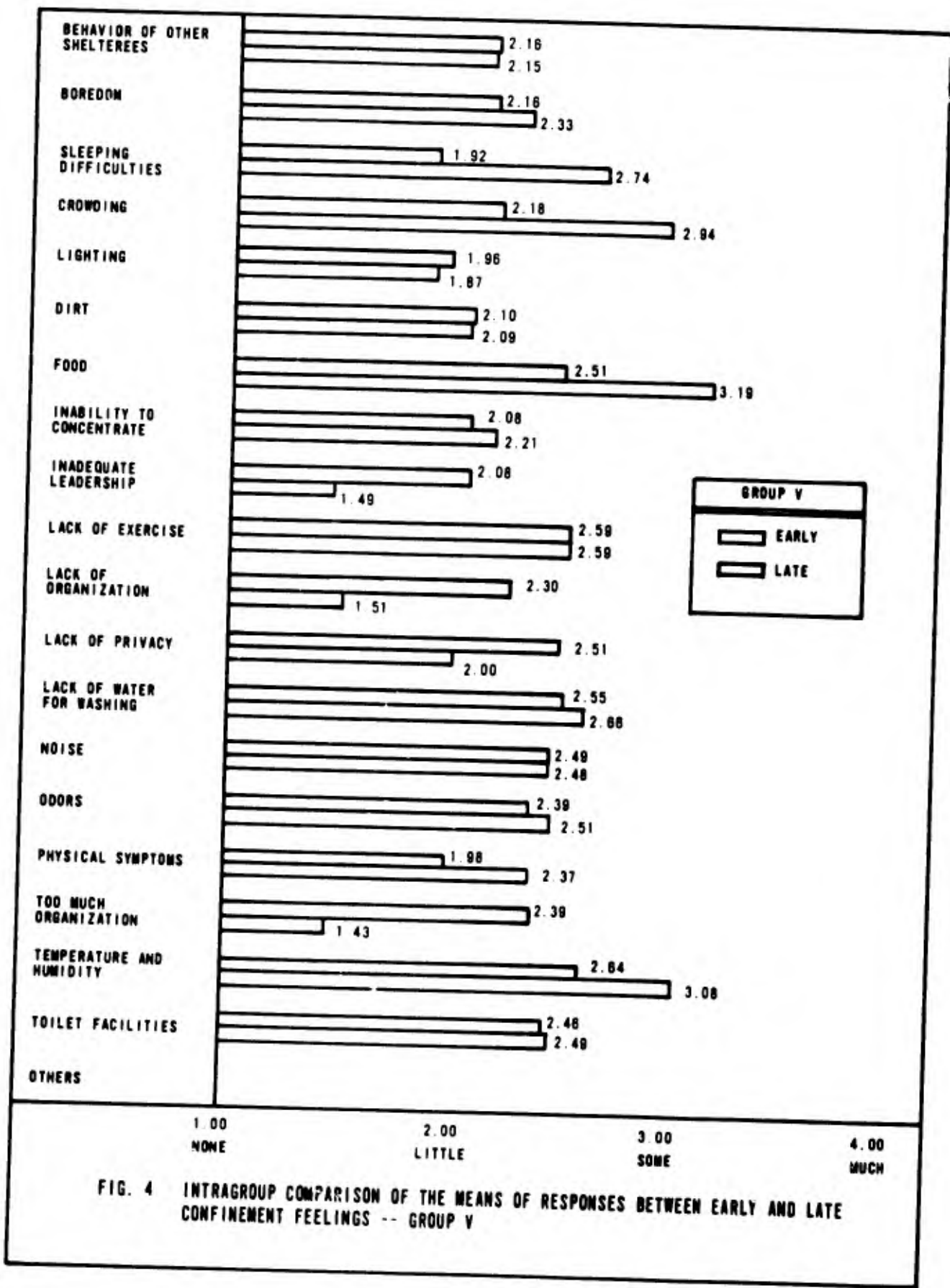


FIG. 4 INTRAGROUP COMPARISON OF THE MEANS OF RESPONSES BETWEEN EARLY AND LATE CONFINEMENT FEELINGS -- GROUP V

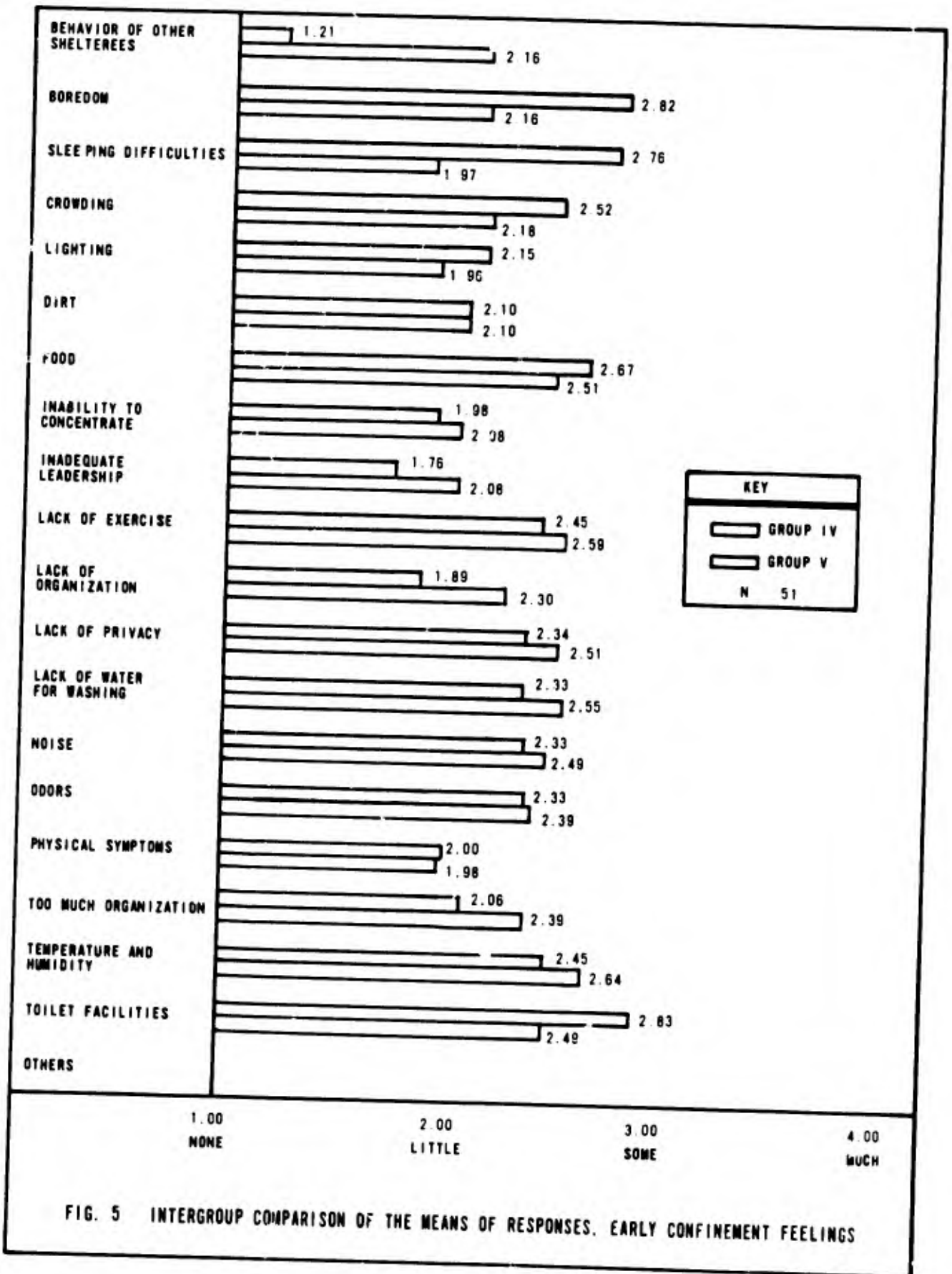
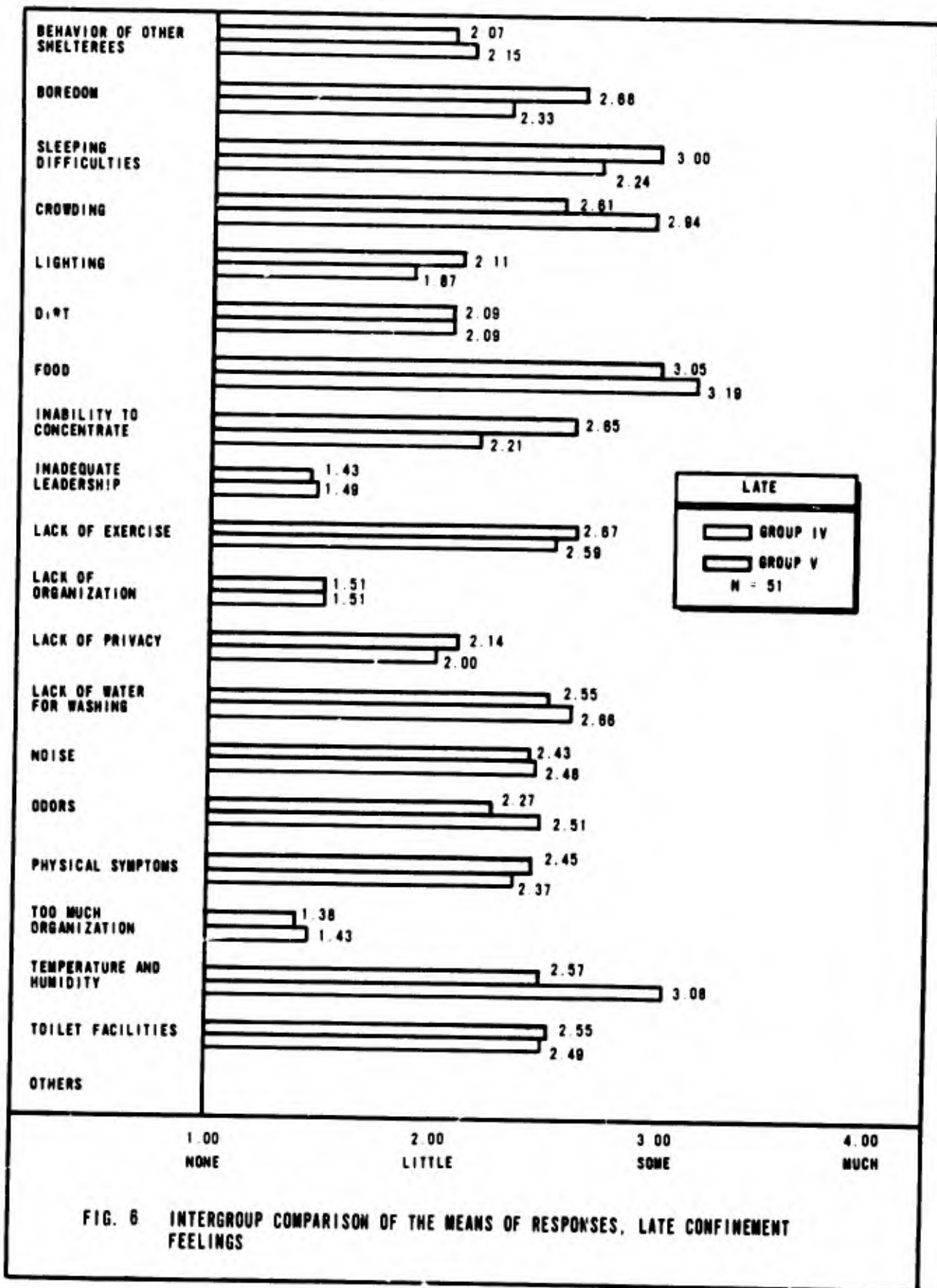
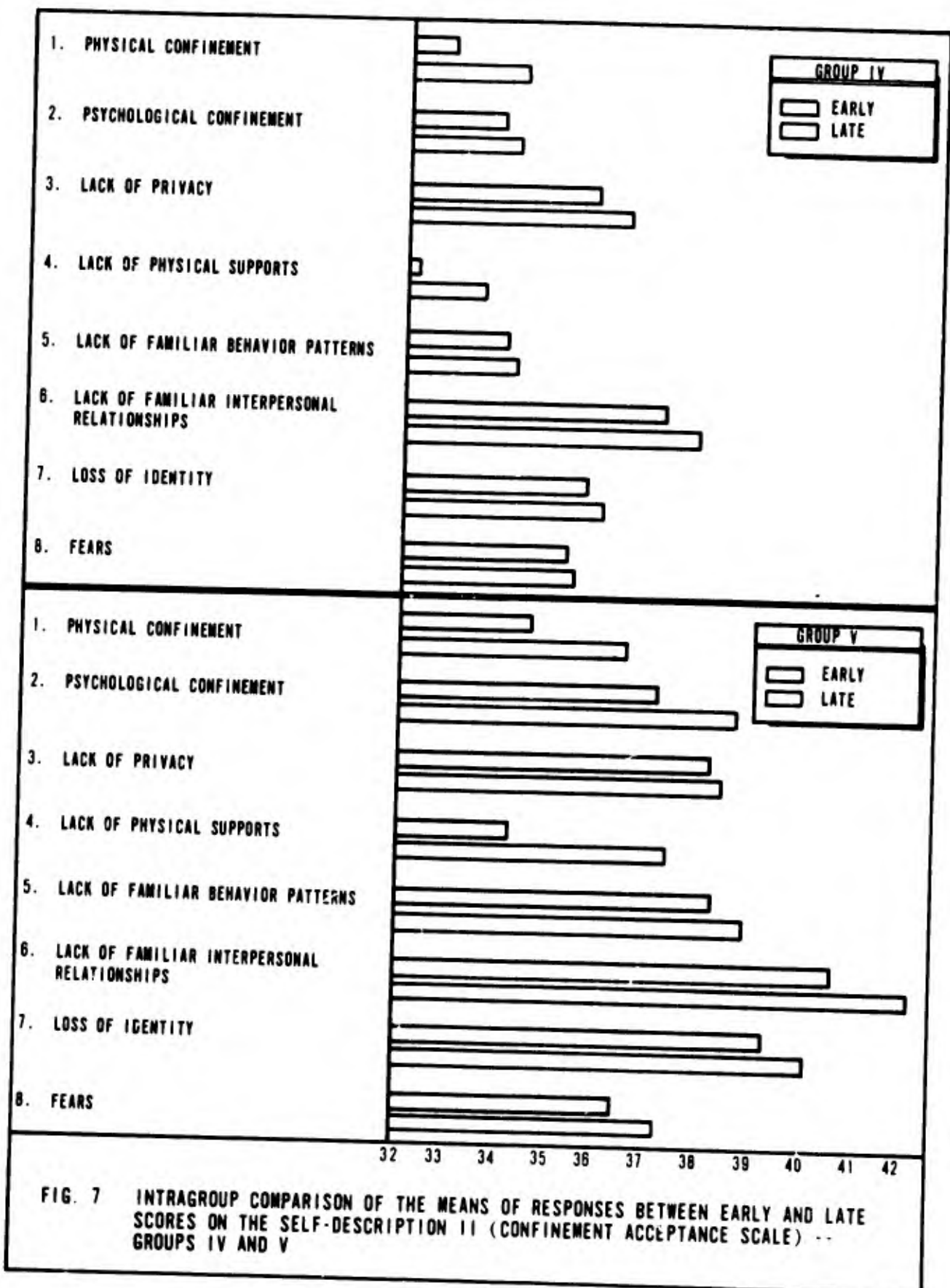


FIG. 5 INTERGROUP COMPARISON OF THE MEANS OF RESPONSES, EARLY CONFINEMENT FEELINGS





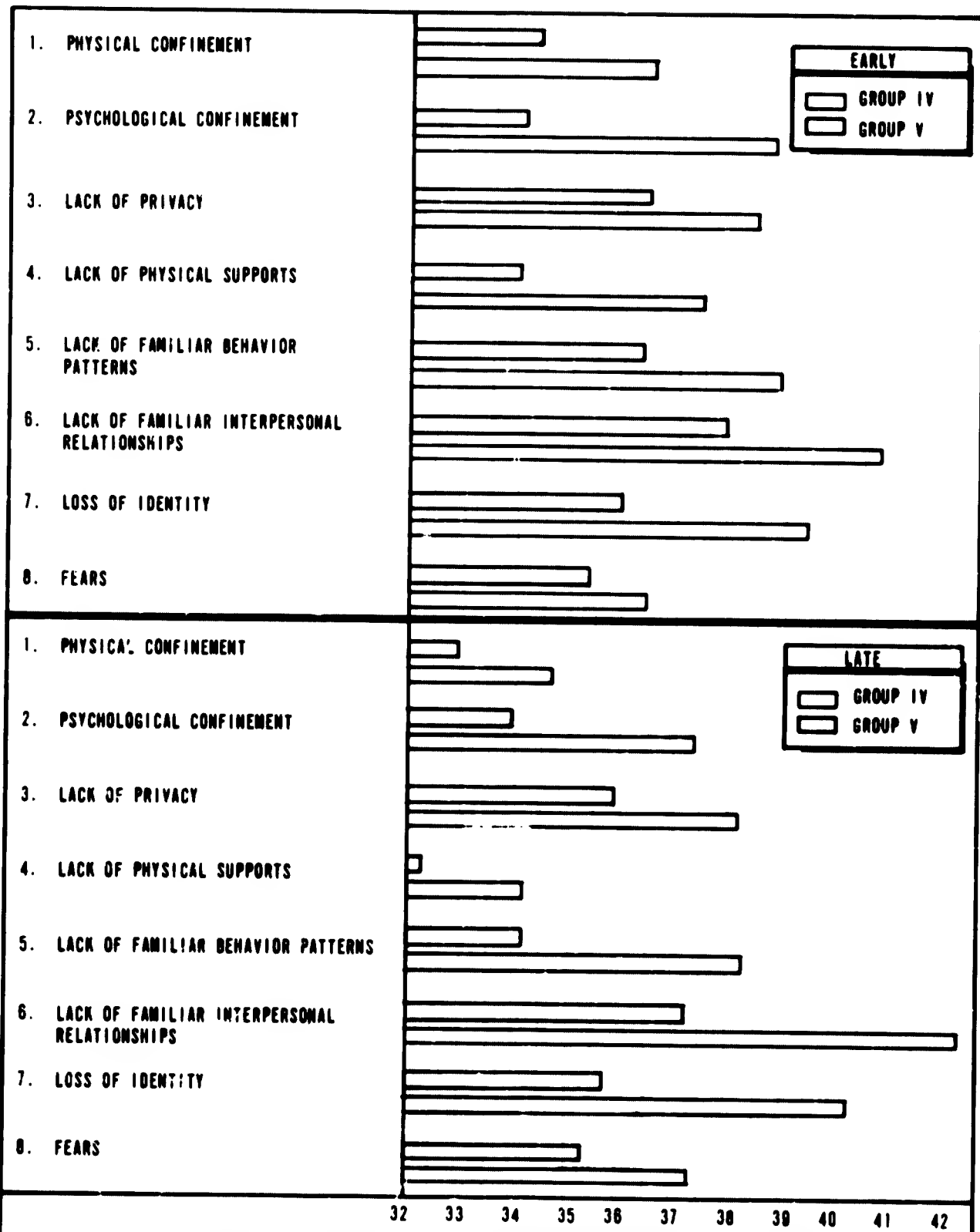


FIG. 8 INTERGROUP COMPARISON OF THE MEANS OF RESPONSES BETWEEN GROUP IV AND V ON THE SELF-DESCRIPTION II (CONFINEMENT ACCEPTANCE SCALE) -- EARLY AND LATE SCORES

dominance scores on the second administration of the Leary correlated negatively with the early Love score but strongly positively with the late Love score. It was also found to correlate strongly positively with the Post-Confinement Feelings Questionnaire, and with each of the eight factor scores on the second administration of the Confinement Feelings Questionnaire. Concerning the Confinement Feelings Questionnaire correlations, it was found that there was almost no relationship between the late Dominance scores or the early Dominance scores and the eight factors scores on the first administration of the CFQ, but the positive correlations of these scores with the Post-CFQ are extremely strong and highly significant. The Love score on the first administration of the Leary correlated positively with the need deference and need affiliation scores of the EPPS, with the Love score from the second administration of the Leary and with the factors score on the first administration of the CFQ. The early Love score also related negatively to the Dominance score from the second administration of the Leary. The Love score on the second administration of the Leary related positively to the need deference Score, the need succorance score, and the need nurturance score on the EPPS, and with the dominance score for the second administration of the Leary as well as with each of the eight factor scores on the second administration of the Confinement Acceptance Scale.

The scores of the Confinement Feelings Questionnaire administered prior to the shelter run correlated negatively with the Nurturance scale on the EPPS, and also negatively with each of the scores on both the early and late administrations of the Confinement Acceptance Scale. The Post-Confinement Feelings Questionnaire scores related positively with the scores from the second administration of the Dominance Scale on the Leary test, and negatively with the early administration scores of the Confinement Acceptance Scale on factors I, II, IV, V, VII, and VIII. A graphic presentation of these correlations is shown in Table 2.

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CHAPTER V

DISCUSSION AND CONCLUSION

A. DEFECTIONS

Of significant interest were other enshelterments in which defectors were noted and considerable data obtained. During Group I, the studies on (those confined to a mental institution) confinement were mandatory and thus no defectors were possible. There were no defectors from Group II, a simulated enshelterment. A single defection in Group III involved a staff member who was terminated prior to the stay's completion. It was noted, however, that his departure was accepted without question and there was no comment by the shelterees. There were no other defectors or persons who failed to complete the shelter stay by leaving early before the official termination of the confinement.

In reference to Groups II and III, an early departure was never discussed with the subjects. This was a purposeful attempt to prevent the formation in the subjects' mind of the idea, "I can leave if I choose to." In a University of Georgia stay (Hammes and Ahearn, 1966), 87 shelterees chose to defect. However, since "28 persons left because of necessity to accompany others... the actual number of defections is (59), or approximately 12%." This study provided considerable defector information.

In the current study, Group IV experienced five "defectors." A family of five (mother, father, and three little boys) and a child less than one year old. The latter was sent home by his parents prior to their exposure to the shelter. Their primary stated concern was for the child's health, apparently only considered after their realization of the large number of participants involved. In the present study, this child will not be considered a defector. In Group V, one man left after being in-shelter 16 hours; the rest of his family (wife and two sons) remained.

The above defections, if scored in a similar fashion to those for the Georgia study, would result in net defection per group of one which is referred to as an effective defector. In addition to the questionnaire data, there is some evidence, obtained by comments in diaries kept by other members, that it was never intended for the child to participate in the study, but that he was brought to obtain the \$10.00 fee paid to initial participants. The family

defecting from Group IV left because the father wished to, and he took his family with him. This is known by statements taken from diaries of the family and others in the shelter. This information has led to the classifying of this group of defectors as one effective defector.

It was expected that a random sample would contain individuals with various thresholds of tolerance of confinement, and that the normal stresses of enshelterment would produce defection. Prior to the shelter runs, it was decided that in the event no one defected, stresses would be initiated at preselected times to encourage leaving. Stresses selected were crowding by the addition of more shelterees, and periods of uncomfortable high ambient temperature of the shelter environment. These stress variables were thought to represent those realistic to shelter living under actual emergency circumstances and also which could legitimately be manipulated in a shelter study. Figure 1 presents the temperature profile for the enshelterments.

In the present enshelterment, for various reasons that are mostly a subject of conjecture, defections did not spontaneously occur, nor did the levels of additional stress induce defection.

It should be noted at this point that the penalty for defection in the present study was more severe than in previous research. Most other procedures have pro-rated the honorarium so that the subjects did not forfeit as much as in the present procedure. This factor undoubtedly contributed to the lower rate of defection achieved of this study.

The effect of uncomfortable ambient temperature did cause reaction of the shelterees in the form of several calls to shelter control concerning the temperature, restricting the places where smoking could be indulged in, imposing some social pressure to reduce the incidence of smoking, and in general, taking action to alleviate the problem, but did not induce any observable tendencies to quit the shelter either in verbal or physical form. These reactions are thought to be those which would manifest members in an actual enshelterment, rather than mass or numerous individual defections.

Late arrivals or overcrowding did not induce additional defections. Late arrivals were met with some verbal resistance by those already present, but they were admitted and integrated into the group.

There is some evidence that further overcrowding would have been resisted by those already established in the shelter, in that both groups discussed the problem immediately after shelter control announced that further late arrivals might attempt to gain entrance. Both groups decided not to admit any additional people if any attempted to gain entrance.

B. DISCUSSION OF CORRELATION ANALYSIS

The Need Achievement score on the EPPS was significantly negatively related to the Love scale score on the second administration of the Leary. This score also related negatively to the Love score on the first administration of the Leary, but the strength of this relationship was not significant. One can only speculate about why there should be this change to a greater negative relationship between the need for achievement and the need for love as a result of the stress in the shelter space. It is likely that in such close quarters, those persons with a strong need to achieve found that it was difficult to engage in achievement oriented activities and still appear to be even as warm and friendly a person as they usually see themselves as being. The Deference scale had a significant positive relationship to both the early and late Love measures on the Leary scale. There appeared to be no change in this relationship as a result of the stay in the shelter. It is reasonable to assume that a person who has high regard for the affection of others would also have a tendency to be more deferent and humble in his relationship with others. This did not seem to be affected by the shelter stress.

The affiliation scale on the EPPS correlated positively and significantly with the Love Scores on the first administration of the Leary scale. The second administration of the Leary scale failed to relate to the affiliation scale at a significant level, but was nonetheless positively related and no real change can be noted.

The scale on the EPPS which measures need for succorance, that is, the need to give aid and succorance to others was slightly but not significantly negatively related to the Love scale on the Leary from the first administration. On the second administration of the Leary, however, there was a significantly positive relationship between the succorance scale and the Love scale. It may be that a person who has a high need to help others may see himself as behaving quite differently when he is in a situation where there is really little help he can

give others. But given a situation such as the shelter stay, where he not only has the opportunity to help others but is almost required to do so through necessity, he reports these actions on a behavior scale such as the Leary. Thus, it appears that at least in this one instance, a person may have needs which he does not express in behavior until their expression is a necessity. The succorance scale on the Edwards may indeed be a good predictor of social behavior in a stress situation, but a poor predictor of behavior in a situation where there is no necessity for action.

The dominance scale on the EPPS, which gives an indication of a person's need to be dominant in a social situation was strongly positively correlated with the dominance scale on the Leary on the first testing. On the second testing, however, there was almost no relationship between the need for dominance and dominance as expressed in behavior as measured by the Leary scale. The interpretations for this change in reported behavior are numerous. The most plausible explanation is that while many people who have a strong need to dominate others see themselves as actually engaging in dominating behavior, when given a situation where they either must dominate or be dominated, their scores on the Leary reflect their behavior. In this case, it is apparent that some of the people became more dominant while others became less. There seemed to be no consistent direction of change in the scores on the Leary dominance scale. It is apparent only that the scores changed a great deal and that there was no longer any consistent relationship with the need for dominance as measured by the Edwards.

The dominance scale on the EPPS was negatively correlated with the Love scales on the early and late administrations of the Leary Scale. On the early administration, however, this relationship did not reach statistical significance. On the late administration of the Leary scale there was a significant negative relationship between dominance on the EPPS and Love as measured by Leary's scale. While the shelter experience served to diminish the relationship of the EPPS dominance scale and the Leary dominance scale with regard to dominant behavior, the shelter experience served rather to more closely align the EPPS scale with the Leary Love scale. This negative correlation implies that those who express a high need to dominate express little loving behavior, while those low on the dominant scale express more loving behavior and further, that this relationship seems to be strengthened following an experience of close social

contact under some stress. While the dominance scale on the EPPS might not be a very good predictor of actual dominant behavior in a shelter situation, it does seem to be a fair predictor of Love behavior.

There is a significant negative relationship between need abasement on the EPPS and the dominance score on the first administration of the Leary scale. On the second administration of the Leary, the relationship between scores was still negative, however, not significant. It appears that this slight, but nonetheless noteworthy, decrease in relationship between these scores is a reflection of the change in behavior as a result of this stressful situation as noted in describing the dominance scales. It is entirely possible that, in spite of the fact that few people reported felt changes in their personalities as a result of staying in the shelter, these changes did, in fact take place as a result of stress and close social contact.

On the need nurturance scale of the EPPS there was a significant, positive relationship to the late administration scores of the Love scale on the Leary. There was a positive but not significant relationship between these two variables on the first administration of the Leary as well, but not to anywhere near the same magnitude. A high score on the nurturance scale signifies that the person has a strong need to be taken care of. While positive, the correlation of the need nurturance scores of the EPPS with the first administration Love score on the score on the Leary was so low as to imply very little relationship at all. On the other hand, the much stronger relationship between the score on the second administration and the need nurturance scale implies that those who are most needy of care also express more love in this situation. This warmth may simply be a necessary reaction in this situation because if a person does not show warm, friendly behavior he is unlikely to be cared for as well as he wishes. There was some tendency for the people high in nurturance to adopt new modes of behavior for coping with these strong needs. Old reaction patterns must have been thrown out, and more highly socialized reactions substituted in their place.

The Confinement Feelings Questionnaire is an instrument which purports to measure frustration tolerance for confinement. A high score on this test indicates intolerance for confinement. On the initial testing with the CFQ, which took place prior to confinement, the scores on the CFQ had a strong negative relationship to need for nurturance. This seemed to indicate that those who feel that they need help from others also feel that they are not bothered by the

factors encountered in confinement. On the second administration of the CFQ, however, this relationship completely disappeared. The correlation coefficient between these two variables using the second administration scores was minus .003 which is highly insignificant and indicates that there is absolutely no relationship between a high score on one scale and a high or low score on the other. It appears then, that while the nurturance score on the EPPS may be a good predictor of how one sees himself as reacting to confinement, it is not by any means a good predictor of his behavior in a confining situation, or of his feelings about the confinement afterward. Why this should be true is not clear, but again one sees that people have reevaluated themselves in the light of their behavior in the shelter.

The need heterosexuality score on the EPPS was significantly positively related to the dominance on the first administration of the Leary, but unrelated to the dominance score on the second administration of that test. It is possible that while filling out the Edwards and while taking the Leary Scale on the first administration, people were responding to stereotypes of themselves rather than their real behavior. One could expect that a man who sees himself as very masculine will score highly on the heterosexual of the EPPS, and one should also expect him to score highly on the dominance scale of the Leary because to be dominant is to be masculine. However, this stereotypic behavior seems not to carry over throughout the shelter stay. It is possible that had the Edwards been given again following the shelter stay, the need heterosexuality scores as well as the need dominance and need abasement scores for the shelterees may have changed considerably.

To summarize the data concerning the relationship of the EPPS scales with those of the Leary and the confinement questionnaire, the Edwards is much more reliable as a predictor of love behavior than of dominance behavior. Also, the need dominance scale of the EPPS predicts how one feels about himself in the area of dominance prior to, but not after, a prolonged shelter stay. One might assume from this that if one wishes to predict affectional behavior using the Edwards, he may have a useful tool; on the other hand, if he wishes to predict leadership, he should look for a different test. The EPPS also failed to predict tolerance for confinement following the shelter experience.

The early administration dominance score correlated .36 with the late dominance score of the Leary Scale, indicating a low reliability. This may be explained by the increased variance of the dominance scores on the second administration of this test, as well as by the changes in self-image as a result of the shelter experience.

The early dominance score correlated .28 with the early love score, barely missing significance. This relationship is not strong, but indicates that when one's self-description is of being a dominant individual, he also tends to describe himself as a rather cold individual.

The dominance score on the second administration of the Leary was negatively correlated with the early love score, and strongly positive with the late love score. This represents a highly significant shift of the relationship between these two scores. Again, if one deals in stereotypes, a person high in dominance would be expected to be colder in his relationships with others, and a person low in dominance warmer in his relationships. As a direct result of the shelter experience, however, the dominance score and the love score became highly positively correlated. In a situation of close contact with other people, group pressures are likely brought to bear on persons in positions of leadership to be benevolent rather than malevolent in their interactions with others. The persons who by their self-descriptions exhibited leadership, were those persons who also by their own descriptions were warm in their interactions with other people.

The best predictor of the late Dominance score was the early Love score, which was negatively, but not significantly, related to the late dominance score. The Confinement Feelings Questionnaire (CFQ) had no relationship with the late dominance score on the first administration of the CFQ, but when highly positively related on the second administration of the CFQ. This indicates that those persons who admitted being bothered by various aspects of confinement who on the second administration of the CFQ also were those individuals who took a leading role in the shelter situation, and those persons who did not admit to complaints, avoided leadership behavior.

The early administration dominance scale scores from the Leary were not found to correlate with any of the Confinement Acceptance Scale (CAS) scores. The scores from the late administration of the Leary dominance scale were found to correlate highly with the late administration scores from the Confinement Acceptance Scales, but not with the early administration scores. The strength of the correlations shown in Table 2 indicate that those persons who have shown leadership or dominant behavior in the shelter experience also are more tolerant of the confinement periods in spite of the fact that they are more willing to admit being bothered by the problems encountered in shelter living.

There was little difference in the correlations between the later administration dominance score and the eight factor scores on the late administration Confinement Acceptance Scales; thus, their scores will not be handled individually. As for the low correlation on the initial administrations of the CAS, it appears that when one is dealing with untested images of himself, he tends to be inconsistent in gauging his own strong points. Following an experience of stress, such as the shelter stay, it becomes apparent that his strengths or weaknesses tend to be related. An alternative hypothesis is that people who are in positions of responsibility in a shelter are better able to tolerate the confinement because of the additional responsibility, although they are also more aware of the extant problems. Unfortunately, there are no data available which support which alternate explanation is correct.

The early administration love scale scores were found to relate significantly to only one of the factor scores on the Confinement Acceptance Scale. This was the score on the first administration of the CAS on factor three, which is "lack of privacy." This relationship diminishes, however, on the second testing. It is felt that this correlation, while significant, is a spurious one and should not be taken too seriously. If it is not a spurious correlation, then it appears that those persons who score high on the initial measure of love on the Leary Scale also are more concerned about lack of privacy in the shelter. This relationship was supported by the relationship between the second administration scores on the love scale of the Leary and the second administration scores on each of the eight factors on the CAS. All these correlations were positive and highly significant. As in the case of the late administration Dominance scores on the Leary, the people who scored high on the second administration of love scale also were those people who scored high on ability to tolerate

confinement. People who scored high on the love scale of the Leary also tended to report a high tolerance for confinement, while those low on the love score of that behavior measure reported low tolerance.

The first administration of the Confinement Feeling Questionnaire correlated strongly negatively with the scores from both the first and second administration of the CAS on all eight factors. This implies a certain consistency in viewpoint and also supports the fact that the Confinement Feelings Questionnaire does predict at a fairly high level the tolerance of an individual for confinement. The negative correlation, of course, means that a low score on the Confinement Feelings Questionnaire would predict a high level of tolerance in the shelter situation. Interestingly, the Confinement Feelings Questionnaire was less adept at predicting tolerance for confinement on the second administration. There were no significant correlations with the factor scores on the second administration of the CAS with the second administration scores of the CFQ; however, the post-CFQ scores did correlate negatively and significantly with the factors 1, 2, 4, 5, 7, and 8 from the first administration of the CAS. The most valuable aspect of this series of correlations is the fact that the early administration Confinement Feelings Questionnaire reliably predicts the person's tolerance for confinement as measured by the Confinement Acceptance Scale both early and late in the shelter stay.

C. DISCUSSION OF CIVIL DEFENSE KNOWLEDGE TEST

From the rather sparse data obtained by the Knowledge Test, it appears that people tend to acquire and retain more knowledge if they are responsible for the accumulation of knowledge, than if another person is appointed as responsible for their learning. One should be cautious about drawing any firm conclusions from these data, however, because the total number of responses to the second administration of the Civil Defense Knowledge test was considerably less than to the first administration. This was more true of Group IV than of Group V.

D. DISCUSSION OF CONFINEMENT ACCEPTANCE SCALE

The analysis of the early and late administrations of the Confinement Acceptance Scale revealed no significant differences as a function of time of confinement. It should be noted, however, that the shelterees had been within the confines of the shelter for some time before this test was actually filled out, and little difference between the early and late confinement scores would be expected, providing the test is reliable.

As noted in the results section, there was a decrease in tolerance; however, not a significant one, for both Group IV and Group V on the first four factors on the confinement acceptance scale between the early and late confinement administrations. These factors are physical confinement, psychological confinement, lack of privacy, and lack of physical support. While these trends are not statistically significant, if the shelter stay were extended over a longer period of time, we would expect to find people less and less able to cope with the environmental problems that arise.

E. EVALUATION OF INSTRUMENTS

Because the CFQ is capable of predicting the Confinement Acceptance scale scores both early and late in the confinement period, it is suggested that this is a useful addendum to the psychological measures used in shelter studies.

The Leary Scale seems sensitive to personality changes encountered as a result of the shelter stay, but the predictive powers of this technique are limited. For measurement of change in perceived behavior during ensHELTERment, it may be found useful; but it is not a useful technique for use in leader selection or for defining any other special criterion group except post hoc.

The EPPS was not found to correlate with other variables sufficiently to warrant its regular use as a selection or prediction device in studies of this type. While there were a few correlations of significant strength, many of these could actually be expected by chance alone, considering the number of correlations that were computed.

The Confinement Acceptance scale is probably a good indicator of a persons ability to tolerate confinement. But its predictive powers, again, are limited to post hoc relationships. The CFQ seems to measure a similar facet

of personality and is much more brief. In addition, the CFQ predicts the scores on the CAS to a great extent and does so in advance of the confinement.

CHAPTER VI

CATEGORICAL DATA ANALYSIS AND DISCUSSION

Examination of the data obtained in the shelterees' diaries revealed no meaningful differences between the two groups. The shelterees failed to consistently fill out the questionnaires and a quantitative analysis was not performed. A content analysis revealed that comments fall into certain patterns.

In general the comments exhibited negative reactions.

The category accounting for the largest number of reactions are food and water, sleeping, psychological confinement, and physical symptoms.

With respect to the comments concerning food and water, the main complaint was that the food was unpalatable. This was especially important to those individuals who were accompanied by children. The children often refused to eat the crackers and had to be encouraged to do so by their parents.

The comments concerning the water are interesting. They indicate an initial distaste for the water but, as time passed, it seemed to become more palatable. This could be for two reasons: adaptation or getting used to the taste, and/or they learned to treat their water prior to its need thereby reducing the medicinal taste. Again, the children objected more to the water than the adults did.

With respect to sleeping, many individuals commented that sleeping was very difficult. There is some indication that adaptation operates here, also, and that the ability to sleep improved as time in the shelter passed.

Some comments reveal that the participants were constantly aware that the enshelterment was simulated. There is some interesting speculation on their part with respect to how things might go under actual enshelterment. One comment indicates this well. "I think it is surprising how well things went, but I am sure that if people were under tensions as a result of a real emergency, we would have had a lot more problems and some unpleasantness."

Other comments indicate that other individuals, at least at times, felt the situation was somewhat realistic; "I felt panicky last night when the newcomers joined us, thinking, 'what if we would be bombed and have to stay in this place before at least being outside for awhile?' For a few moments I felt terribly confined."

Another asked of her mother, "What did shelter control say?" and I explained we were having a pretend war. She wanted extra assurance that it was only pretend. "In this instance, at least, it seems that the children were experiencing a fairly high fidelity situation. Finally, another statement, "It's hard to feel that this is an emergency; even though we hear the announcements, we still know that this is not for real."

The above comments are illustrative of the psychological feelings experienced by the shelterees during the enshelterment. For some, it was strictly an experiment. They knew it and remained aware of it most of the time. Some motivations for their continuing were expressed as follows: "The common denominator for enduring seems to be hard, cold cash." This would indicate that the honorarium of \$50 was a significant factor in reducing defection.

With respect to physical symptoms, the one most commonly expressed was headache. Many diaries contained references such as, "everyone complains of headaches," or "I have become somewhat irritable and have a slight headache," "kids had a headache all day, which aspirin or phenobarb has not relieved."

Some individuals complained of nausea; "Cool compresses were applied to a man who felt nauseated. He completely recovered." "Suddenly two sisters down near the toilet became ill. I feel that it was the odor from the overflow rather than a bug."

Whether these physical symptoms can be attributed to the psychological effects of the enshelterment or to the actual physical effects of high temperatures, smoke, odors from the toilets, etc., cannot be determined from this experiment. The fact that there were few differences between groups even though there were minor temperature profile differences, would indicate that the effect cannot be attributed to abnormally high temperatures. Nausea was not related to temperature peaks as much as to incidents causing noxious odors, such as the toilet breakage. It would seem most logical that the tension and stresses of an environment so completely foreign would also contribute a great deal to headaches and nausea.

There were some expressions of favorable attitudes concerning the stay in the shelter. The most significant comment goes as follows, "Though our surroundings are so uncomfortable, we have a light-hearted quality to our conversation, and there is much laughing in the group." This would seem to indicate that, for some individuals at least, the comradery of the group was enjoyable. "It was very impressive that we all got along well. There were absolutely no discipline problem or questioning of authority." "Best recreation, talking to neighbors." These comments bolster the contention that psychological support from other individuals in the same situation is important to the ability to tolerate confinement. There were also a few individuals who expressed the opinion that this experience could possibly have survival value for them in the future.

CHAPTER VII

SUMMARY

Two simulated enshelterments of 67 hours each were conducted as realistically as was feasible. One condition had a trained shelter manager, while the other did not. No differences in defections, and few on the psychological measures of tolerance of confinement as a function of shelter manager, were observed.

The psychological measures, which were employed as additional indices of tolerance of confinement, were found to have varying degrees of usefulness. In general, a great deal of overlap was observed among the various measures, indicating a degree of reliability. Generally, the Confinement Acceptance Scale and the Confinement Feelings Questionnaire were found to have sufficient relationship to be a potentially useful predictors of tolerance of confinement.

Implications for Future Research

While much of the content of this section is not directly tied to the data of the report, it does represent the judgment of the senior author, based on the experiences gained with the project as well as previous experience in conducting group research.

Because the personality measure approach in the present instance has not been particularly fruitful, and considering that personality variables are less subject to direct control, variables such as conformity, leadership, and attitudes would appear to be more useful in confinement research. Several reasons support this contention; but the most important one, from the standpoint of OCD, is that these variables, if relevant, are more subject to direct manipulation than are personality factors. For example, if a certain style of leadership were found to lead to more defections than another, specific handbooks and training programs could be developed to minimize this type of leadership. On the other hand, if certain personality factors lead to defections, these may be of academic interest, but what can be done about them?

Sherif and Harvey (1952) have demonstrated that under ambiguous and anxiety-producing situations, conformity is enhanced. This study is particularly

relevant, in that a darkened room with obstacles for the subjects to bump into, and an ambiguously defined procedure, were manipulated to induce anxiety. Under such conditions, conformity behaviors were enhanced and behavior, in general, was more variable.

The above findings may be relevant to shelter research. Actual emergency situations will be high anxiety ones, and conformity behavior could be high. This fact could work either to the advantage or the disadvantage of the well being of the shelter, depending upon the situation and the type of leadership, which either involves or is established by other means.

If the leadership is effective, such conformity behavior could have positive survival value for the shelters; if it is ineffective, such conformity could have negative survival value.

The above are offered only as examples of the types of variables which, in retrospect, appear to be those that experimental shelter research should concern itself with.

It should be pointed out that much of the research employing such variables, has been conducted on small groups of subjects. Further, its subjects were much more homogeneous than the population in general, consisting usually of college students, and precautions should be taken in generalizing from such data to shelter situations. It should also be pointed out that an extensive body of data is available, much of which may well be directly relevant to OCD programs and goals.

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APPENDIX A

Instruments Used to Measure Variables

Self-Description Scale I (Leary)

Scoring Blank for Scale

Confinement Acceptance Scale -- Form C

Scoring Blank for Scale

Confinement Feelings Questionnaire

Civil Defense Knowledge Questionnaire

Items-Brought and Items-Used-List

SELF-DESCRIPTION SCALE I

Leary

SELF-DESCRIPTION I (LEARY)

SELF-DESCRIPTION

On the next two pages are lists of descriptive words and phrases which you will use in describing yourself.

Read the items quickly, and fill in the circle in front of each item you consider to be descriptive of yourself at the present time. Leave the circle blank if an item does not describe you.

In the example below, the person has shown that Item A describes him and Item B does not describe him.

Item

A ● well-behaved

B ○ suspicious

Your first impression is, generally, the best, so work quickly and don't be concerned about duplications, contradictions, or being exact. Mark the items according to the way you feel today. Do the COLUMNS in order, starting with COLUMN 1.

SUBJECT: _____

DATE: _____

COLUMN 1

COLUMN 2

- P O well thought of
- P O makes a good impression
- A O able to give orders
- A O forceful
- B O self-respecting
- B O independent
- C O able to take care of self
- C O can be indifferent to others
- D O can be strict, if necessary
- D O firm but just
- E O can be frank and honest
- E O critical of others
- F O can complain if necessary
- F O often gloomy
- G O able to doubt others
- G O frequently disappointed
- H O able to criticize self
- H O apologetic
- I O can be obedient
- I O usually gives in
- J O grateful
- J O admires and imitates others
- K O appreciative
- K O very anxious to be approved of
- L O cooperative
- L O eager to get along with others
- M O friendly
- M O affectionate and understanding
- N O considerate
- N O encourages others
- O O helpful
- O O big-hearted and unselfish

- O often admired
- O respected by others
- O good leader
- O likes responsibility
- O self-confident
- O self-reliant and assertive
- O business-like
- O likes to compete with others
- O hard-boiled when necessary
- O stern but fair
- O irritable
- O straightforward and direct
- O resents being bossed
- O skeptical
- O hard to impress
- O touchy and easily hurt
- O easily embarrassed
- O lacks self-confidence
- O easily led
- O modest
- O often helped by others
- O very respectful to authority
- O accepts advice readily
- O trusting and eager to please
- O always pleasant and agreeable
- O wants everyone to like him
- O sociable and neighborly
- O warm
- O kind and reassuring
- O tender and soft-hearted
- O enjoys taking care of others
- O gives freely of self

SUBJECT: _____

DATE: _____

COLUMN 3

- P always giving advice
- P acts important
- A bossy
- A dominating
- B boastful
- B proud and self-satisfied
- C thinks only of himself
- C shrewd and calculating
- D impatient with others' mistakes
- D self-seeking
- E outspoken
- E often unfriendly
- F bitter
- F complaining
- G jealous
- G slow to forgive a wrong
- H self-punishing
- H shy
- I passive and unaggressive
- I meek
- J dependent
- J wants to be led
- K lets others make decisions
- K easily fooled
- L too easily influenced by friends
- L will confide in anyone
- M fond of everyone
- M likes everybody
- N forgives anything
- N oversympathetic
- O generous to a fault
- O overprotective of others

COLUMN 4

- tries to be too successful
- expects everyone to admire him
- manages others
- dictatorial
- somewhat snobbish
- egotistical and conceited
- selfish
- cold and unfeeling
- sarcastic
- cruel and unkind
- frequently angry
- hard-hearted
- resentful
- rebels against everything
- stubborn
- distrusts everybody
- timid
- always ashamed of self
- obeys too willingly
- spineless
- hardly ever talks back
- clinging vine
- likes to be taken care of
- will believe anyone
- wants everyone's love
- agrees with everyone
- friendly all the time
- loves everyone
- too lenient with others
- tries to comfort everyone
- too willing to give to others
- spoils people with kindness

SUBJECT _____
 HOSPITAL _____
 TESTING NO. _____

SCORE			D $7(BC + NO) + AP$	S $7(FG + JK) + HI$	DERIVED SCORES		
AP					L $7(JK + NO) + LM$	H $7(BC + FG) + DE$	DOMINANCE
BC			SUBMISSION				
DE			DOM _____	LOV _____	LOVE		
FG					HOSTILITY		
HI			DOM D-S	LOV L-H	LOV		
JK							
LM							
NO							

TESTING NO. _____

SCORE			D $7(BC + NO) + AP$	S $7(FG + JK) + HI$	DERIVED SCORES		
AP					L $7(JK + NO) + LM$	H $7(BC + FG) + DE$	DOMINANCE
BC			SUBMISSION				
DE			DOM _____	LOV _____	LOVE		
FG					HOSTILITY		
HI			DOM D-S	LOV L-H	LOV		
JK							
LM							
NO							

TESTING NO. _____

SCORES			D $7(BC + NO) + AP$	S $7(FG + JK) + HI$	DERIVED SCORES		
AP					L $7(JK + NO) + LM$	H $7(BC + FG) + DE$	DOMINANCE
BC			SUBMISSION				
DE			DOM _____	LOV _____	LOVE		
FG					HOSTILITY		
HI			DOM D-S	LOV L-H	LOV		
JK							
LM							
NO							

CONFINEMENT ACCEPTANCE SCALE
SELF-DESCRIPTION II
Form C

_____ Name

_____ Date

Self-Description II

Form C

Listed below are some statements. These are things that bother some people living closely together. We would like to know how you feel about each. You can tell us by circling the number which describes your feelings best. Draw a line through all the numbers if the statement does not apply to you.

For example, the person answering below says that he is always bothered by doors being locked, that he is sometimes bothered by being unable to leave, and that the last statement does not apply to him.

	Always	Often	Sometimes	Rarely	Never
1. Doors being locked.	①	2	3	4	5
2. Being unable to leave.	1	2	③	4	5
3. Being unable to shave.	1	2	3	4	5

Circle the number according to the way you feel today. Your first feeling is usually the best, so read the statement quickly and circle the number which applies to you.

The following things bother me:

	Always	Often	Sometimes	Rarely	Never
1. Not being able to make my own decisions.	1	2	3	4	5
2. Living in close contact with others.	1	2	3	4	5
3. Being unable to change my clothes as I would like to.	1	2	3	4	5
4. Not being with my family.	1	2	3	4	5
5. Being uncertain of rules and procedures.	1	2	3	4	5
6. Not being able to see outside.	1	2	3	4	5
7. Not being able to leave when I want to.	1	2	3	4	5
8. Not having privacy.	1	2	3	4	5
9. Not being able to be alone with anyone.	1	2	3	4	5
10. Having to be without most of my personal belongings.	1	2	3	4	5
11. Not being able to participate in some of my favorite recreations.	1	2	3	4	5
12. Having to live in unfamiliar surroundings.	1	2	3	4	5
13. Not sleeping in my own bed.	1	2	3	4	5
14. Being confined in a small, close area.	1	2	3	4	5
15. Being confined for a long time.	1	2	3	4	5
16. Not knowing what to do most of the time.	1	2	3	4	5
17. Not being able to open windows.	1	2	3	4	5
18. Having to sleep in a room with others.	1	2	3	4	5
19. Losing contact with friends.	1	2	3	4	5
20. Having to give up regular activities.	1	2	3	4	5
21. Having to get up and go to bed at a certain time.	1	2	3	4	5
22. Not having my favorite chair to sit in.	1	2	3	4	5

	Always	Often	Sometimes	Rarely	Never
23. Being unable to visit with friends.	1	2	3	4	5
24. Having to tolerate unpleasant habits of other people.	1	2	3	4	5
25. Not having a choice of clothing.	1	2	3	4	5
26. Not being able to control the temperature.	1	2	3	4	5
27. Floors and walls being cold.	1	2	3	4	5
28. Not having a selection of food.	1	2	3	4	5
29. Not having water for washing.	1	2	3	4	5
30. Not having running water.	1	2	3	4	5
31. Not knowing what some members of my family are doing.	1	2	3	4	5
32. Having to be with people who smoke.	1	2	3	4	5
33. Not having enough choice of recreational activities.	1	2	3	4	5
34. Having to see other people be ill or uncomfortable.	1	2	3	4	5
35. Having uncomfortable sleeping conditions.	1	2	3	4	5
36. The way other people are treated.	1	2	3	4	5
37. Not being allowed to take showers.	1	2	3	4	5
38. Having to tolerate unpleasant odors.	1	2	3	4	5
39. Having to eat at a certain time.	1	2	3	4	5
40. Having to maintain a schedule.	1	2	3	4	5
41. Having my physical activity restricted.	1	2	3	4	5
42. Not having enough to do to fill my time.	1	2	3	4	5
43. Not being able to snack when I choose.	1	2	3	4	5
44. Not having fresh air.	1	2	3	4	5
45. Having no place to put my belongings.	1	2	3	4	5

	Always	Often	Sometimes	Rarely	Never
46. Having no pillow to sleep on.	1	2	3	4	5
47. Eating food I'm not used to.	1	2	3	4	5
48. Having to drink warm water.	1	2	3	4	5
49. Being in close contact with other people's children.	1	2	3	4	5
50. Not having my favorite beverage.	1	2	3	4	5
51. Having to tolerate the noises of the children.	1	2	3	4	5
52. Not having a comfortable place to sit.	1	2	3	4	5
53. Not being able to brush my teeth.	1	2	3	4	5
54. Having to live in depressing surroundings.	1	2	3	4	5
55. Not being able to read the newspaper.	1	2	3	4	5
56. Not having enough peace and quiet.	1	2	3	4	5
57. Not being able to listen to the radio.	1	2	3	4	5
58. Having to live in a cluttered area.	1	2	3	4	5
59. Not being able to sleep when I want to.	1	2	3	4	5
60. The size and shape of the room.	1	2	3	4	5
61. Not having suitable lights.	1	2	3	4	5
62. Not being able to turn lights on and off as I wish.	1	2	3	4	5
63. Not being able to go to my regular church and Sunday school.	1	2	3	4	5
64. Having plastic seat on the toilet.	1	2	3	4	5
65. Losing sexual outlets.	1	2	3	4	5
66. Having opportunity to act as parent, husband or wife reduced.	1	2	3	4	5
67. Not being able to choose the people who share the area.	1	2	3	4	5

NAME: _____

DATE: _____

PRE-CONFINEMENT FEELINGS

Please rate how much you believe each of the following factors will bother you. Circle the word on the right that fits your feeling most closely.

a. Behavior of other shelterees	NONE	MUCH	SOME	LITTLE
b. Boredom	NONE	MUCH	SOME	LITTLE
c. Sleeping difficulty	NONE	MUCH	SOME	LITTLE
d. Crowding	NONE	MUCH	SOME	LITTLE
e. Lighting	NONE	MUCH	SOME	LITTLE
f. Dirt	NONE	MUCH	SOME	LITTLE
g. Food	NONE	MUCH	SOME	LITTLE
h. Inability to concentrate	NONE	MUCH	SOME	LITTLE
i. Inadequate leadership	NONE	MUCH	SOME	LITTLE
j. Lack of exercise	NONE	MUCH	SOME	LITTLE
k. Lack of organization	NONE	MUCH	SOME	LITTLE
l. Lack of privacy	NONE	MUCH	SOME	LITTLE
m. Lack of water for washing	NONE	MUCH	SOME	LITTLE
n. Noise	NONE	MUCH	SOME	LITTLE
o. Odors	NONE	MUCH	SOME	LITTLE
p. Physical symptoms (head- aches, constipation, etc.)	NONE	MUCH	SOME	LITTLE
q. Too much organization	NONE	MUCH	SOME	LITTLE
r. Temperature and humidity	NONE	MUCH	SOME	LITTLE
s. Toilet facilities	NONE	MUCH	SOME	LITTLE

What three things do you think will bother you most in an actual emergency if you were to be confined?

- a.
- b.
- c.

NAME: _____

DATE: _____

POST - CONFINEMENT FEELINGS

Please rate each of the following factors by circling whether it bothered you MUCH (you could hardly stand it), SOME (annoying, but not too bad), LITTLE (you really don't think it was too bad), NONE (it did not bother you at all).

a. Behavior of other shelterees	NONE	MUCH	SOME	LITTLE
b. Boredom	NONE	MUCH	SOME	LITTLE
c. Sleeping difficulty	NONE	MUCH	SOME	LITTLE
d. Crowding	NONE	MUCH	SOME	LITTLE
e. Lighting	NONE	MUCH	SOME	LITTLE
f. Dirt	NONE	MUCH	SOME	LITTLE
g. Food	NONE	MUCH	SOME	LITTLE
h. Inability to concentrate	NONE	MUCH	SOME	LITTLE
i. Inadequate leadership	NONE	MUCH	SOME	LITTLE
j. Lack of exercise	NONE	MUCH	SOME	LITTLE
k. Lack of organization	NONE	MUCH	SOME	LITTLE
l. Lack of privacy	NONE	MUCH	SOME	LITTLE
m. Lack of water for washing	NONE	MUCH	SOME	LITTLE
n. Noise	NONE	MUCH	SOME	LITTLE
o. Odors	NONE	MUCH	SOME	LITTLE
p. Physical symptoms (head-aches, constipation, etc.)	NONE	MUCH	SOME	LITTLE
q. Too much organization	NONE	MUCH	SOME	LITTLE
r. Temperature and humidity	NONE	MUCH	SOME	LITTLE
s. Toilet facilities	NONE	MUCH	SOME	LITTLE

Which factor bothered you most? _____ 1

Which factor bothered you second most? _____ 2

Which factor bothered you third most? _____ 3

POST-CONFINEMENT FEELING QUESTIONNAIRE

1. If you were to be confined in a shelter during an emergency, what member of this group would you most want to have as leader?

2. If you were to be confined during an emergency, which persons of this group would you prefer to have with you, in addition to the person(s) named in question one, and members of your family?

3. If you were to be confined, which members of this group would you least want to have with you?

4. Which persons did you spend the most time with?

5. Did anyone interfere with the group working together?
(Circle one: Yes No) Who?

6. What three things did you like the best?
 - a.

 - b.

 - c.

7. What part did the fifty dollar honorarium play in your decision to help with the study?

8. If an actual emergency were to occur,
 - a. What would you do first?

 - b. Where would you take shelter?

 - c. Likely, where would your family members take shelter?

 - d. Which (quickly gotten) supplies would you take with you?

9. If you were to come for another 3-day shelter stay, which things would you bring with you (must be carried easily on your person)?

10. What recommendations do you have for the caring of:
 - a. Young, school-age children (under 12 years of age)?

 - b. Teenagers (ages 12-20)?

c. Young adults (ages 20-30)?

d. Adults (over 30)?

e. The aged?

f. The seriously ill?

g. Those unable to adjust?

11. The government has stocked many places with basic supplies; namely, crackers, water, sanitary kits, medical kits, and radiological monitoring instruments. Is there anything else you think they should stock that you would consider:

a. Very necessary:

b. Helpful, but not necessary:

APPENDIX B

Instruments Used to Measure Preliminary Information

Morgantown Defectors' Questionnaire

Staff Evaluation Information Sheet Concerning Defectors

MORGANTOWN DEFECTORS' QUESTIONNAIRE

BLANK PAGE

Information Sheet

Dear _____:

Research sponsored by the Office of Civil Defense is being carried out by HRB-Singer concerning the reasons for a person's leaving a fallout shelter early. We understand that you participated in a shelter study, and requested to leave before it was over.

We are interested in your reasons for leaving the shelter stay early, and how you felt about it. If we can find out why people choose to leave the shelter early, we may be able to correct these causes.

Please answer the following questions as completely as possible. Your response will be kept in strict confidence. Note that your name is not asked for and does not appear on the blank.

Thank you very much for helping us by answering these questions. We greatly appreciate your assistance.

Sincerely,

Enclosure

1. a. What was the date of the shelter stay? (approximate)
b. How many people were there in the shelter?
2. How long was the shelter stay planned to last?
3. How long did you stay in the shelter?
4. When did you first feel like leaving?

What happened between then and when you left?

Did anyone try to encourage you to stay? Who? How?

What could have helped?

5. Did anyone leave with you? How many?

What was their relation to you?

When you got home, did you regret leaving?

6. What three things were hardest to adjust to?
 - a.
 - b.
 - c.

7. What three things were most agreeable?

a.

b.

c.

8. What changes would you suggest to be made in the shelter experience?

9. The Government has stocked many places with basic supplies; namely, crackers, water, sanitary and medical kits, and radiological monitoring instruments. Is there anything else you think should be stocked? Put these items in order, giving the most important first.

a.

b.

c.

d.

10. Other Comments:

11. Please fill in the blanks:

a. I am _____ years old.

b. I am a female _____ or male _____

c. I have finished _____ years of school.

d. On my job I do _____ .

e. My father does _____ on his job.

f. My mother does _____ on her job.

g. I live in Town _____ or Country _____ .

CIVIL DEFENSE INFORMATION

I. We are interested in your feelings on the nuclear warfare issue. Please answer the following.

1. One thing we are interested in is how people feel about the possibility of a major war occurring. In your opinion, is it likely or unlikely that there will be a major war between the U.S. and Russia, China, or some other country?

Likely _____

Unlikely _____

2. If a nuclear war does come, when do you think it will come?

6 months or less _____

6 months to 2 years _____

Over 2 years _____

Not at all _____

3. Suppose you were to become convinced that Russia or China would start a war. How do you feel about the U.S. striking first -- before Russia or China had a chance to attack us? Would you be in favor of or opposed to striking first?

In favor _____

Opposed _____

4. If the U.S. were attacked, do you think any bombs or missiles would fall on or near State College? Western Pennsylvania? The East Coast?

State College _____

Western Pennsylvania _____

East Coast _____

5. Let's suppose that H-bombs or missiles exploded on or close to State College.

(a) Do you feel that you could do something to protect yourself from the blast of the bombs?

Yes _____

No _____

If yes, what? _____

(b) Could you do something to protect yourself from radioactive fallout?

Yes _____

No _____

If yes, what? _____

(c) Could you do something to protect yourself from fire caused by bombs?

Yes _____

No _____

If yes, what could you do? _____

6. Now let's suppose that State College is not hit directly by bombs or missiles.

(a) Do you think you could be killed or injured by the blast from bombs or missiles exploding somewhere else, for example.

(1) On the East Coast

Yes _____

No _____

(2) On the West Coast

Yes _____

No _____

(b) Do you think you could be killed or injured by fire if the explosion were on the:

(1) East Coast

Yes _____

No _____

(c) Do you think you could be killed or made sick from radioactive fallout if the explosion were on the:

(1) East Coast

Yes_____

No_____

(2) West Coast

Yes_____

No_____

7. Let's think for a moment about people who live far enough away to escape the bomb blast. If these people had fallout shelters, what do you think their chances would be for escaping serious radiation sickness from fallout? Do you think they would have:

Very good chance_____

Some chance_____

Very little chance_____

No chance_____

II. Please indicate whether you agree or disagree with the following statements.

8. If you get exposed to any radiation, you are sure to die.

Agree_____

Disagree_____

9. Fallout from one bomb may cover thousands of square miles.

Agree_____

Disagree_____

10. If you get radiation sickness, you should avoid getting near others so they won't catch it.

Agree_____

Disagree_____

11. A new pill has been developed that will protect you against radioactive fallout.

Agree _____

Disagree _____

12. A nuclear bomb would contaminate the water supply. As a result, almost everyone would die before the water became fit to drink.

Agree _____

Disagree _____

13. A nuclear bomb would destroy all food and ways of producing food, so people would eventually starve -- even if they were protected by a shelter.

Agree _____

Disagree _____

14. A plastic suit with filtering mask is an example of adequate protection against fallout.

Agree _____

Disagree _____

15. Most fallout loses its power to harm people in three or four days.

Agree _____

Disagree _____

16. Following a nuclear attack, the contaminated air can be made safe to breathe.

Agree _____

Disagree _____

17. The radioactivity after a severe nuclear attack would make the earth impossible to live in for years.

Agree _____

Disagree _____

18. Following a nuclear attack, great weather storms from the explosions would sweep the nation.

Agree_____

Disagree_____

19. A fallout shelter should have an airtight door to keep out radiation.

Agree_____

Disagree_____

20. You cannot see fallout.

Agree_____

Disagree_____

21. It would take a little while after an attack, but law and order would be restored.

Agree_____

Disagree_____

22. Most people have the space to put in a shelter if they really want one.

Agree_____

Disagree_____

23. Scientists don't understand the nuclear phenomena well enough to make reliable predictions.

Agree_____

Disagree_____

24. There are now enough marked and stocked public shelters to accommodate the entire population.

Agree_____

Disagree_____

25. Instruments are necessary for detecting the amount of radiation given off by fallout.

Agree _____

Disagree _____

26. Fallout on food can be washed or peeled away, making the food safe to eat.

Agree _____

Disagree _____

III. Do you support the following opinions?

27. "Building a shelter is like building a hole -- only a coward would do it."

Agree _____

Disagree _____

28. "It is a person's duty to try to live as long as he or she can."

Agree _____

Disagree _____

29. "I wouldn't want to live through an attack if I knew most of my friends and neighbors were dead."

Agree _____

Disagree _____

30. "If an attack comes, a person will have to protect his shelter from neighbors who will try to break in."

Agree _____

Disagree _____

31. "Living in a shelter for a long time would drive many people insane."

Agree _____

Disagree _____

32. "Shelters cost more than most families can afford."

Agree _____

Disagree _____

33. "An attack would destroy the morale of the U.S. to such an extent that it would be impossible to rebuild the country."

Agree _____

Disagree _____

34. "Building a family shelter is wrong."

Agree _____

Disagree _____

Explain why you agree or disagree _____

35. "If a person builds a family shelter, his neighbors and friends will most likely scoff at him."

Agree _____

Disagree _____

36. "After an attack, life would be such a savage, man-to-man struggle that it wouldn't be worth living through."

Agree _____

Disagree _____

IV. Please answer the following.

37. Do you have a shelter now?

Yes _____

No _____

38. Do you have plans for building a shelter?

Yes _____

No _____

39. Would you like to build a shelter?

Yes _____

No _____

If yes, why? _____

If no, why? _____

40. How long would it be necessary for you to stay in a fallout shelter?

41. What are the symptoms of radiation exposure?

42. Describe fallout.

43. How will you know when it is safe to leave the shelter?

Please list the items you have brought with you, for example, cosmetics, cigarettes, books, etc.

Name: _____

Date: _____

Please list the items you brought with you and used; for example, cosmetics, cigarettes, books, etc.

Name: _____

Date: _____

ENVIRONMENTAL ADAPTABILITY TESTS, PARTICIPATION IN,
MINORS, PARENTS AND/OR LEGAL GUARDIANS AGREEMENT THERETO.

KNOW ALL MEN BY THESE PRESENTS, that I _____,
a minor, residing at _____ Township, Centre
County, State of Pennsylvania, with my parents and/or legal guardians, in
consideration of the sum of fifty dollars (\$50.00), payable in two increments;
the first of ten dollars (\$10.00) due me upon my entering the test chamber, the
second increment of forty dollars (\$40.00) payable upon my satisfactory com-
pletion of all test requirements, voluntarily and with full consent and express
approval of my parents and/or legal guardians, agree to participate in, and
subject myself to, test conditions encountered in simulated shelter exercises
being conducted by HRB-Singer, Inc., for the United States Government, for
the purpose of measuring human reactions and adaptability to environmental
conditions encountered in close-quarter confinement in underground test
chambers.

I. Both myself, my parents and/or legal guardians fully understand and
agree that, while these tests are being conducted, I will be confined within a
basement test structure, together with other individuals of varying age groups
and both sexes, for a period not to exceed seventy (70) continuous hours, and at
any time during this period, I may be subjected to observation, oral and/or
written inquiries designed to measure my individual reaction resulting from my
personal exposure to these test confinement conditions.

II. Both myself, my parents and/or legal guardians fully understand and
agree that as one of the conditions of my participation in these tests, I will be
expected to accept and subsist on only the nourishment and liquids supplied to
me during the entire period of this confinement by the sponsors of these tests.

III. It is fully understood and agreed to by both myself, my parents and/or
legal guardians, together with HRB-Singer, Inc., that I may at any time elect
to emerge from the test structure, thereby voluntarily withdrawing from further
participation in the performance of these tests. It is fully understood and agreed
to by both myself, my parents and/or legal guardians, that by such voluntary
withdrawal I will automatically forfeit payment of the second and final increment
of forty dollars (\$40.00), which I would normally be entitled to upon completion
of all of the required phases of these simulated tests.

IV. It is fully understood and agreed to by both myself, my parents and/or my legal guardians, that I will voluntarily submit myself to a minor physical examination, to determine my admissibility for participation in these tests, prior to my entrance, and after my emergence from, the test chamber, which will be conducted by a fully accredited medical physician selected by HRB-Singer, Inc. The results of these physical tests will not be made known to any individual participant in the group exercises, but will be furnished upon written request by the individual, directly to any medical doctor nominated by him.

V. It is understood and fully agreed to by both myself, my parents and/or legal guardians, that any information and/or all types of test data collected by HRB-Singer, Inc., in connection with these tests, may be published in coded test reports or similar type of scientific test media which will not reveal participants' identities, without requiring express approval, at any time, from myself, my parents and/or legal guardians.

In exchange for my receipt of an increment of the agreed consideration, both myself, my parents and/or legal guardians, do hereby release, and forever discharge, HRB-Singer, Inc., the United States Government, and any and all individuals, participating directly or indirectly, with these tests from any and all liabilities, claims, damages, injuries, expenses, actions or causes of action, past, present, or future, arising out of, or connected directly or indirectly with, the performance of these tests.

IN WITNESS THEREOF, I have hereunto set my hand and seal this _____ & _____ day of _____ 1967.

WITNESSES:

_____ (Seal)

(Parent, Legal Guardian)

(Parent, Legal Guardian)

Name _____

First

Middle

Last

Address _____

Street

Phone No. _____

Motor Vehicle Information:

Make

Model

Color

(if vehicle is parked
at HRB-Singer, please
complete this section)

License No. & State

In case of an emergency, please call:

Name

Phone No.

EMERGENCY ALERT TELEPHONE MESSAGE

May I please speak with _____.

This is _____ calling from HRB-Singer with the last minute instructions for the Environmental Study you are participating in this weekend. It is our hope that you will listen to the following instructions and announcement with serious attention and follow the directions from now on as though this were a true situation.

ATTENTION! ATTENTION!

Word has just been received from the North American Air Defense Command that a large number of unidentified planes are converging on the United States. An all-out-alert has been declared.

Now The North American Air Defense Command has just issued an attack warning. We may be subjected to a missile attack within the next half hour. A state of emergency has been declared.

Do not attempt to leave the city or stay at home. I repeat, do not attempt to stay home or leave the city.

GO TO THE HRB-SINGER SHELTER IMMEDIATELY!

GO TO THE HRB-SINGER SHELTER IMMEDIATELY!

Take with you only those things which you can quickly gather and feel you will need during a stay in a fallout shelter. You are expected to arrive at the fallout shelter within the next half hour and please continue to act as though the danger were real.

Be at the HRB-Singer Shelter by 6:30. We repeat -- act as if there may be a missile attack within the next half hour and that a state of emergency has been declared.

IN-SHELTER ANNOUNCEMENT SCHEDULE

72-Hour Shelter Stay

(Radio) Announcement No. 1. -- Immediately Following Shelter Entry
(THURS 1830)

ATTENTION!

We have just received word that the United States has been attacked. Missiles have destroyed many military installations. Reports are fragmentary and unconfirmed. I repeat, we are under attack from the enemy.

STAY IN SHELTER

(Phone) Announcement No. 2. -- (THURS 1845)

HRB Shelter, this is shelter control establishing telephone communication:
Are your people in shelter? Has shelter been secured?

(Phone) Announcement No. 3. -- (THURS 1900)

HRB Shelter, this is shelter control:
Many people are separated from their families.
We need names and ages of all in the shelter.

(Phone) Announcement No. 4. -- (FRI 1000 & 1600) and (SAT 1000 & 1600)

HRB Shelter, this is shelter control:
We are attempting to evaluate the number of injured persons and the extent of the damage in the area. Your cooperation is needed in this effort. Every shelter is asked to gather the following information and report promptly to its local control center:

1. How many persons are in your shelter?
2. Are there any illnesses -- diabetes, flu, migraine headaches, etc. ?
3. What is the condition of your equipment? Has any supplementary equipment been brought in?
4. Do you have adequate ventilation? Temperature?

5. What is the state of your food supplies? Have any supplements been brought in?
6. What is the state of your water supply?
7. Have you checked shelter areas for lethal weapons? This information should be forwarded to us as quickly as possible.

(Radio) Announcement No. 5. -- (FRI 2030)

ATTENTION!

Some people have left shelter and are sick from radiation. If these people try to gain entrance to your shelter, follow these procedures:

1. Decontaminate them.
2. Check for radiation symptoms, which are nausea, vomiting, inflammation of the mouth and throat, and fever.
3. Remember, Radiation sickness is not contagious.

(Radio) Announcement No. 6. -- (SUN 1200)

ATTENTION!

Radiation levels in the city have decayed to moderate levels. However, it is still dangerous to those outside shelters. No additional fallout is expected in the area.

I REPEAT -- do not leave shelter!

(Phone) Announcement No. 7. -- (SUN 1300)

HRB Shelter, this is shelter control:

For records being maintained at control center, it will be necessary for you to submit a complete inventory of all items of supplies and equipment still on hand in your shelter. This inventory should include rations, water, medical supplies, radiological equipment, and, in general, any usable items which will be left in the shelter at the end of the shelter stay.

(Phone) Announcement No. 8. -- (SUN 1330)

HRB Shelter, this is shelter control.

1. Names and home addresses of all shelterees.
2. Names of any shelterees who suffered any ill effects during the shelter stay. Include the nature of the illness and any corrective action taken.
3. Any conflicts which arose during the shelter stay and corrective action taken.
4. Any shelteree who possessed lethal weapons at time of shelter entry.

(Radio) Announcement No. 9. -- (SUN 1400)

Shelter Alpha, this is shelter control:

The time is now D + 3 days. The outside radiation level has decreased to tolerable amounts. We calculate that your shelterees may now leave the HRB Shelter.

SIGNIFICANT INCIDENTS

Time: _____

Before filling out this form, press tape recorder button to record and give time, date, your name, and identification number of shelterees.

Observer: _____

Date: _____

Problem (please check):

Physical (i.e. too hot) _____; Psychological (too noisy)

Both _____.

State the problem (briefly):

cause.

describe briefly and give ident. numbers of people who show.

helping behavior + :

hindering behavior - :

neutral behavior 0 :

Solution (please check).

Ineffective _____ Reasonably Effective ____ Highly Effective _____

State the solution (briefly)

Give ident. numbers of people who show:

helping behavior + :

hindering behavior - :

neutral behavior 0 :

Who helped most? _____

Other comments:

What 3 things did you like the best?

a.

b.

c.

4. If it hadn't been for . . . (their reason for leaving) how long could you have stayed?

5. What part did the fifty dollar honorarium play in your decision to help with the study?

6. If an actual emergency were to occur,
 - a. What would you do first?

 - b. Where would you take shelter?

 - c. Likely, where would your family members take shelter?

 - d. What (quickly gotten) supplies would you take with you?

7. If you were to come for another 3-day shelter stay, what things would you bring with you (must be carried easily on your person)?

8. What recommendations do you have for the caring of:
- a. young, school-age children (under 12 years of age)?
 - b. teenagers (ages 12-20)?
 - c. young adults (ages 20-30)?
 - d. adults (over 30)?
 - e. the aged?
 - f. the seriously ill?
 - g. those unable to adjust?
9. The government has stocked many places with basic supplies, namely, crackers, water, sanitary kits, medical kits, and radiological monitoring instruments. Is there anything else you think they should stock that you would consider:
- a. very necessary:
 - b. helpful, but not necessary:

SEMI-STRUCTURED DEBRIEFING INTERVIEW

- (1.) Ask for their general comments. (After they're offered, be sure you've gotten their problems, information, and opinion on supplies, medicine, leadership, etc.)
- (2.) Inquire about the individual or individuals that left early. What were their thoughts and reactions?
- (3.) Ask if they, at any time, felt like leaving. If so, why? If not, why not?
- (4.) Thank them for participating. Assure them that we will answer any questions we can. Ask them to please call us if they have any additional comments or incidents, insights, etc., that they think of later.

FINAL STATEMENT

- (1.) This was an experiment.
- (2.) Purpose -- to learn more about human behavior under austere conditions.
- (3.) The supplies in the shelter are exactly what the government has put in -- no more, no less -- but
- (4.) Individual shelters in many cases are supplementing the stocks.
- (5.) They were not in an HRB-Singer shelter, but one especially set up for the research.
- (6.) Please telephone Dr. Wright or Mrs. Fenstermacher if you have any questionnaires or anything more to report.

Thank You

February 20, 1967

Dear

Please accept our sincere appreciation for the tremendous help you gave us with our study on the effects of confinement. We were very pleased that you were able and willing to be part of the study group.

Some members have telephoned to tell us about things that occurred and happened to them when they got home and thereafter. We are most interested in these comments. For this reason we would like to give you the opportunity to tell us about anything that might have happened to you while you were in the shelter or anytime afterward. A follow-up questionnaire and stamped envelope are enclosed for your convenience.

If there are any questions please do not hesitate to call Dr. Grace Wright or myself at 238-4311, Extension 604.

We thank you for your continued cooperation and assistance.

Sincerely,

lmw

Follow-Up Questionnaire

I. Did the outside world seem different to you after the shelter stay? If so, please describe the ways in which it was different.

II. After you returned home, did you notice any difference in your relationships with your family or with friends and acquaintances? If so, please describe the difference.

III. After returning home, did any members of the family who had been in the shelter behave differently than they usually do? If so, please describe the differences.

IV. If another study were done, would you rather spend fourteen consecutive days in a shelter situation or spend seven days in the shelter, return home for seven days and then spend seven more days in the shelter? Please explain the reasons for your choice.

V. Did any change in weight take place while you were in the shelter? If so, what?

What were your eating habits while in the shelter?

VI. Other comments:

Name _____

Date _____

APPENDIX C

Description of Sample and Area

Information Letters and Forms Used With the Sample

Description of Sample and Area: Sex, Age, Marital and
Family Status, Occupation and Education

The subjects for Groups IV (22 females, 29 males) and Group V (20 females, 31 males) were randomly selected from the College and Harris Township occupational tax listing. Every tenth individual (and his family) listed on the tax roles was invited to participate in the study. (Every resident is listed, though not every resident pays taxes.)

College Township with a population of 3,957 and Harris Township with a population of 2,070 are both located in Centre County, Pennsylvania. Each consist of several small towns in addition to new housing developments, apartment buildings, and trailer parks. The townships share equally in light industry and are very similar in age composition and educational opportunity.

Classification	Group IV	Group V
Subjects aged 1 - 12	24	24
13 - 20	4	6
21 - 40	15	13
40 - 60	<u>8</u>	<u>8</u>
	51	51

In Group IV there were 23 married adults (including 6 married couples) and in Group V there were 21 married adults (including 9 married couples). Group IV was comprised of 6 complete families, 8 incomplete families, and 3 adults alone; while Group V had 9 complete families, no incomplete families, and 4 adults alone.

Note: 603 original names were drawn from the occupational tax listings. Due to initial refusals, or subsequent dropouts due to schedule conflicts, etc., the resultant sample was 102.

Occupational index is another useful, descriptive variable of a sample population. The following occupational index is derived from the township tax assessor's classifications:

- 200+ = executive position; for example, president or vice president of a company
- 100-200 = levels of university professors
- 80 = engineers; mathematicians
- 70 = administrators; skilled workers
- 60 = teachers and technicians
- 50 = secretaries; barbers
- 40 = laborers; waitress; nurse
- 20 = part-time workers
- 10 = housewife; retired individuals; students

Using father's (or family head) occupational classification as the index of socio-economic status, the sample includes:

Classification	Group IV	Group V
<u>100-200</u>	9	12
80	14	23
60	9	5
50	13	9
40	5	2
10	<u>1</u>	<u>0</u>
	51	51

The educational status of both groups ranged from students attending grade school to college graduates.

Classification	Group IV	Group V
Pre-school	13	8
Attended or attending grade school	11	16
Attended or attending high school	5	7
Graduate of high school	5	4
Attended or attending college	3	3
Graduate of college	<u>14</u>	<u>13</u>
	51	51

Dear

HRB-Singer, Inc., is conducting a research study to learn more about how groups of people get along without some of the conveniences they have in their everyday lives. An example of this was the blackout on the East Coast last year. Without electricity, many conveniences (electrical appliances, lights, etc.) were not available.

In order to draw accurate conclusions and to enhance generalizations, it is necessary for us to have a representative sample for our study. As a result, you have been chosen to be a member of this group which was carefully selected from the occupational register located at the Centre County Courthouse in Bellefonte. We hope you will make every effort to participate. You and each other member of your family taking part in the study will receive payment up to fifty dollars depending on the length of time you participate in the study. To insure that the study will run as smoothly as possible, all those taking part in it must be in good health and not presently under a doctor's care.

The study will take place at HRB-Singer, Inc., on one of two weekends, January 26-29 or February 2-5, starting on a Thursday evening at 6:30. It will last 70 continuous hours or less; that is, your presence is requested continuously from Thursday evening until late afternoon on the following Sunday. The selected group will live in a room especially designed to be safe but without many everyday conveniences. As you might well expect, we cannot explain the study to you in detail at this time; however, this information will be available to you later at the conclusion of the study. Also, we ask you to please not discuss the project with your friends and neighbors, whether or not they have received invitations to participate. This will enable each person to approach the situation properly and to give greater value to the study.

During the three days, the individuals taking part will receive instructions of various kinds, as well as contribute by means of simple questionnaires, opinion polls, recordings, games, etc. Food, water, and toilet facilities will be furnished. Comfortable casual clothing is to be worn.

If you are interested in participating in this study, we will ask that you meet with us by appointment during the beginning of January here at the HRB-Singer facilities so that we may obtain some preliminary information from your family and you. We are interested in you -- your occupation, age, opinions, and feelings about various topics.

We hope you will be willing and able to volunteer to help us. If you can, please let us know as soon as possible, preferably within ten days. More than the required number of people have been invited so those who answer first will receive first consideration. Keep this letter, but return the information blank in the postage-free envelope provided. If you are able to take part in the study, we will contact you by telephone after hearing from you. If you have any questions, please call me at 238-4311, extension 282.

We are grateful to you for your cooperation.

Very truly yours,

Enclosures

Information Blank for Environmental Study

Please check:

- Yes, I would like to help with the study.
- No, I cannot help.
- Yes, I am available for the period, Thursday, January 26-Sunday, January 29.
- No, I am not available for the period, Thursday, January 26-Sunday, January 29.
- Yes, I am available for the period, Thursday, February 2-Sunday, February 5.
- No, I am not available for the period, Thursday, February 2-Sunday, February 5.
- Either period will suit me.

Please write in the spaces below the names of the persons in your family who can take part in the study.

_____ yrs. old
_____ yrs. old
_____ yrs. old
_____ yrs. old
_____ yrs. old
_____ yrs. old

Name _____

Address _____

Phone _____

Signature _____

INFORMATION FOR PARTICIPANTS

TIME:

Thursday, _____, at 6:30 p. m. sharp
until late Sunday afternoon, _____.

PLACE:

HRB-Singer. Building 5 (across the road from the main
administration building).

PARKING:

If you wish, you may leave your car in the parking lot
behind Building 5. Park in the center of the lot as close
to the building as possible. Your car should be locked.

SUPPLIES:

Please bring two blankets for each member of your party.
All other supplies are being provided.

CERTIFICATES:

Certificates stating participation in the study will be avail-
able at the end of the study. You may get one as you leave.
The certificate will state that you took part in a research
study carried out by HRB-Singer, Inc., and will state the
time during which the study took place. School children
may wish to take this to school. While not qualifying as
a legal excuse, participation in our study will be a valu-
able educational experience, and as such, has been
acceptable to schools. Other than this, HRB-Singer, Inc.,
cannot assume responsibility for missed classes.

HONORARIUM:

You (and each member of your family participating) will
receive an honorarium of fifty dollars (\$50.00) for com-
pleting the study. Because you are not an employce,
there will be no deductions.

MEDICAL:

Ask your family doctor to fill in the medical form you
have been given. He should fill one out for each member
of your family and mail to us in the postage-free envelope
which you have been given. We should have these by mid-
January.

Most of the doctors are aware of our procedure. If the
doctor has questions, ask him to call Dr. Wright at
238-4311, Ext. 420.

Dr. John Light will be on call for our study should a
medical doctor be desired.

LEGAL:

The legal form can be signed at the time of the interview or can be taken home and returned by mail in the postage-free envelope provided.

The legal form is a common one, and used in research studies where people are involved. Its main purpose is to provide in writing the fact that the individual is participating of his own free will.

The individual signs his name on the line next to the word (Seal). He should sign this while observed by another adult who then signs on the line next to the word (Witness).

REMINDER NOTICE:

A reminder notice will be sent you just prior to the study. In addition we will telephone you between 5:45 and 6:00 to give you additional directions. See that your telephone is free at that time to receive our call.

QUESTIONS:

Please do not hesitate to telephone 238-4311 and ask for me on Ext. 446 if you have any questions.

We are pleased you can help with this study.

Semi-Structured Initial Interview

1. Introduce yourself.
2. Learn the face for each name (you should know name from information blank).
3. Tell them: "There are three things we want to do today: (a) check your information blank; (b) go over information leaflet and (c) give you one of the opinion blanks."
4. Take out information blank and verify information. See that there is a telephone number.
5. Give them an Information Leaflet. Go over the information with them.
6. Tell them: "In this study we are going to ask your opinions about a lot of things. We'd like to start with one today. It will take about a half hour. If there are children who cannot read, I will write their comments today. But in the shelter this will be your responsibility. To get paid all have to turn in materials. In the case of very young children, we are going to ask the mother to make certain observations and report these. Are there any questions?"
7. Give EPPS to age 15 and above. Give C's to ---> 15. There are several forms based on age. (give orally to those who cannot read)
8. Thank them. Tell them we'll look forward to getting their (a) medical form from their doctor (or they can mail it after he signs it): (b) signed legal forms.

Then (a) call me at any time if there are questions: (b) we'll be in touch with them mid-January.

DOCTOR'S NOTES

NAME: _____ AGE: _____

FAMILY DOCTOR: _____ LAST SEEN: _____

- | | | |
|--|-----|----|
| 1. Blackouts. Do you now or have you in the past suffered from blackouts or fainting spells? | Yes | No |
| 2. Diabetes. Do you have diabetes? | Yes | No |
| 3. Epilepsy. Do you have epilepsy? | Yes | No |
| 4. Hypertension. Do you suffer from hypertension? | Yes | No |
| 5. Have you ever been hospitalized? If so, why? | Yes | No |
| 6. Are you taking medicine? If so, why and, if you know, what kind? | Yes | No |
| 7. Have you had an infection recently? If so, what was it? | Yes | No |
| 8. Date of last X-ray _____ | | |
| 9. Any known allergies? If so what are they? | Yes | No |
| 10. Any known exposure to, or family history of T. B. ? | Yes | No |
| 11. Any family history or personal history of emotional or nervous behavior? | Yes | No |
| 12. Have you had or do you expect to have, or been advised to have any surgical operations? If so, what? | Yes | No |
| 13. Do you have any skin rashes? | Yes | No |
| 14. Do you have any gall bladder or ulcer history? | Yes | No |

----- do not write below this line -----

WEIGHT: _____

* The above was filled out by the subject's family physician in conjunction with one subject himself.

TESTS: OUTSIDE SHELTER

EPPS

CALIFORNIA PERSONALITY TEST

MEDICAL FORM

LEGAL FORM

ITEMS BROUGHT TO SHELTER

EXPECTED DISCOMFORT FACTORS

KNOWLEDGE OF OCD

ACTUAL DISCOMFORT FACTORS

ACQUIRED KNOWLEDGE OF OCD

TESTS: INSIDE SHELTER

HRB-SINGER TEST ON THURSDAY EVENING

SELF-DESCRIPTION I ON FRIDAY MORNING

SELF-DESCRIPTION II ON FRIDAY MORNING

SELF-DESCRIPTION I ON SUNDAY MORNING

SELF-DESCRIPTION II ON SUNDAY MORNING

HRB-SINGER TEST ON SUNDAY NOON

MEDICAL RELEASE

TO: HRB-Singer, Inc.

I hereby certify that _____ (name) _____ in my medical opinion is physically able to participate in close quarter confinement test for a period not to exceed seventy-two hours.

Date _____ _____ M. D.

ADULT AGREEMENT THERETO

KNOW ALL MEN BY THESE PRESENTS, that I _____,
being at least twenty-one years of age, residing at _____,
_____ Township, Centre County, State of Pennsylvania, in con-
sideration of the sum of fifty dollars (\$ 50.00), payable in two increments;
the first of ten dollars (\$10.00) due me upon my entering the test chamber, the
second increment of forty dollars (\$ 40.00) payable upon my satisfactory com-
pletion of all test requirements, voluntarily agree to participate in, and subject
myself to, test conditions encountered in simulated shelter exercises being con-
ducted by HRB-Singer, Inc., for the United States Government, for the purpose
of measuring human reactions and adaptability to environmental conditions en-
countered in close-quarter confinement in underground test chambers.

I. It is fully understood and agreed to by me that while these tests are
being conducted, I will be confined within a basement test structure, together
with other individuals of varying age groups and both sexes, for a period not-
to-exceed seventy (70) continuous hours, and at any time during this period,
I may be subjected to observation, oral and/or written inquiries designed to
measure my individual reaction resulting from my personal exposure to these
test confinement conditions.

II. It is fully understood and agreed to, by me, that as one of the conditions
of my participation in these tests, I will be expected to accept and subsist on
only the nourishment and liquids supplied to me during the entire period of this
confinement by the sponsors of these tests.

III. It is fully understood and agreed to, by me, together with HRB-Singer,
Inc., that I may at any time, elect to emerge from the test structure, thereby
voluntarily withdrawing from further participation in the performance of these
tests.

IV. It is fully understood and agreed to, by me, that by such voluntary with-
drawal, I will automatically forfeit payment of the second and final increment of
forty dollars (\$ 40.00), which I would normally be entitled to upon completion of
all of the required phases of these simulated tests.

ADULT AGREEMENT THERETO

KNOW ALL MEN BY THESE PRESENTS, that I _____,
being at least twenty-one years of age, residing at _____,
_____ Township, Centre County, State of Pennsylvania, in con-
sideration of the sum of fifty dollars (\$50.00) payable in two increments of ten
dollars (\$10.00) and forty dollars (\$40.00); the first increment of ten dollars
(\$10.00) will be due me upon my entrance into the test chamber, with the second
increment of forty dollars (\$40.00) payable upon my satisfactory completion of
all test requirements, voluntarily agree to participate in, and subject myself to,
test conditions encountered in simulated shelter exercises being conducted by
HRB-Singer, Inc., for the United States Government, for the purpose of meas-
uring human reactions and adaptability to environmental conditions encountered
in close-quarter confinement in underground test chambers.

I. It is fully understood and agreed to by me that while these tests are
being conducted, I will be confined within a basement test structure, together
with other individuals of varying age groups and both sexes, for a period not-
to-exceed seventy (70) continuous hours, and at any time during this period,
I may be subjected to observation, oral and/or written inquiries designed to
measure my individual reaction resulting from my personal exposure to these
test confinement conditions.

II. It is fully understood and agreed to, by me, that as one of the conditions
of my participation in these tests, I will be expected to accept and subsist on
only the nourishment and liquids supplied to me during the entire period of this
confinement by the sponsors of these tests.

III. It is fully understood and agreed to by me, together with HRB-Singer,
Inc., that I may at any time, elect to emerge from the test structure, thereby
voluntarily withdrawing from further participation in the performance of these
tests.

IV. It is fully understood and agreed to, by me, that by such voluntary with-
drawal, I will automatically forfeit payment of the second and final increment of
forty dollars (\$40.00), which I would normally be entitled to upon completion of
all of the required phases of these simulated tests.

V. It is fully understood and agreed to, by me, that I will voluntarily submit myself to a minor physical examination, to determine my admissibility for participation in these tests, prior to my entrance and after my emergence from the test chamber, which examination will be conducted by a fully-accredited medical physician selected by HRB-Singer, Inc.

VI. It is fully understood and agreed to, by me, that the results of these physical tests will not be made known to me, but will be furnished upon my written request directly to any medical doctor nominated by me.

VII. It is fully understood and agreed to, by me, that any information and/or all types of test data collected by HRB-Singer, Inc., in connection with these tests, may be published in coded test reports or similar type of scientific test media, which will not reveal participants' identities, without requiring express approval, at any time, from me.

VIII. In exchange for my receipt of an increment of the agreed consideration, I do hereby release and forever discharge HRB-Singer, Inc., the United States Government, and any and all individuals participating directly or indirectly with these test from any and all liability, claims, damages, injuries, expenses, actions or causes of action, past, present or future, arising out of or connected directly or indirectly with the performance of these tests.

IN WITNESS WHEREOF, I have hereunto set my hand and seal, this _____ & _____ day of _____ 1967.

_____(Seal)

_____(Witness)

HRB-SINGER, INC.
SCIENCE PARK • STATE COLLEGE, PENNSYLVANIA
A SUBSIDIARY OF THE SINGER COMPANY

Certificate of Completion

Be it known

has completed a
Shelter Stay Consisting of Seventy Hours
Inshelter, () , at Science
Park, State College, Pennsylvania.
Awarded this day of January 1967.

PROJECT MONITORS - DR. G. H. WRIGHT & N. H. FENSTERMACHER

PRESIDENT - DR. GLENN L. MUSSER

SINGER
INFORMATION SCIENCES

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