THE EFFECT OF A NINETY-FIVE DAY WILDERNESS CAMPING PROGRAM UPON PERSONALITY

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PREFACE

This study was concerned with the effect an extended wilderness camping program had upon personality. The primary objective was to determine if changes occurred in various personality characteristics and in what direction they occurred. Specific emphasis was to determine if such a program was effective in encouraging those personality characteristics which were effective in helping cope with stress of normal life events.

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CHAPTER I

THE RESEARCH PROBLEM

Introduction

The purpose of this study was to investigate the effect of an extensive wilderness expedition upon personality. Attention was given to the significance that personality characteristics of control, work orientation (achievement)and interpersonal orientation (affiliation) play in one's ability to cope effectively with stress.

This chapter deals with background information concerning stress and personality. Literature pertaining to the possibility of personality change is presented as well as specific studies of extended camping experiences in which personality characteristics were examined. Studies cited were of "normal" populations. Statement of the problem and ramifications thereof are also included.

Stress and Personality (An Overview)

The effect of stress upon physiological function was first investigated by Selye.[1] Through injection of a sex hormone extract into laboratory rats, specific cellular changes occurred in different organs of the animals. These changes were evidenced through enlargement of the adrenal cortex, shrinking of the thymus, spleen and lymphatic structures

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[1]Hans Selye, The Stress of Life (New York, 1956), pp. 1-67.

and the appearance of ulcers in the stomach and duodenum. Upon further investigation Selye discovered that the injection of other extracts unrelated to sex hormones caused these same cellular changes. In fact, exposure of these laboratory animals to environmental conditions of heat and cold produced the same cellular effects. Selye called the phenomenon which he observed stress. He defined stress as "the state manifested by a specific syndrome which consists of all the nonspecifically induced changes within the biologic system."[2] This is to say that a specific syndrome occurs within the organism through the induction of a variety of stressors.

Observed also were attempts made by the organism to adapt to the stress. Selye described this effort to adapt as the general adaptation syndrome (G.A.S.). The three stages of the G.A.S. are (1) alarm reaction, (2) stage of resistance and (3) stage of exhaustion. The alarm reaction stage is defined as a general call to arms in which the organism immediately defends itself. During the stage of resistance the organism accumulates an abundance of reserve forces which restore the initial drain occurring in the reaction stage and causes functioning to return to normal. The continued presence of the stress element eventually leads to exhaustion. This is identified as the third stage. In this stage the organism depletes its defensive forces and collapses.

It was not with little effort that Selye's principle of biologic stress was accepted by the medical profession. Likewise, the stress phenomena opened doors of interest in the areas of psychology and personality.

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[2]Ibid., p. 54.

Challenging Selye's "nonspecific" definition of stress, Mason claims that what has been termed nonspecific may (in many cases) be specific.[3] Mason and his colleagues believed that this specific stimulus was a psychological one. In his study on fasting in eight monkeys, Mason used the hormone elevation of the pituitary-adrenal cortex system as the stress indicator. The fasting animals displayed obvious stress when in the presence of other animals being fed. However, when placed in private quarters the predicted stress response did not occur. Mason concluded that the specific stressor in this case was psychological. Mason also studied men exposed to uncomfortable heat levels. He found no elevation of hormones in them when they were protected from psychological stimuli.

The psychological aspect was not ignored as a possible stress inducer. Selye[4] supported the possibility that somatic change (such as ulcers, rise in blood pressure) may result from psychic attitudes. Not only did Selye make note of this fact, but many others did as well.

Science News, for instance, stated that learning to control psychological stress may result in the possibility of controlling disease.[5] Such psychological factors as worry and anxiety appeared to cause lesions of the stomach. The article stressed the need to learn to cope with social conditions such as unemployment, loss of spouse, personal relationships and isolation. There was a definite link between psychological problems and disease.

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[3]Robert J. Trotter, "Stress: Confusion and Controversy," Scientific News, Vol. 107 (May 31, 1975), pp. 356-357.

[4]Hans Selye, The Stress of Life (New York, 1956), pp. 262-263.

[5]"Social Stress and the Immune System," Science News, Vol. 107 (February 1, 1975), pp. 68-69.

Likewise, Weiss[6] makes a strong case for physical disorder such as stomach ulcers in rats to be attributed to psychological stress. He believes that what is true for rats (in this case) is true for humans.

Lazarus, Deese and Osler[7] stated that the problem between psychological stress and physiological stress is that in the former there is no common adaptation-syndrome. Individuals appear to respond to stress differently, depending upon various degrees of motivation, emotion and learning. They defined psychological stress as occurring when a particular situation threatens the attainment of goals. Stress is induced when one faces either a failure situation (unsolvable task) or working task conditions (tasks requiring adaptation). The degree of stress to the individual will vary with his perception of the situation and his ability to cope with it. Failure oriented situations are generally more threatening to self-esteem or to some goal oriented behavior.

These authors categorized the effects of stress upon performance as being centered around motivation. The effects of stress can be seen in the energizing, directive and emotional aspects of motivation. The energizing aspect is fear. Fear may or may not be beneficial to performance. Stressful situations which produce a high degree of fear are usually unbeneficial to performance. The directive aspect of motivation means that an individual under stress will direct his efforts toward whatever operations tend to satisfy. Thus, a person in a stress situation may find satisfaction by doing the task at hand. If the stress is

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[6]Jay M. Weiss, "Psychological Factors In Stress and Disease," Scientific American, Vol. 226 (June, 1972), pp. 104-113.

[7]Richard S. Lazarus, James Deese and Sonia F. Osler, "The Effects of Psychological Stress Upon Performance," Psychological Bulletin, Vol. 49, No. 4, Pt. 1 (July, 1952), pp. 293-316.

failure oriented, the ego defense is challenged and a person may give up on the task so that he can say that his failure was due to his not trying. The emotional aspect of motivation upon performance is anxiety reaction. As in the case of fear, anxiety may improve or impair performance. This is dependent, however, upon the perception of the threat situation by the individual.

Lazarus,[8] in a later collection of research on psychological stress, pointed to factors of effectively coping with a stress condition. These factors include a clarity of stimulus cues (a clear picture of the situation), support of external resources (human support and/or support of objects in the environment) and ability to ward off danger (internal resources and ability to use the collection of both external and internal resources effectively in the situation). Factors which lead to an inability to cope with a stressful condition are ambiguity, balance of power in favor of a harm producting stimulus and closeness to a threat (distance in terms of immediacy or future).

Pascal[9] brought out strongly the importance of awareness in psychological stress. In order for a situation to be stressful, the individual must perceive it as threatening. Pascal defined stress as situations which threaten the satisfaction of the individual. His interest was to provide an equation for determining psychological deficit.

Psychological deficit is present when the individual's function in some situation is at a level below other typical individuals or contrary

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[8]Richard S. Lazarus, Psychological Stress and the Coping Process (New York, 1966), pp. 85-119.

[9]Gerald R. Pascal, "Psychological Deficit as a Function of Stress and Constitution," Journal of Personality, Vol. 20 (1951), pp. 175-187.

to his own present or past behavior. Using Maslow's basic needs theory, (physiological, safety, love, esteem, self-actualization) as sets of goals, stress occurs within the individual when these needs are threatened. These needs are on a continuum, and the individual is often called to determine between a threat to a more basic need and a threat to a less basic need. For instance, a soldier going into battle may choose to save his own skin and flee (branding himself a coward in the eyes of his peers) or stay and fight. What poses the greatest threat, the enemy or cowardice, can only be decided by the individual. In speaking of psychosomatic disorders, Pascal reported an increase among individuals who experienced threat to a basic need but who showed no sign of being psychologically deficient.

Cofer and Appley,[10] perusing psychological stress literature, attempted to identify the ramifications of psychological stress and offer a fitting definition. They pointed out aspects of psychological stress as involving four steps. These steps are (1) instigation threshold, (2) frustration threshold, (3) stress threshold and (4) exhaustion threshold. Instigation threshold is reached only after a condition of insufficiency is pushed beyond habitual handling. Here the usual way of handling insufficiency gives way to exploring new methods of coping. Thus, the individual has been goaded to take action beyond habitual means of coping. The individual reaches the frustration threshold when he realizes that the situation perceived is beyond his available coping potential. At this point anxiety related responses enter the picture. The stress threshold is reached when the individual becomes mainly

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[10]C. N. Cofer and M. H. Appley, Motivation: Theory and Research (New York, 1964), pp. 449-465.

ego-protective instead of task-oriented. This step is reached after the stressful condition has persisted for some time without effective change. In the exhaustion threshold step the individual views his situation as hopeless. At this final stage a drop in activity occurs.

In the light of these ramifications, Cofer and Appley defined psychological stress as "the state of an organism where he perceives that his well-being (or integrity) is endangered and that he must devote all of his energies to its protection."[11] Well-being was interpreted as the regular satisfaction of one's motives. Two general observations made by these authors were that (1) any stimulus may at some time and in the appropriate circumstances serve as a psychological stressor, and (2) that no stimulus is a stressor to all individuals exposed to it (except a sudden life threatening condition).

Because individuals are different in beliefs, social and self needs and levels of pain, they respond to stressors in different degrees. In their research in inducing stress through observing a film of a primitive tribal ritual, Lazarus and Alfert[12] were careful to determine the high and low deniers among their subjects. It was revealed that high deniers were less stressful when viewing the film, signifying the individual difference among subjects of the experiment. It was also revealed that low deniers were more stressful when viewing the film. Stress was reduced in the low denial group by interpreting the tribal ritual as a happy rather than painful experience for the participants.

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[11]Ibid., p. 454.

[12]Richard S. Lazarus and Elizabeth Alfert, "Short-Circuiting of Threat By Experimentally Altering Cognitive Appraisal," Journal of Abnormal and Social Psychology, Vol. 69, No. 2 (1964), pp. 195-205.

Hodges and Spielberger[13] took into consideration the fear of electric shock among subjects prior to their participation in an experiment in which electric shock was used in threatening and non-threatening situations. Subjects, who evaluated themselves as having from a moderate to extreme fear of shock, responded with greater heart rate acceleration than did subjects who reported little or no fear of shock. Moeller and Applezwiez[14] distinguished between the social and self approval needs of eighty-eight college freshman females. Then, these subjects participated in a line-matching activity in which they were to match the length of a line on one card with one of three lines on another card. The majority of those participating in this activity were friends of the experimentor who were seeded to give wrong answers. The purpose was to determine if those who need social approval would change their answer to agree with their peers. The result was in agreement with the predicted hypothesis, that students with high motivation for social approval will likely agree with the judgment of their peers. Those with low motivation for social approval will likely agree with the facts.

These studies support the individual difference concept of psychological stress. Individuals with varying levels of fear of shock, denial and social needs respond differently to stressors.

According to Hurlock[15], individuality referred to the uniqueness of

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[13]W. F. Hodges and C. D. Speilberger, "The Effect of Threat of Shock on Heart Rate Subjects who Differ in Manifest Anxiety and Fears of Shock," Psychophysiology, Vol. 2, No. 4 (1966), pp. 207-294.

[14]G. Moeller and M. H. Applezwiez, "A Motivational Factor in Conformity," Journal of Abnormal and Social Psychology, Vol. 55 (1957), pp. 114-120.

[15]Elizabeth B. Hurlock, Personality Development (New York, 1974), p. 8.

personality. The personality is a universal phenomenon with many attributes which one weaves together into a unique system. Allport offered a generally accepted definition of personality: "Personality is the dynamic organization within the individual of those psychophysical systems that determine his unique adjustment to his environment."[16]

The dynamic organization signifies that personality is not just a sum of traits, but rather that the different traits are held together and influenced by a central core called the 'concept of self.' The degree of organization or disorganization of these traits influence the degree of normality. The dynamic reference to this organization is indicative of the evolving and changing nature of the personality. Allport referred to the psychophysical system as composed of habits, attitudes, emotional states and beliefs which are psychological, but have a physical basis in the individual's neural and glandular states. How these habits, beliefs, attitudes and emotional states influence the form they will take in expression is dependent upon the entire weaving together of the personality matrix.

The development of personality generally revolves around the formal theory of development and genetic behavior. The formal developmental theory rests on the assumption that where there is life there is development. The development is the progress from an undifferentiated state to a highly specialized and integrated organization. How this development takes place varies among theorists.

For instance, Freud's theory is that systemic changes in personality structure is due to sexual energy which is present at birth. Oral,

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[16]Henry Clay Smith, Personality Development (New York, 1968), p. 41.

anal and oedipal refer to the three stages of the child's development. Satisfaction is obtained through release of one's psychosexual energies. When this energy is blocked, tension and discomfort arise. Piaget views the development of cognitive structures and processes as underlying behavior. His assumption is that the cognitive structures contain all the energy necessary for personality emergence. His principle of adaptation is one of equalibrium between the person and his environment. This equalibrium is established and re-established between oneself and the external environment through assimilation (manipulation of objects to satisfy personal needs) and accommodation (changes in organism in response to the object).

Inheritance (genetic behavior) of personality characteristics were largely projected by Darwin and Galton.[17] Their idea was that people with various mental abilities could reproduce the same. While this may be the case where some gene pairing produces particular evidences of mentality, it is certainly not the rule. The significance of the biologic factor is summed by Hurlock:

> Neither the personality pattern nor the specific personality traits are directly controlled by the genes. Indirectly, however, the genes influence personality by affecting the quality of the nervous system, the biochemical balance of the body and the structure of the body. The principle raw materials of personality-physique, intelligence and temperament are the foundations of personality which are geneticaly determined through structural inheritance. These raw materials are then patterned into personality characteristics by environmental influences.[18]

The fact that underlying personality characteristics are present

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[17]Richard S. Lazarus, Adjustment and Personality (New York, 1961), pp. 146-149; 212-218.

[18]Elizabeth B. Hurlock, Personality Development (New York, 1974), pp. 77-78.

at birth is supported by a longitudinal study by Thomas, Chess and Birch.[19] This study was made on 137 children over a 14 year period to determine (1) the difference in temperament at birth and (2) the nature of temperamental conditions and how they interact with their environment in formation of personality. The technique used to collect data and explore these questions consisted of obtaining a detailed description of the child's behavior through structural interviews with their parents. Items observed were motor activity, regularity, adaptability to change in environment, sensitivity to stimuli, distractibility, attention span, moods, energy level and response to new objects. The subjects were studied beginning at two or three months and continuing throughout elementary school. Results revealed a distinct individuality of temperament in the first weeks of life which was independent of parental handling or personality style. The 14 year study established that the original temperament characteristics tend to persist over the years. Notice was also made of the need for harmony between the temperament of the child and his environment. An excessive conflict between these two bring unbearable stress upon the child. The study supported the significance of both "nature" and "nurture." The problem of human behavior is to maintain a homeostatic condition. Thus, adjustment is taking place continually.

Wheelis[20] admitted that personality is a functioning entity which is changed only with difficulty. However, he believes that personality

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[19]Alexander Thomas, Stella Chess and Herbert G. Birch, "The Origin of Personality," Scientific American, Vol. 233 (August, 1970), pp. 102-109.

[20]Allen Wheelis, "How People Change," Commentary, Vol. 47 (May, 1969), pp. 56-66.

can be changed. The sequence of change is suffering, insight, will, action and change. Suffering was defined as an inner conflict. Insight comes when one realizes his freedom to choose. This freedom comes only through awareness. Therefore, the way to create a greater degree of freedom in individuals is to extend their awareness. Even though one gains insight does not mean that he will change. The will must permit the insight to become consistent behavior. For various reasons a person may not want to change, even though theoretically he knows it is possible. Such decisions appeared to be related to tolerance level for conflict. Once the will has given permission, action takes place. Wheelis contended that personality change follows change in behavior.

Other studies revealed the possibility of change by environmental manipulation and special groups geared to personality improvement.[21,22,23] Culbert, Clark and Bobele,[24] for instance, investigated the change in self-actualization of 20 seniors (college) and graduate students at UCLA. This group was divided into two groups of 10 students who took part in a sensitivity training laboratory. The results indicated an increase in self-actualization for those participating in the

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[21]Gardner C. Quarton, "Deliberate Efforts to Control Human Behavior and Modify Personality," Daedelus, Vol. 96, Pt. 2 (Summer, 1967), pp. 837-853.

[22]Roger D. Martin and Donald G. Fischer, "Encounter Group Experience and Personality Change," Psychological Reports, Vol. 35 (1974), pp. 91-96.

[23]Edward R. Young and Leonard I. Jacobson, "Effects of Time-Extended Marathon Group Experiences On Personality Characteristics," Journal of Counseling Psychology, Vol. 7, No. 3 (1970), pp. 247-251.

[24]Samuel A. Culbert, James V. Clark and H. Kenneth Bobele, "Measures of Change Toward Self-Actualization In Two Sensitivity Training Groups," Journal of Counseling Psychology, Vol. 15, No. 1 (1968), pp. 53-57.

sensitivity program.

Programs such as the above provided situations which may have an effect on self-esteem, leadership, social interest and the like. Age and health were seen as having an effect on feelings such as depression.

To summarize, stress is evident in the individual, both physiologically and psychologically. The result of stress on the biologic system can be determined by the adaptation syndrome. The result of stress psychologically varies from individual to individual as a result of differences in the way each person perceives a stressor and the threat to basic needs he considers important.

Personality is a dynamic integrated system possessing certain raw foundations at birth which are influenced and nurtured by the environment. The problem of human behavior is to maintain a homeostatic condition. Thus, adjustment is continually taking place.

Personality change is possible in the sequence of suffering, insight, will and action. This involves freedom and awareness as well as the will of the individual to change. Once the will has given consent, change is observed through one's actions. Personality change may take place through environmental manipulation and special group procedures.

Wilderness Camping Programs and Personality Change

Studies of extensive wilderness camping expeditions are limited when considering "normal" populations. The studies are in agreement, however, in that such camping programs influence positive self-esteem.

One such study, conducted by Kaplan[25] with high school students, revealed definite improvement in self-esteem after the conclusion of the camping expedition. Of significance also was the process of self-selection by individuals to participate in the experimental camping group. Pretests showed that those who choose the camping experience were already high in self-esteem before the camping experience.

Clifford and Clifford[26] tested 36 adolescent boys to determine the effect of an Outward Bound (a wilderness program which introduced physical challenge as a means of developing character) excursion on feelings of self-worth and competence. At the end of the one-month expedition, overall changes in self-worth were evidenced. Pretest measurements here also indicated a prior sense of high self-esteem among the participants.

These studies support the idea that personality change in self-esteem is likely to occur through participation in an extended wilderness program even though subjects are usually high in self-worth already.

Statement of Problem

As important as it is to know how to handle the external environment in order to meet stress positively, it is equally important to provide situations whereby internal strength is developed that will enable one to deal positively with stress conditions on his own amid normal life situations.

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[25]Rachel Kaplan, "Some Psychological Benefits of an Outdoor Challenge Program," Environment and Behavior, Vol. 6 (March, 1974), pp. 101-116.

[26]Edward Clifford and Miriam Clifford, "Self-concepts Before and After Survival Training," British Journal of Clinical Psychology, Vol. 6 (1967), pp. 241-248.

Holmes and Rahe[27] developed a scale to determine the degree of stress individuals experience in normal life events. This scale was termed the Social Readjustment Rating Scale and included items confronted by individuals in the process of living (such as job stress and relationships). Kobasa[28] took this scale and administered it to executives to determine the degree of stress they experienced over a three-year period. Of this group, Kobasa pulled out those who experienced high stress. The high stress individuals were divided into those who had received medical attention in that three-year period, and those who had not received such attention. A personality test was given to the high stress group which revealed that those who had received no medical attention were people who had a greater sense of control over situations in life, who were actively involved (committed) in the environment around them and who were challenged by life situations. Kobasa called these personality qualities control, commitment and challenge. She termed them "hardy" personality qualities.

These qualities were identified as control, work orientation (achievement) and interpersonal orientation (affiliation) in the present study . The importance of these personality characteristics in coping effectively with stress was supported by studies conducted in these three areas.

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[27]Thomas H. Holmes and Richard H. Rahe, "The Social Readjustment Rating Scale," Journal of Psychosomatic Research, Vol. 11 (April, 1967), pp. 213-218.

[28]Suzanne Kobasa, "Stressful Life Events, Personality and Health: An Inquiry Into Hardiness," Journal of Personality and Social Psychology, Vol. 37, No. 1 (1979), pp. 1-11.

Control

Averill[29] defined control as the availability of an adequate response. He points to three types of control over aversive stimuli. The first type is behavioral control in which the individual takes direct action on the environment. When the individual can exert control over the nature and timing of a threatening event, he is less stressful than when that control is not present. The second type of control is cognitive control comprised of two facets, information gain and appraisal. Information gain is the amount and type of feedback an individual receives from an impending harmful event. It is relatively objective. Subjects who have information about an impending harmful event are less stressful. In the appraisal aspect of cognitive control, the individual not only receives information about an impending harm but actually imposes meaning upon it. What meaning the individual imposes upon the threat will depend on specific situational cues or one's cognitive style. The third type of control is decisional, wherein the individual has the freedom of choice. When individuals have alternative choices from which to choose in handling harmful events, they are more flexible and consequently experiences less stress.

Averill's projection on control was verified by a study of Sherrod and Downs.[30] Sixty college females were assigned equally to three groups

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[29]James R. Averill, "Personal Control Over Aversive Stimuli and Its Relationship to Stress," Psychological Bulletin, Vol. 80 (1973), pp. 286-303.

[30]Drury R. Sherrod and Robin Downs, "Environmental Determinants of Altruism: The Effects of Stimulus Overload and Perceived Control on Helping," Journal of Experimental Social Psychology, Vol. 10 (1974), pp. 468-479.

in an effort to study the effect of environmental overload on helping. The groups to which these individuals were assigned included group (1) overload, (2) overload with perceived control and (3) no overload. The overload consisted of distracting background noise. Group two could turn the background noise off at any time, but were requested by the experimenter to try to do the assigned task with it on. All groups were assigned proofreading and number attention tasks. At the end of the task, a confederate of the experimenter asked the groups to do a favor for her by working some arithmetic problems. The overload group with perceived control over the background noise worked 50 percent more problems than the overload group. Group two members kept the noise on throughout the task. The authors suggested that the apparent belief that one has control over his environment makes him more resistant to possible negative consequences of environmental stress. The perception of control helps reduce the impact of stressful stimuli on social behavior even though it does not change the stressful stimuli.

Achievement

Atkinson and Feather[31] defined achievement as a disposition to approach success. Consideration of achievement takes into account two basic problems. One problem is to account for the particular direction an individual takes among many alternatives, and secondly, to account for the vigor or magnitude of action once the direction is taken.

To answer these problems, the authors defined three items which appeared to be intricate variables of achievement. These were

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[31]John W. Atkinson and Norman T. Feather, Eds., A Theory of Achievement Motivation (New York, 1966), pp. 11-74.

expectancy, incentive and motive. Expectancy is the cognitive anticipation that the performance of a particular act will be followed by a particular consequence. Incentive represented the relative attractiveness or unattractiveness of a situation which might occur as the consequence of some act. Motive was the disposition to strive for a certain kind of satisfaction. Thus, in the achievement motive the individual expects a certain outcome and then determines the attractiveness or unattractiveness should the expected outcome be realized or not realized. Finally, he strives for the particular satisfaction he desires.

Persistence is continuing to persevere despite opposition. Looking at persistence is one way to study achievement. Atkinson and Feather consider the appropriate type of research for determining the achievement motive is to study persistence as a motivational phenomenon. This approach takes into account both the person and the situation. It allows both to be studied in interaction.

This desire to succeed presents itself in one's ability to stay with a difficult task. Thus, capitulation in the face of a stressful condition is stayed and overcoming victory has better possibility.

Affiliation

Schacter[32] stated that affiliation is the need to evaluate one's self. That is, one needs to affiliate with others to evaluate his own opinions, feelings and thoughts. Specific reasons for getting together are:

Escape: Associating with each other as a way of getting

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[32]Stanley Schachter, The Psychology of Affiliation (Stanford, California, 1959), pp. 1-44.

out of a situation or place.

Cognitive Clarity: Association for the purpose of achieving some degree of clarity or getting a job done.

Direct Anxiety Reduction: Association with others for the purpose of comfort and support, reassurance and bolstering of courage.

Indirect Anxiety Reduction: Association with others through attending a movie, reading a story, watching television.

Self Evaluation: Comparing oneself to others.

Schachter defined affiliation as togetherness. His definition, however, meant a type of togetherness which met the specific needs of individuals.

Reassurance was studied to determine the effect it would have on anxiety reduction. Spector and Sistrunk[33] tested 78 female college students who were made to believe they could expect a painful shock. The subjects were then asked to record their anxiety level by the State-Trait Anxiety Inventory. The subjects were then led into a room where friends of the experimenter (posing as subjects in the study) reassured or did not reassure them concerning the harmlessness of the shock. The experiment was concluded following this brief encounter, and the subjects were given a second State-Trait Anxiety Inventory. The result displayed a noted reduction in anxiety among those subjects who were reassured while the unassured group remained highly anxious. Just being in the presence of people does not alone reduce anxiety.

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[33]Paul E. Spector and Frank Sistrunk, "Reassurance: A Mechanism By Which the Presence of Others Reduces Anxiety," Journal of Social Psychology, Vol. 109 (1979), pp. 119-126.

It was the purpose of this study to investigate the effect an extensive wilderness camping program had on personality. For instance, if "hardiness" in personality as described by Kobasa leads to successful coping, what develops "hardiness." In studying the effect of an extensive wilderness program on personality, particular attention was given to personality qualities of control, work orientation (achievement) and interpersonal orientation (affiliation).

The National Outdoor Leadership School

Wheelis[34] stated that personality change occurs only if a particular action is maintained over a long period of time. Therefore, the first task of this study was to locate a wilderness program which was conducted over an extended period of time.

The National Outdoor Leadership School (NOLS) based in Lander, Wyoming, offered several semester courses in which pupils live in wilderness environments for several months. The length of time plus the intensity of the course in a natural environment was determined to be sufficient to produce personality change.

The National Outdoor Leadership School was contacted by the experimenter who asked permission to use students enrolled in the spring course as subjects for this study. After NOLS reviewed a copy of the proposed study, a contract was entered into between the National Outdoor Leadership School and the experimenter (Appendix).

The National Outdoor Leadership School was organized by Paul

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[34]Allen Wheelis, "How People Change," Commentary, Vol. 47 (May, 1969), pp. 56-66.

Petzoldt[35] in 1965. Petzoldt served as the director of the school from 1965 to 1975. The purpose of this school was to train leaders capable of conducting all around wilderness programs in a safe and rewarding manner.

Petzoldt gave his accumulated knowledge to the NOLS wilderness programs. The knowledge included 50 years in the outdoors, refining and experimenting with various outdoor procedures, dress, equipment and techniques. In the mid-twenties, Petzoldt established the Petzoldt-Exum School of American Mountaineering. The purpose of this school was to train guides who could lead people into the Teton Range. In 1936, Petzoldt was chosen to participate in the first American expedition to K2 in the Himalayas. During WW II, he taught mountain evacuation and cold weather dress to the ski troops of the Tenth Mountain Division at Camp Hale, Colorado. In 1963-64, Petzoldt helped established the first American Outward Bound program in Colorado and became chief instructor. Therefore, the expertise which Petzoldt brought to the National Outdoor Leadership School was varied, vast and tried.

The National Outdoor Leadership School was established as a private, non-profit educational corporation. It operated under state and national statutes as a licensed private school. The school maintained a program international in scope with branch offices in Africa and Mexico as well as several other locations in the United States. A Board of Directors gave direction to the school.[36] Programs were coordinated by a director and 50 senior staff members. Courses over a year's time were conducted

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[35]Paul Petzoldt, The Wilderness Handbook (New York, 1974), pp. 13.

[36]National Outdoor Leadership School Catalogue of Courses 1980-1981 (Lander, Wyoming, 1980), pp. 1-21.

in the field by approximately 200 instructors. All staff members and instructors were specialists in wilderness skills and techniques, having participated in several NOLS outings, plus an Instructor's Course developed by NOLS specifically for instructor training.

The school provided approximately 98 course sections in a total of some 26 courses. These courses included anything from African safaris to flyfishing and horse-packing. Length of the courses were anywhere from 14 to 95 days. The National Outdoor Leadership School operated in all seasons and in every kind of terrain.

Programs developed by NOLS were aimed at a total wilderness experience. The emphasis of these programs pointed toward development of persons skilled in a myriad of outdoor activities as well as conservation techniques, leadership experience and expedition dynamics. Students learned at all four levels of ability.

Individual physical endurance was a natural result of participation in the rigors of the NOLS expeditions but was not the prime purpose of the school nor the courses offered. Participants in the NOLS courses were taught the practical aspects of outdoor living through both instruction and participation. These pedagogical methods were used at the actual site where the lessons were to be taught.

Of particular interest to this study was the effect that the 95-day wilderness expedition had upon the personality change of the participants.

Null Hypotheses

It was hypothesized that one who experiences a 95-day wilderness camping program as provided by NOLS, will develop no significant

personality change in (1) control, (2) work orientation (achievement) and (3) interpersonal orientation (affiliation).

Sub-problems were as follows:

1. There will be no difference in the personality qualities of control, work orientation and interpersonal orientation as related to age of those participating in a 95-day wilderness camping experience.

2. There will be no difference in the personality qualities of control, work orientation and interpersonal orientation as related to sex of those participating in a 95-day wilderness camping experience.

3. There will be no difference in the personality qualities of control, work orientation and interpersonal orientation as related to education of those participating in a 95-day wilderness camping experience.

4. There will be no difference in the quality of risk-taking between subjects participating in a 95-day wilderness camping experience and the normal population as determined by the standardized scale of the Personality Research Form.[37]

5. There will be no difference in the personality qualities between subjects participating in a 95-day wilderness camping experience and the normal population as determined by the standardized scale of the Personality Research Form.[38]

Assumptions

Assumptions of this study were:

1. The personality of the individual can be changed.

2. The population participating in this study is a select group, ranging in age from 18 to 31, who particularly enjoy wilderness expeditions of the magnitude considered in this study.

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[37]Douglas W. Jackson, Personality Research Form Manual (Goshen, New York, 1974), p. 29.

[38]Ibid.

Delimitations

This research was designed to study the effect upon the personality qualities of control, work orientation and interpersonal orientation of subjects after participating in a National Outdoor Leadership School 95-day wilderness camping program. This study dealt with other personality characteristics (abasement, dominance, understanding, sentience, autonomy and succorance) to provide a picture of the relationship of the wilderness experiment group with the norm population. These characteristics were incorporated in the study as they related to sub-problem 5, but were not considered as part of the specific areas of control, work orientation and interpersonal orientation. Results were confined to the particular wilderness camping program provided. Application was not to be made to any and every camping experience.

Definition of Terms

Personality: The dynamic organization within the individual of those psychophysical systems that determine his characteristic behavior and thought.[39]

Control: The availability of an adequate response to normal life situations.[40] This area consisted of the characteristics of impulsivity (degree of deliberation), change (desire for new experiences), harm-avoidance (degree of risk), order (personal neatness and environmental

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[39]Elizabeth B. Hurlock, Personality Development (New York, 1974), pp. 7-8.

[40]James R. Averill, "Personal Control Over Aversive Stimuli and Its Relationship To Stress," Psychological Bulletin, Vol. 80 (1973), pp. 286-303.

organization), cognitive structure (ability to handle ambiguity) and degree of internal control.[41]

Work Orientation: The disposition of the individual to succeed.[42] Included in this area are the personality characteristics of achievement (aspiring to accomplish difficult tasks), endurance (persistence) and play (light-hearted, easy-going attitude and doing things "just for fun").[43]

Interpersonal Orientation: The need for togetherness among individuals.[44] Included in this area are the personality characteristics of affiliation (enjoying being with friends and people in general), exhibition (desire to be the center of attention), nurturance (caring for others), social recognition (desire to be held in high esteem by acquaintances), aggression (quarrelsome, irritable, antagonistic) and defendence (suspects others mean one harm).[45]

Psychological Stress: Events causing change in and demands readjustment of, an average person's normal routine.[46]

Wilderness Camping Program: A 95-day program consisting of a

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[41]Douglas N. Jackson, Personality Research Form Manual (Goshen, New York, 1974), pp. 6-7.

[42]John W. Atkinson and Norman T. Feather, Eds., The Theory of Achievement Motivation (New York, 1966), p. 11.

[43]Douglas N. Jackson, Personality Research Form Manual (Goshen, New York, 1974), pp. 6-7.

[44]Stanley Schachter, The Psychology of Affiliation (Stanford, California, 1959), p. 1.

[45]Douglas N. Jackson, Personality Research Form Manual (Goshen, New York, 1974), pp. 6-7.

[46]Suzanne C. Kobasa, "Stressful Life Events, Personality and Health: An Inquiry Into Hardiness," Journal of Personality and Social Psychology, Vol. 37 (1979), pp. 1-11.

desert section, small group student expedition, rock climbing section, caving section and wintering ski mountaineering section. In each section, conservation practices, outdoor living skills, safety, expedition skills, travel, techniques, natural history and environmental awareness were taught in addition to the specialized nature of the section.

Other Personality Characteristics: Abasement (feelings about self), autonomy (relation to restraints), dominance (degree of control over surroundings and others), sentience (degree senses are in tune with surroundings), succorance (degree of seeking protection and sympathy from others) and understanding (degree of interest in information and knowledge).[47]

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[47]Douglas N. Jackson, Personality Research Form Manual (Goshen, New York, 1974), pp. 6-7.

CHAPTER II

REVIEW OF RELATED LITERATURE

The previous chapter contained an overall preview of the problem under consideration. Limited review of related literature was introduced to give background and direction to the problem.

This chapter extended the review of related literature on the possibility of personality change and the individuality of stress and change. Presented also were additional studies on control, achievement and affiliation as they relate to effectively coping with stress. Material regarding change in personality as related to age, sex and education was reviewed as well.

Personality Change and Individuality in Stress and Change

In addition to the possibility of personality change as related in the previous chapter, Quartion[1] pointed to environmental manipulation as a means of controlling human behavior and modifying personality. Mentioned in this regard was the influence of providing or withholding opportunities and supplying or withholding models.

In an encounter group designed to promote self-concept and

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[1]Gardner C. Quarton, "Deliberate Efforts to Control Human Behavior and Modify Personality," Daedalus, Vol. 96, Pt. 2 (Summer, 1967), pp. 837-853.

sociability, Martin and Fischer[2] found such desired changes as revealed by the Adjective Checklist in a pretest, posttest procedure. Thirty-eight male and female college students with a mean age of 24 were subjects for the study. Changes occurred not only in self-concept and social interaction but also in tact, leadership role, interests in the opposite sex and security.

A 30-year study was conducted on 281 physically and psychologically healthy men by Leon, Gillum, Gillum and Gouze.[3] The study consisted of the administration of the MMPI in 1947, 1953, 1960 and 1977. The mean age of the group tested in 1977 was 77. The results of this study showed remarkable stability of personality functioning over the 30-year period. Two scales of the MMPI showed changes. These dealt with health and depression which were considered normal for this age group.

Young and Jacobson[4] conducted a marathon group experience with six graduate students at the University of Miami. The purpose was to determine any changes in personality as revealed by the Edwards, Marlow-Crowne Social Desirability Scale and the Personal Orientation Inventory. The marathon group participated in a 15-hour session with emphasis upon verbal communication and interaction and non-verbal interaction. Meals were brought to the session, and the group ate together. A pretest and

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[2]Roger D. Martin and Donald G. Fischer, "Encounter Group Experience and Personality Change," Psychological Reports, Vol. 35 (1974), pp. 91-96.

[3]Gloria Rakita Leon, Brenda Gillum, Richard Gillum and Marshall Gouze, "Personality Stability and Change Over a 30-Year Period-Middle Age to Old Age," Journal of Consulting and Clinical Psychology, Vol. 47, No. 3 (1979), pp. 517-524.

[4]Edward R. Young and Leonard I. Jacobson, "Effects of Time-Extended Marathon Group Experiences on Personality Characteristics," Journal of Counseling Psychology, Vol. 7, No. 3 (1970), pp. 247-251.

posttest was administered to both the experimental group and a control group. These tests were administered four days prior to the group session and four days following the session. Both groups were similar in the pretest. On the posttest, however, the experimental group showed significant decrease in defensiveness and constriction and showed change in the direction of more socially positive functioning. The experimental subjects demonstrated changes in personality scores on most scales employed in the direction of greater mental health, and these changes were significant. The control subjects showed a similar tendency, but it was not significant. The rationalization for the positive control group response was due to the special attention they received in being chosen for the study.

Culbert, Clark and Bobele[5] investigated the change in self-actualization of 20 seniors and graduate students at UCLA. This group was divided into two groups of 10 students who took part in a sensitivity training laboratory. The Personal Orientation Inventory (POI) was administered to both groups at the first and last meetings of the session. The sensitivity training course was conducted over a 14-week period. Results revealed that one group was already high in self-actualization and showed no change on the posttest. The other group, however, scored lower than its companion group on the initial test and increased considerably in self-actualization on the posttest. Thus, the sensitivity training treatment in this study appeared to bring an increase in the POI scale means for a group initially resembling

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[5]Samuel A. Culbert, James V. Clark and H. Kenneth Bobele, "Measures of Change Toward Self-Actualization in Two Sensitivity Training Groups," Journal of Counseling Psychology, Vol. 15, No. 1 (1968), pp. 53-57.

an expected degree of normality in self-actualization and did not disturb the scores for a group already high in self-actualization.

Holmes and Rahe[6] sought to determine the amount and duration of change in one's accustomed pattern of life resulting from various life events. They called this change social readjustment and defined it as the intensity and length of time necessary to accommodate to a life event regardless of the desirability of the event. Nearly 400 subjects between 30 and 60 years of age were asked to give a numerical value to 43 normal life events. The greater value depicted the greater difficulty in adjusting. The items rated were such things as change in job, promotion, vacation, death of spouse, fired from job and the like. Holmes and Rahe defined stress as readjustment to life events. Their finding was that change causes stress whether change is desirable or undesirable.

Using Holmes and Rahe's Social Adjustment Rating Scale, Redfield and Stone[7] suggested a more individualized approach in assessing a person's degree of stressfulness to various life events. The study conducted by these authors indicated that people vary in their consideration of the degree of stressfulness which is sometimes contrary to the Social Readjustment Rating Scale. The conclusion of this study pointed to use of the Social Readjustment Rating Scale but allowing each individual to rate the degree of stress they sense in various life events. Such a procedure would be helpful in assessing individual stress to life

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[6]Thomas H. Holmes and Richard H. Rahe, "The Social Readjustment Rating Scale," Journal of Psychosomatic Research, Vol. 11 (April, 1967), pp. 213-218.

[7]Joel Redfield and Arthur Stone, "Individual Viewpoints of Stressful Life Events," Journal of Counseling and Clinical Psychology, Vol. 47, No. 1 (1979), pp. 147-154.

events instead of making the Social Readjustment Rating Scale a blanket for everyone's degree of stress to life events.

Several studies support the concept of individuality to what is stressful. Lauer[8] in testing the rate, of change and stress found that stress was positively related to rate, but that the degree of stress depended upon whether a particular change was desirable. Lauer and Thomas [9] discovered that what is considered stressful varies with societies. In a study of England and American societal pressures, these authors found that the English were more tied up in society as a whole and, therefore, were more likely to be affected by societal changes than Americans. Americans were more affected by what happened to them individually.

Gilbert[10] also showed stress to vary with one's sense of control. He discovered that persons who feel relatively in control of situations they confront were likely to be less stressful than those who sense a lack of control over their environment.

Neufeld and Davidson[11] investigated the effects of stress and stimulus conditions on sex. Measurement was made in three areas. These were behavioral, subjective and physiological. Results indicated that

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[8]Robert H. Lauer, "Rate of Change and Stress: A Test of the 'Future Schock' Thesis," Social Forces, Vol. 52 (June, 1974), pp. 510-515.

[9]Robert H. Lauer and Rance Thomas, "A Comparative Analysis of the Psychological Consequences of Change," Human Relations, Vol. 29, No. 3 (1976), pp. 239-248.

[10]Lucia A. Gilbert, "Situational Factors and the Relationship Between Locus of Control and Psychological Adjustment," Journal of Counseling Psychology, Vol. 23, No. 4 (1976), pp. 302-309.

[11]Richard W. J. Neufeld and Park O. Davidson, "Sex Differences in Stress Response: A Multivariate Analysis," Journal of Abnormal Psychology, Vol. 83, No. 2 (1974), pp. 178-185.

males and females respond similar under stress conditions.

The above studies point to the individuality of what one considers stressful and the need for individualized interpretation. Stress is felt in different ways and to different degrees among societies. Both male and female response under stress is similar though what is stressful is an individual matter.

Kobasa[12] administered Holmes and Rahe's scale of stressful life events to executives to determine the degree of stress they had experienced in the previous three years. Kobasa divided the executives who experienced high stress into two groups. One group was a high-stress/high-illness group, while the other group experienced no illness even though they rated as high on the stress scale as their companion group. Then Kobasa gave these subjects a variety of personality tests to determine the part personality played in attributing or not attributing to illness of the individuals when under stress. The results of her investigation verified that (1) persons under stress who have a greater sense of control over what occurs in their lives will remain healthier than those who feel powerless, (2) persons who are committed to an involvement with their environment (take an active part in it) are healthier than those who view change as a threat and (3) persons who feel positive about change remain healthier than those who have a dislike of change.

Kobasa's study was directed toward three areas of personality. These were control, commitment and challenge. Hardiness in these areas presented greater coping possibilities for individuals facing stressful

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[12]Suzanne Kobasa, "Stressful Life Events, Personality and Health: An Inquiry Into Hardiness," Journal of Personality and Social Psychology, Vol. 37, No. 1 (1979), pp. 1-11.

life events.

This present study specifically dealt with the areas of control, work orientation (achievement) and interpersonal orientation (affiliation) to determine the effect an extensive wilderness experience had upon them. These areas play an important part in coping which is evidenced by studies conducted in these three areas. As has already had been mentioned, Lazarus pointed to clarity of stimulus cues, support of external resources and ability to ward off danger as important coping processes. These three personality characteristics of control, achievement and affiliation fall within these areas.

Control

Sherrod, Hage, Halpern and Moore[13] studied the decisional aspect of control. Taking 60 undergraduate males, he divided them into four groups with varying amounts of control choices. The groups were fed distracting background noise while working on numerical and proofreading tasks. Groups varied as follows: (1) group with no background noise, (2) group with freedom to initiate the noise but unable to turn it off, (3) group that could terminate the noise and (4) group that could both initiate and terminate the noise. The study revealed that performance increased as control increased. The group, which could initiate the noise but had no control in terminating it, had the greatest decrease in performance. The group that could both initiate and terminate the noise had the greatest level of performance. The group that could terminate

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[13]Drury R. Sherrod, Jamie N. Hage, Phillip L. Halpern and Bert S. Moore, "Effects of Personal Causation and Perceived Control on Response to an Aversive Environment: The More Control, The Better," Journal of Experimental Social Psychology, Vol. 13 (1977), pp. 14-27.

the noise anytime they chose had the second greatest level of performance.

Vernon and Bigelow[14] looked at the effect that information gain would have on 80 hernia-repair patients at a Veterans Administration Hospital. One-half of the patients were given extra detailed information of significant events which might befall a herniotomy patient during hospitalization. The other 40 patients were given only essential information. An attitude questionnaire and an adjustment scale were administered to the patients before and following surgery. Results of the tests revealed that patients given extra information had more questions of difficulties inherent in the operation, were more assured of medical abilities of physicians and were less prone to episodes of post operative anger and depression. Patients receiving the extra information showed an overall greater sense of control during hospital care.

Pennebaker, Burham, Schaeffer and Harper[15] investigated the effect of lack of control in physical symptoms. In this study, subjects (48 college females) were placed in front of a box which had a button that could be pressed to turn off a loud noise fed to them through earphones. The number of presses to terminate the noise varied each time from one to nine. Thirty-one noise blasts were administered. The subjects were divided into two groups with one group receiving the noise at

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[14]David T. A. Vernon and Douglas A. Bigelow, "Effect of Information About A Potentially Stressful Situation on Responses to Stress Impact," Journal of Personality and Social Psychology, Vol. 29, No. 1 (1974), pp. 50-59.

[15]James E. Pennebaker, M. Audrey Burnam, Marc A. Schaeffer and David C. Harper, "Lack of Control as a Determinant of Perceived Physical Symptoms," Journal of Personality and Social Psychology, Vol. 35, No. 3 (1977), pp. 167-174.

a fixed sequence and the other group at a mixed interval. At the end of the experiment, the subjects were asked to complete a questionnaire designed to determine bodily sensations. The investigation clearly showed that induced lack of control caused various physical symptoms such as headache, shortness of breath, upset stomach, dizziness and others. The group receiving a varied set of noise blasts were affected to a greater degree by feelings of physical unrest than those receiving a fixed sequence of noise blasts. The fact that the group with the fixed sequence noise was less affected by physical symptoms was likely due to preparation. Knowledge of when the noise blast would occur appeared to be an important bit of information.

These studies support the importance of the sense of control an individual has in coping with a perceived harmful event. Direct action, information and appraisal, and choice of alternatives are significant aspects of that sense of control. Lack of control not only decreases performance but produces physical unrest. The greater the sense of control, the greater the ability to handle stress.

Achievement

Pittner and Houston[16] studied type "A" and type "B" individuals to determine their response to stress and to cognitive coping strategies. Type "A" individuals are defined as competitive, striving, aggressive and time urgency persons. Type "B" individuals are relatively absent of these characteristics.

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[16]Mark S. Pittner and B. Kent Houston, "Response to Stress, Cognitive Coping Strategies, and the Type 'A' Behavior Pattern," Journal of Personality and Social Psychology, Vol. 39, No. 1 (1980), pp. 147-157.

Two-hundred-eighteen college males were given a measurement to determine their "type" patterns. These subjects were then randomly assigned to one of three experimental conditions: (1) threat of shock, (2) threat to self-esteem and (3) low stress group. The threat of shock groups were told they were not doing well at all in their task (digit span test) and there may be a need to apply shock to help them try harder. The threat to self-esteem group was told that they had done poorly in the digit memory work and would, therefore, surely fail on the following extension of digit assignment. The low stress group was told they were doing fine on their work, and they would likely succeed when additional digits were assigned. The Multiple Effect Adjective Checklist was administered four times during the experiment to detemine self report of effect and coping. Cognitive coping strategies were determined prior to the experiment. Pulse rate and blood pressure were also monitored to check physiological arousal to stress.

The results indicated that type "A" individuals exerted a greater physiological arousal than type "B" subjects. The difference here was not significant, however, and type "A" subjects did not perform any better than type "B" in spite of greater physiological exertion. In the threat to self-esteem, the physiological arousal to stress was more pronounced between types. In the cognitive area, type "A" dealt with stress differently than type "B" individuals. Type "A" engaged in denial more than "B" in the threat to self-esteem and used suppression to cope with the threat to shock.

It was apparent in the study that type "A" subjects stay with a task longer than do type "B" subjects and consciously try to cope with the situation. Physiologically, type "A" subjects reported more anxiety

throughout the study than type "B". Type "A" subjects reported less subjective distress than did type "B" relative to their level of psychophysical arousal. The less subjective distress was due to the use of denial by the type "A" group. Type "A" subjects appear to be more achievement oriented. They strive for longer periods of time and work at problem solution more diligently.

Stephan, Bernstein, Stephan and Davis[17] conducted a laboratory and field study to test egotism and expectancy as attributions for achievement. The egotism theory posed was that success would be explained by internal factors of ability and effort, but failure would be explained by the external factor of task difficulty. The expectancy theory was that failure would be attributed to lack of ability when it confirms low expectancy, and success will be attributed to task difficulty if the outcome confirms high expectancy.

One-hundred-sixteen male undergraduate students were subjects for this study. In the laboratory experiment, the experimenter introduced the expectancy level by telling the subjects how they would perform on a second test in light of their first test score. Thus, the subjects either expected to succeed or fail. After the second test was completed, the subjects were told their score and asked to complete a questionnaire in which they were to state to what extent ability and effort, task difficulty and luck helped or hindered their performance. Results indicated the egotism theory to be an accurate predictor of achievement. Internal factors were used to explain success and external factors were

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[17]Walter G. Stephan, William M. Bernstein, Cookie Stephan and Mark H. Davis, "Attributions for Achievement: Egotism vs. Expectancy Confirmation," Social Psychology Quarterly, Vol. 42, No. 1 (1979), pp. 5-17.

used to explain failure.

In the field study, the students were asked to list their expected outcome prior to each test taken in the course. These students were divided into high and low expectancy groups with those expecting to make and "A" or "B" in the high group and those expecting to make a "C" or lower in the low group. A questionnaire was again given at the end of the course to determine to what the students attributed their success or failure. The expectancy of achievement was closely established. Those students who did well but were not expecting to do so explained this unexpected outcome to luck. Of the two attribute theories, however, the ego-involvement was more consistently accurate in this study.

Shrauger and Sorman[18] demonstrated in their study that high self-esteem subjects persist longer than do low self-esteem subjects. In a study of 53 college female students, persistence was greater among high esteem individuals over low esteem subjects. Low self-esteem individuals working on a task following failure will display more persistence in the presence of success. In general, both high and low esteem subjects perform lower on a second task following failure on a preceding task.

Carver, Blaney and Schiur[19] found similar results. Using 70 college students, the researchers investigated negative and positive

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[18]J. Sidney Shrauger and Peter B. Sorman, "Self Evaluation, Initial Success and Failure, and Improvement as Determinants of Persistence," Journal of Consulting and Clinical Psychology, Vol. 45, No. 5 (1977), pp. 748-795.

[19]Charles S. Carver, Paul H. Blaney and Michael F. Schiur, "Reassertion and Giving Up: The Interactive Role of Self-Directed Attention and Outcome Expectancy," Journal of Personality and Social Psychology, Vol. 37, No. 10 (1979), pp. 1859-1870.

outcome expectancies on persistence. Dividing the students into two groups, the experimenter told one group that they performed poorly on the first task and would likely do the same on the second task. The second group was told that they had performed poorly on the first task but that those who performed poorly on the task usually do very well on the second task. Results showed that those who expected to do better persisted longer in the second task. Those who expected to do poorly persisted less on the second task. Those who did poorly on tasks they deemed related spent less time on the second task. Those who expected to do well on a second task, even though they had failed on the first one, spent more time on the second task.

In an article by the U.S. News and World Report[20] Dr. Aaron T. Beck suggested that coping effectively with stress required taking a healthy attitude toward achievement. While Dr. Beck did not degrade achieving, he did deemphasize the notion that it be indelibly twined to self-worth. The idea of achievement and self-worth having such a relationship leads to states of anxiety. Therefore, according to Dr. Beck, a healthier attitude appeared to be one which saw achievement as nice to do within itself; but, as that which was not essential for existence or self-worth.

In summary, more aggressive type individuals strive longer on tasks. They are also more anxious but show less distress than non-aggressive individuals. These individuals usually attribute success to internal factors and failure to external factors (luck). Individuals who have a high degree of self-worth persist longer on tasks than do low

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[20]"What To Do When You're Under Stress," U.S. News and World Report, Vol. 75 (September 24, 1973), pp. 48-52.

self-esteem persons. Generally, both high and low self-esteem individuals will show decreased persistence following failure.

Affiliation

Teichman[21] tested 80 undergraduate male students for high and low anxiety traits. The subjects also listed their need for affiliation and embarrassment levels. Subjects were then placed in four groups where the experimenter outlined various procedures in which they were expected to participate. The tasks were manipulated by the experimenter to induce high and low anxiety levels. The groups consisted of two high anxiety and two low anxiety groups. Results indicated that when the high anxiety individuals were highly aroused the need for affiliation was rejected, while when less aroused affiliation was welcome. Low anxiety subjects when highly aroused preferred affiliation; while, when less aroused it was rejected.

LaRocco, House and French[22] looked at social support in relation to occupational stress. They found that the effect of job strains such as anxiety, depression and irritation were buffered most effectively by work-related sources of social support. The support of friends and spouse helped to some degree in this area but most effective buffering resulted through work related supporters.

Morris, Worchel, Bois, Pearson, Roundtree, Samaha, Wachtler and

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[21]Yona Teichman, "Predisposition for Anxiety and Affiliation," Journal of Personality and Social Psychology, Vol. 29 (March, 1974), pp. 405-410.

[22]James M. LaRocco, James S. House and John R. P. French, Jr., "Social Support, Occupational Stress and Health," Journal of Health and Social Behavior, Vol. 21 (September, 1980), pp. 202-218.

Wright[23] studied the behavior of affiliation among groups waiting to experience three types of stressors. Seventy college male and female students were divided into 15 groups and placed in one of the three stress conditions of shock, embarrassment and ambiguity. Four observers were situated behind a one-way mirror to observe the groups as they waited to participate in the expected experience. Those in the threat of shock groups were more affiliate than those in the anxiety and embarrassment groups. The threat of shock groups walked the floor and talked continuously about the experiment. The other two groups sat in chairs or leaned against the wall and talked intermittently with each other. The reason given by the authors for the lack of cohesiveness in the anxiety and embarrassment groups was that the type of activity they were to participate in was more objective, and any apprehensions the subject may experience would be more likely attributed to self. The fear of shock, however, was a clear external threat.

Dembroski and MacDougall[24] conducted a study with 50 male and female college students. Twenty-five were listed as type "A" individuals and 25 were listed as type "B". Subjects were equally divided into two groups and told that they would work on a mental task. One group was told that they would receive a painful shock while doing the task. The other group was told they would receive a subliminal stimulation. Both

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[23]William N. Morris, Stephan Worchel, Joyce L. Bois, Janine A. Pearson, C. Alan Roundtree, Gary M. Samaha, Joel Wachtler and Sharon L. Wright, "Collective Coping With Stress: Group Reactions to Fear, Anxiety and Ambiguity," Journal of Personality and Social Psychology, Vol. 33, No. 6 (1976), pp. 674-679.

[24]Theodore M. Dembroski and James M. MacDougall, "Stress Effects on Affiliation Preferences Among Subjects Possessing the Type 'A' Coronary-Prone Behavior Pattern," Journal of Personality and Social Psychology, Vol. 36, No. 1 (1978), pp. 23-33.

groups were given the choice to work the problem alone or in a group. Observation was made during a waiting period following the instructions. Type "A" individuals were more affiliative than type "B", regardless of the threat level. Type "A" individuals chose to work alone rather than in a group.

To summarize, high anxiety subjects reject affiliation when highly aroused, and accept it when less aroused. On the other hand, low anxiety individuals were shown to accept affiliation when highly aroused, and reject it when less aroused. Aggressive people appear more affiliate than the less aggressive. Aggressive people prefer to work alone more often than in groups. Immediate threat leads to greater affiliation among people particularly when it is attributed to external sources. Less affiliation is required when threat can be handled objectively within self.

Wilderness Camping Programs and Personality Change

An abundance of literature is available on the effect of wilderness camping programs upon personality among juvenile offenders and the mentally retarded. However, such literature is woefully lacking when dealing with a normal population. What literature is available, however, generally supports the popular beliefs regarding the beneficial effect of camping upon personality.

A study with high school students to determine the psychological benefits of an outdoor challenge program was conducted by Kaplan.[25] Two

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[25]Rachel Kaplan, "Some Psychological Benefits of an Outdoor Challenge Program," Environment and Behavior, Vol. 6 (March, 1974), pp. 101-116.

groups were used for the study with one serving as a control group. The experimental group participated in a two-week Outward Bound type experience. The groups consisted of seven subjects each and were equated for sex, age and geographical location. Both groups were given the Rosenberg Scale of Self-Esteem just prior to the two week camping experience. This scale was also administered six months later. An additional two measures were given the experimental group only. One test measured items related to prior camping experience and abilities and attitudes toward nature. The other measurement device was given immediately following the outing to determine changes in attitude and skill. At the close of the two weeks there was a definite improvement for the experimental group in self-esteem and confidence.

In the final test administered six months later, the data revealed these same positive changes in the experimental group over the control group. The experimental group was found to have a greater sense of concern for others, a more realistic outlook of their own strengths and weaknesses, and a greater self-sufficiency in the use of their time and talents.

The method of self-selection was used to determine who would participate in the experimental group. The pretest indicated that this group initially was higher in self-esteem. Even though there was an improvement in the self-esteem and confidence of the experimental group following the two-week camping experience, it raises the question as to the type of person who would opt for a particular experience of this nature.

Clifford and Clifford[26] tested 36 adolescent boys, ranging in age from 16 to 21, to determine the result of increased feelings of self-worth and competence. The groups participated in a one-month Outward Bound program which introduced physical challenge as a means of developing character. Self-concept measures and semantic differential format were administered prior to the Outward-Bound program and at its conclusion. Findings showed overall changes in self-worth at the end of the program. There was also a reduction in the difference between the self and the ideal self as indicated by the semantic differential measurement. Based on scores on the Self-rating Scale the group was divided at the mean between those with poor initial self-ratings and those with better initial self-ratings. Both groups improved between pretest and posttest. However, there was a significant difference in the self-concept of the subjects of the two groups at the end of the experiment. Those who were higher in initial self-concept improved more during the experiment than did those with a poor initial self-concept.

In a study very similar to Clifford and Clifford; Payne, Drummond and Lunchi[27] sought to determine the effect on personality of an arctic expedition. The expedition lasted for one month and involved collecting scientific data. The work requirement was both physically and intellectually demanding. All the participants were volunteer males, and between 17 and 19 years of age. Two weeks prior to the departure of the

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[26]Edward Clifford and Miriam Clifford, "Self-Concepts Before and After Survival Training," British Journal of Clinical Psychology, Vol. 6 (1967), pp. 241-248.

[27]J. Payne, A. W. Drummond and M. Lunchi, "Changes in the Self-Concepts of School-Leavers Who Participated in an Artic Expedition," British Journal of Educational Psychology, Vol. 40 (June, 1970), pp. 211-216.

expedition and again on its return the group was given a Personality Inventory, Self-rating Scales and an Ideal Descriptive Scale. At the close of the experiment the expedition group had more realistic and more attainable ideal self.

A control group was used in this study which revealed that those volunteering for this type of experience displayed greater self-esteem. The control showed minimal change in self-esteem between the two test periods. The expedition group revealed a significant change at the .05 percent level of confidence, between their ratings on the pretest and posttest.

The results of the foregoing studies on extensive wilderness expeditions are limited but in agreement. In all studies, there was a change in self-esteem. Two of the studies indicated a reduction between the self and ideal self. These studies also revealed that persons choosing an experience of this nature were higher in initial self-concept than the non-volunteer control group.

Changes in Personality Related to Age, Sex and Education

Personality appears to be most flexible during childhood and adolescence. Personality characteristics vary between male and female. The intellectual aspect of personality seems to make some difference in one's sense of control during the mid-years of 35 to 50. This sense of intellectual control, however, is not significant when compared to other age groups.

Bradley and Webb[28] conducted a study with 306 male and female subjects ranging in age from 13 to 90 to determine the difference in Locus of Control in the three areas of intellect, social and physical domains. Results of this study showed that adolescence (13 to 18) and persons over 60 had less of a sense of control in social situations than the ages between. This difference was significant when compared to the 35 to 50 year olds. The 19 to 25 year old group displayed significant difference in the sense of control in physical situations from the other age groups. Although the difference was not significant, the age group of 35 to 50 scored higher in the intellectual control domain. In general, the sense of control over situations increased in all areas as age increased up to the age of 60. At this age a decided decrease in the sense of social and intellectual control occurred. The sense of physical control declined at the earlier age of 35.

In regard to academic success and personality, Kifer[29] found in a cross-sectional study of grade school children that positive personality characteristics were related to success in academic achievement. Failure led to lower levels of regard for oneself and his abilities. Success, on the other hand, lead to stronger and more powerful regard for oneself. Kifer also found that positive or negative success was related to the kind of reward, concern or lack of concern provided by the home. The child who received support and encouragement at home was more likely

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[28]Robert H. Bradley and Roger Webb, "Age-Related Differences in Locus of Control Orientation in Three Behavior Domains," Human Development, Vol. 19 (1976), pp. 49-55.

[29]Edward Kifer, "Relationship Between Achievement and Personality Characteristics: A Quasi-Longitudinal Study," American Educational Research Journal, Vol. 12, No. 2 (Spring, 1975), pp. 191-210.

to achieve well and possess positive personality characteristics. Kifer felt that the home was more highly related to personality characteristics in early school years than in later ones.

A study to determine the effect of medical education upon personality interrelations and affective mood states was conducted by Kilpatrick, Dubin and Marcotte.[30] Rotter's Internal-External Locus of Control Scale was used to measure the sense of internal or external control which medical students felt they possessed. The Profile of Mood State Scale measured the affective mood of the students. Subjects consisted of 109 freshmen, 84 sophomores, 40 juniors and 44 senior medical students.

In general, the study revealed that medical students with an internal locus of control exhibited less mood disturbance than their counterparts with external locus of control. It was also discovered that during freshman and senior years, internals and externals were equally vigorous and active. In the junior and sophomore years, the externals showed much less vigor and activity than internals. The indication was that the loss of vigor and activity during this period of time lead to decreased performance. There was also evidence of hostility displayed by the external locus of control students during this time. There was a decided difference among internal and external locus of control students engaged in a medical education in affective mood.

To summarize, successful achievement in educational pursuits seem

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[30]Dean G. Kilpatrick, William Dubin and David B. Marcotte, "Personality, Stress of the Medical Education Process and Change in Affective Mood State," Psychological Reports, Vol. 34 (1974), pp. 1215-1223.

to influence positively the personality factor of self-worth. Also, the greater confidence one appears to have in intellectual control comes with increased age with the greatest confidence demonstrated in the 35 to 50 age group. Although successful academic endeavors may relate to a higher self-regard, being successful in academic pursuits may indeed be stressful.

In consideration of age, Neugarten[31] discussed the life cycle. She projected the idea of psychological change being continuous throughout life, and that realities of aging are not merely to be understood by projecting forward issues that were saliant in childhood. As life grows longer, Neugarten suggested that successive choices and commitments accumulate which cause life to grow differently psychologically over time. Neugarten stated that the aged do not desire to be young again, but for the most part they desire to "feel" young again.

Schaie and Parham[32] conducted a seven-year study with a group of 394 subjects to determine the stability of personality traits. The subjects ranged in age from 22 to 84. Data were collected by a 75-item questionnaire designed to reveal 19 personality factors. The results were considered from a cross-sectional and longitudinal view to check the validity of the cross-sectional approach. The study revealed that stability of personality traits was the rule rather than the exception across the years. However, some change did occur after the adolescent years. The change that was observed was considered to be due to the

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[31]Bernice L. Neugarten, "Time, Age and the Life Cycle," American Journal of Psychiatry, Vol. 136, Pt. 2 (July, 1979), pp. 887-894.

[32]K. Warner Schaie and Iris A. Parham, "Stability of Adult Personality Traits: Fact or Fable?" Journal of Personality and Social Psychology, Vol. 34, No. 1 (1976), pp. 146-158.

variables of early socialization experiences, generation impact and particular sociocultural transitions. The personality trait of excitability showed clear increase with age. In general, the authors suggested in this study that adolescence is the time of greatest flexibility in personality variance. Changes occurring after that period are due to various social and/or generational factors.

In reflecting on Bradley and Webb's[33] study, it was observed that changes occurred in various behavioral domains with age. Of significance is the fact that changes do occur in one's sense of control in the intellectual, social and physical domain. However, the greatest change occurs in the adolescence age group. From 20 to 60, there was very little change occurring. Thus, Bradley and Webb's study lends support to Schaie and Parham's study of age flexibility and stability as it reflects the occurrence of change.

Sex difference in personality during adolescence was investigated by Stefic and Lorr.[34] The researchers assessed the interpersonal patterns of high school students by a personality inventory. The inventory used was the Interpersonal Style Inventory which contained 16 bipolar dimensions balanced for acquiescence and social desirability. The purpose of the study was to determine changes occurring in adolescent personality in the age period from 12 to 19. Another purpose was to identify personality dimensions that distinguish boys and girls

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[33]Robert H. Bradley and Roger Webb, "Age-Related Differences in Locus of Control Orientation in Three Behavior Domans," Human Development, Vol. 19 (1976), pp. 49-55.

[34]Edward C. Stefic and Maurice Lorr, "Age and Sex Differences in Personality During Adolescence," Psychological Reports, Vol. 35 (1975), pp. 1123-1126.

at various age periods and to discover any age trends in personality change.

Three-hundred-thirty-one boys and 358 girls between 12 and 19 years of age were tested. A difference was discovered between male and female at different age levels. Women were revealed as more affectionate, loyal, sensitive to needs of others, sympathetic, tender and yielding. Men were more ambitious, assertive, independent and self-sufficient. All these differences were significant at the .001 level of confidence.

As age increased for each sex, differences were noted. Women changed significantly in that they became more independent with age and less yielding. Men showed significant increases in achievement, conscientiousness and rule-boundedness (more socializing). The authors stated that on the whole, age trends were not conspicuous due to the cross-sectional nature of the data.

In summary, this chapter has dealt with individuality of stress and change, the differences in personality at various ages, among sexes and as influenced by educational success. Studies indicated that both male and females respond similar under stress although to what degree various life events are stressful is an individual matter. Personality flexibility is mainly at young ages up through adolescence. After adolescence, personality becomes more stabilized. Changes which occur after adolescent years are due to factors of socialization and generational impact. Personality differences in men/women during adolescence are found in the fact that women are more affectionate, loyal, sympathetic, sensitive to needs of others, tender and yielding. As the age of women increased from 12 to 19, they became more independent and less yielding. Men during adolescence are more ambitious, assertive, independent and

self-sufficient than women of the same age. As age increases for men during adolescence, they become more socialized. Academic success increased positive self-worth among grade school youth. Confidence of intellectual control appeared to be greater among middle aged people.

In this chapter, literature on the possibility of personality change was included. Literature on the importance of control, achievement and affiliation in the coping process was presented. What effect has been found in personality change among normal populations engaged in extended outdoor camping experience was also mentioned.

CHAPTER III

METHOD

Subjects

Subjects for this study were 47 students participating in the Spring Wilderness Expedition Course of the National Outdoor Leadership School. These subjects ranged in age from 18 to 31. The group consisted of 14 high school graduates, 24 college students and 9 college graduates, 4 of which had earned graduate degrees. Of this group, there were 25 males and 22 females.

Ten of the original 47 subjects were dropped from the study. Two subjects failed to take the posttest, two failed to complete the posttest and six scored higher than five on the infrequency scale of the posttest which meant that they probably answered the question on the Personality Research Form randomly without reading them. Thus, the study concluded with 37 subjects. These included 6 high school graduates, 22 college students and 9 college graduates. Twenty-one of those completing all tests were females and 16 were males.

Subjects were selected because of their participation in the NOLS spring (1981) semester program. Individuals chose to participate in the NOLS course on their own and without being aware (at the time of enrollment) that they would be subjects of a study.

The purpose was to determine the effect on personality after subjects participated in the NOLS semester course. Specifically, that

course was designed to provide the "most comprehensive program training available" in wilderness skill, technique and knowledge.[1] The course was divided into the following sections:

1. Desert Section: A total of 32 days was conducted in the Canyonlands of Utah. This section was "designed to teach wilderness living and travel skills for a fragile desert environment, and expose students to the Anasazi culture and geology of the Colorado Plateau."[2]
2. Small Group Student Expedition: Practical application of skills and knowledge learned in the Canyonlands was applied by having the students plan and carry out an expedition on their own. The group was divided into groups of four persons each. Two days were spent in planning and getting supplies for the expedition under the supervision of the school. Six days were spent in the wilderness.
3. Climbing Section: A total of 14 days was conducted at a rock climbing location east of Lander, Wyoming. The purpose of this section was to expose students to all aspects of rock climbing. A stationary camp was located at the rock climbing site to give participants ample time to learn and master rock climbing techniques.
4. Caving Section: A total of 14 days was spent in a national

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[1]The National Outdoor Leadership School Catalogue of Courses 1980-1981 (Lander, Wyoming, 1980), p. 11.

[2]The National Outdoor Leadership School Course Outline 1980-1981, (Lander, Wyoming, 1980).

park area. The purpose of this section was to "develop a thorough understanding of cave conservation, travel, geology and surveying."[3]

5. Wintering Ski Mountaineering Section: A total of 21 days was spent in the Wind River Mountains. This section was designed to enable participants to live and travel comfortably in demanding winter conditions.
6. The remaining days of the 95 were spent in travel and reissuing of equipment.

Procedure

Testing was worked into the NOLS orientation program as a natural course of events. Subjects, however, were not required to participate in the study and were free to omit this aspect of the orientation if desired. Forty-seven students took the personality measurements.

Testing was done in two groups. Arrangements to test in this manner better fit the school's orientation procedure and schedule of events and had nothing to do with particular testing procedures.

Pretests were given prior to the expedition on February 9 and 12, 1981. Posttests were given for each group 95 days later upon return from the expedition (May 15 and 18, 1981).

At the beginning of the orientation period the subjects were told by the NOLS coordinating staff member that they, if they desired, could particpate in a study which NOLS had entered into with the experimenter. Then the experimenter told the subjects that the purpose of the study

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[3]Ibid.

was to determine the effect that an extensive wilderness camping program may have on personality. The subjects were told that personality characteristics of control, achievement and affiliation had been found in several studies to assist in coping with the stress of normal life events. The intent, therefore, of the present study was to observe what part an extensive wilderness expedition may play in the development of these characteristics. The subjects were assured that the experimenter was concerned only in observing changes in these personality characteristics; that the group would be evaluated in toto; and that there was no aspect of the study involved with individual psychoanalysis. The experimenter then informed the group of the time the tests would be given later in the day, after which the staff resumed the orientation session. There were other introductions and announcements before the students were ushered off to other facets of the orientation.

The pretest and posttest each took an hour and thirty minutes. During this time period, the subjects took two personality measurements. In the pretest the subjects were told not to begin until they were told to do so. The experimenter (with the students) went over the instructions as listed on the front of testing instruments. The students were encouraged to ask questions related to taking the test, and then were told to begin. Instructions for the administration of the tests were followed closely by the experimenter as outlined by the test designers.

The posttest was administered with abbreviated introduction as the subjects were acquainted with the procedure. Emphasis was made that the subjects take their time on the posttest and give thought to the question and the response. Subjects were eager to complete the posttest and the remainder of the de-briefing procedures so they could start home.

Despite the precaution given, 10 tests were deleted from the study due to incompletion or randomly responding without reading the questions.

The personality characteristic of control was measured by Rotter's Internal-External (I-E) Locus of Control Scale.[4] The personality characteristics of control, achievement and affiliation were measured by Jackson's Personality Forms AA and BB.[5]

Forms AA and BB of the Personality Research Form were parallel forms of the same personality measurements. Form AA was given as the pretest and Form BB as the posttest. The same Internal-External (I-E) Locus of Control Scale was given for both the pretest and posttest.

The Internal-External Locus of Control Scale is a forced choice, 29-item scale including six filler items. Item analysis and factor analysis show reasonably high internal consistency. Test-retest reliability is satisfactory, and the scale correlates satisfactorily with other methods of assessing the same variable such as questionnaire and interview assessments. The I-E Scale derives its construct validity from a series of studies which support the hypothesis that one who controls his own destiny is likely to (a) be alert to those aspects of the environment which provided useful information for his future behavior, (b) take steps to improve his environmental conditions, (c) place greater value on skill or achievement reinforcements and be generally concerned with his ability, particularly his failures, and (d) be resistive to subtle attempts to influence him.

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[4]Julian B. Rotter, "Internal-External Locus of Control Reinforcement," Psychological Monographs, Vol. 80, No. 1 (1963), pp. 1-28.

[5]Douglas N. Jackson, Personality Research Form Manual (Goshen, New York, 1974), pp. 1-61.

In view of the attempt of this study to determine the change in the individual sense of control over his environment and his participation in his environment, the I-E Scale was an appropriate instrument. The questions on this scale form were orientated toward external control. Therefore, the lower the score, the higher an individual measures on internal control.

The Personality Research Form (PRF) was developed by Douglas N. Jackson to test various personality traits. The development of the list of traits tested was very thorough, requiring a great deal of research and testing. The intent of Jackson was to develop as precise as possible an instrument which would pin-point trait characteristics. Thus, traits with stylistic considerations can be identified. For instance, anxiety and hostility have similar reponse styles so that from the results of many tests one does not know which of the two traits is indicative of the individual. In order to correct this error, Jackson employed careful item selection with an unequal number of keyed true and false responses. This reduced the spurious correlation between scales attributable to shared desirability variance.

Consideration in the development of the PRF fall into three areas. These included the validational procedures of substantive, structural and external components. The substantive component dealt with the degree to which the items comprising the test reflected appropriate universality of content as supported by theoretical grounds. Thus, a great deal of personality research was done by Jackson and his assistants to single out personality traits. The structural component consisted of developing a model to which Jackson expected item responses to conform. The external component took into consideration the validity of the test,

i.e., it determined if the test variables corresponded to non-test manifestation of the trait.

The above three components were considered methodically. A review of related literature was conducted. Items were selected and weeded out by a team of experts in the field of psychology. Testing groups were college students. Efforts were made to determine validity by peer evaluation and by interviews with psychologists with subjects tested.

The control dimension of personality, with which this study dealt, was measured through both the I-E Locus of Control Scale and the Personality Research Form. The I-E Scale measured decisional control described by Averill[6] as freedom of choice. Essentially this scale measures if one believes that he/she controls his/her environment or if things happen to him/her in life due to luck, chance or to other external forces.

The PRF measured control through five personality measurements. These were impulsivity, change, harmavoidance, order and cognitive structure. In this measurement, harmavoidance, order and cognitive structure stand opposite change and impulsivity. Change indicates a liking for new and different experiences and impulsivity reveals an uninhibited and spontaneous personality. Harmavoidance (seeking to maximize personal safety), order (concern for keeping environment and personal effects neat and organized) and cognitive structure (dislike of ambiguity) stand in a bipolar position to the above. A person high in change and impulsivity is unlikely to be confined by environmental

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[6]James R. Averill, Personal Control Over Aversive Stimuli and Its Relationship to Stress," Psychological Bulletin, Vol. 80 (1973), pp. 286-303.

influences and freer to seek alternatives to situations. He/she is less controlled and more in control. Thus, a high score on the PRF in change and impulsivity would likely mean a low score in harmavoidance, order and cognitive structure.

Personality characteristics found in the areas of work orientation and interpersonal orientation were measured by the PRF. The form described work orientation consisting of three personality characteristics. These are achievement (aspiring to accomplish tasks), endurance (persistence) and play (light-hearted, easy going attitude toward life). Play is in a bipolar position to achievement and endurance. Again, a person scoring high in achievement and endurance would likely score low in play.

Interpersonal orientation contains affiliation and five other personality characteristics. This area is defined in general as the need an individual may have for support from others. The six personality characteristics of this area are: affiliation (ready acceptance of people and enjoyment of friends), nurturance (willingness to help others, sympathetic and comforting toward others), exhibition (engages in behavior that wins notice, likes to be the center of attention), social recognition (desires to be held in high esteem by others; seeks approval and recognition), aggression (antagonistic and quarrelsome and enjoys combat and argument) and defendence (suspicious of others and suspects that people mean him harm). Aggression and defendence stand opposite affiliation, nurturance, exhibition and social recognition on the PRF. An individual who desires a great degree of interpersonal support will indicate a low score in aggression and defendence with higher scores in the other four areas.

Analysis of Results

Results were analyzed by means of comparison of the standard scores of the group in the present study with the normal populations as provided by Jackson.[7] Comparisons were made between Jackson's group and the results of the subjects of the present study on the pretest and posttest. Also, a t-test was applied to the group tested to determine the degree of difference between the pretest and posttest in various personality characteristics, particularly those areas of control, work orientation and interpersonal orientation. A t-test was applied to the results of the I-E Scale to determine the degree of difference between the pretest and posttest in regard to the personality characteristic of internal control. A t-test was also applied to determine sex difference in each of the personality characteristics under considerations. These comparisons and differences were expressed in figures and tables. Interpretation and discussion was made in light of related literature applicable to this area.

Results were discussed in the order of differences in male and female pretest scores (T scores) with Jackson's norm group. These were related in figures which were companion to the PRF. Tables were also presented displaying the mean differences between pretest and posttest scores for both male and female at various educational levels and age groupings. A table also presented the mean differences between sexes on the pretest and posttest. A table showing the degree of significance between the pretest and posttest means was also displayed.

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[7]Douglas N. Jackson, Personality Research Form Manual (Goshen, New York, 1974), pp. 9-10.

CHAPTER IV

RESULTS

This chapter analyzes the data collected from the tests given the wilderness experimental group. Data were compared to the norm group and to itself in various tables and figures. Figures presented were companion to the Personality Research Form.

Table I displays the difference between the means of the pretest scores of the subjects of this study (experimental group) with the means of Jackson's[1] norm group. This table is divided into male and female groupings as is Jackson's. Figures 1 and 2 presented in graphic form the T-score comparisons of the pretest scores of the experiment group with those of the norm group. Only mean differences of above one point (1.0) are discussed.

Table I shows the male norm group scored higher than the experimental group in Aggression, Cognitive Structure, Dominance, Harmavoidance, Order and Social Recognition. The experimental group scores indicated a greater degree of Abasement, Autonomy, Change, Endurance, Impulsivity, Nurturance, Sentience and Understanding. The norm group appeared to be more irritable, had a greater dislike for ambiguity, attempted to control and direct his/her environment and other people, made greater efforts to avoid harmful situations, were more concerned in

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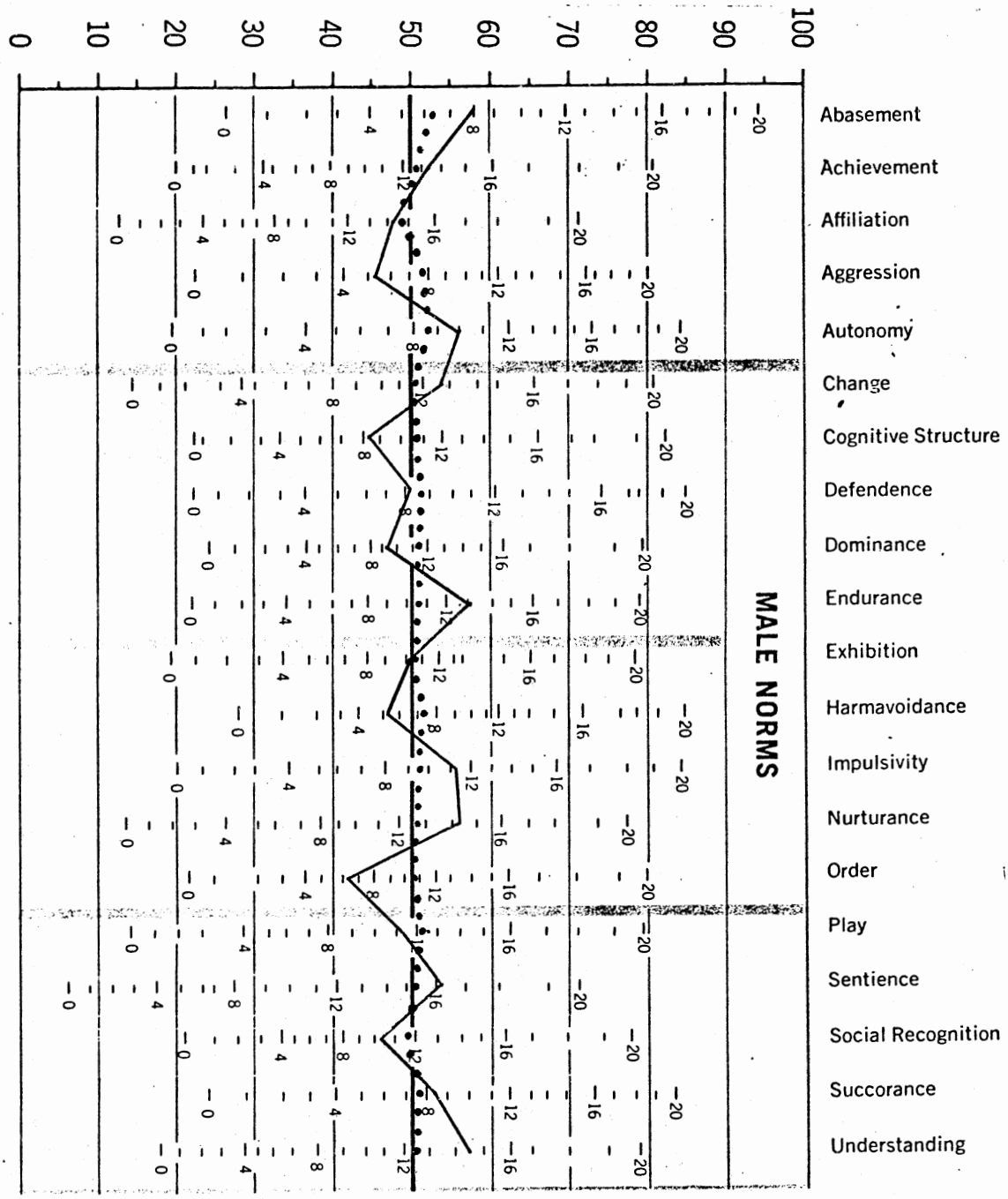
[1]Douglas N. Jackson, Personality Research Form Manual (New York, 1974), p. 29.



. . . . . Norm Group (N = 1029)
——— Experiment Group (N = 16)

Figure 1. T-Score Comparison of Norm Male Group With Experiment Males on Pretest

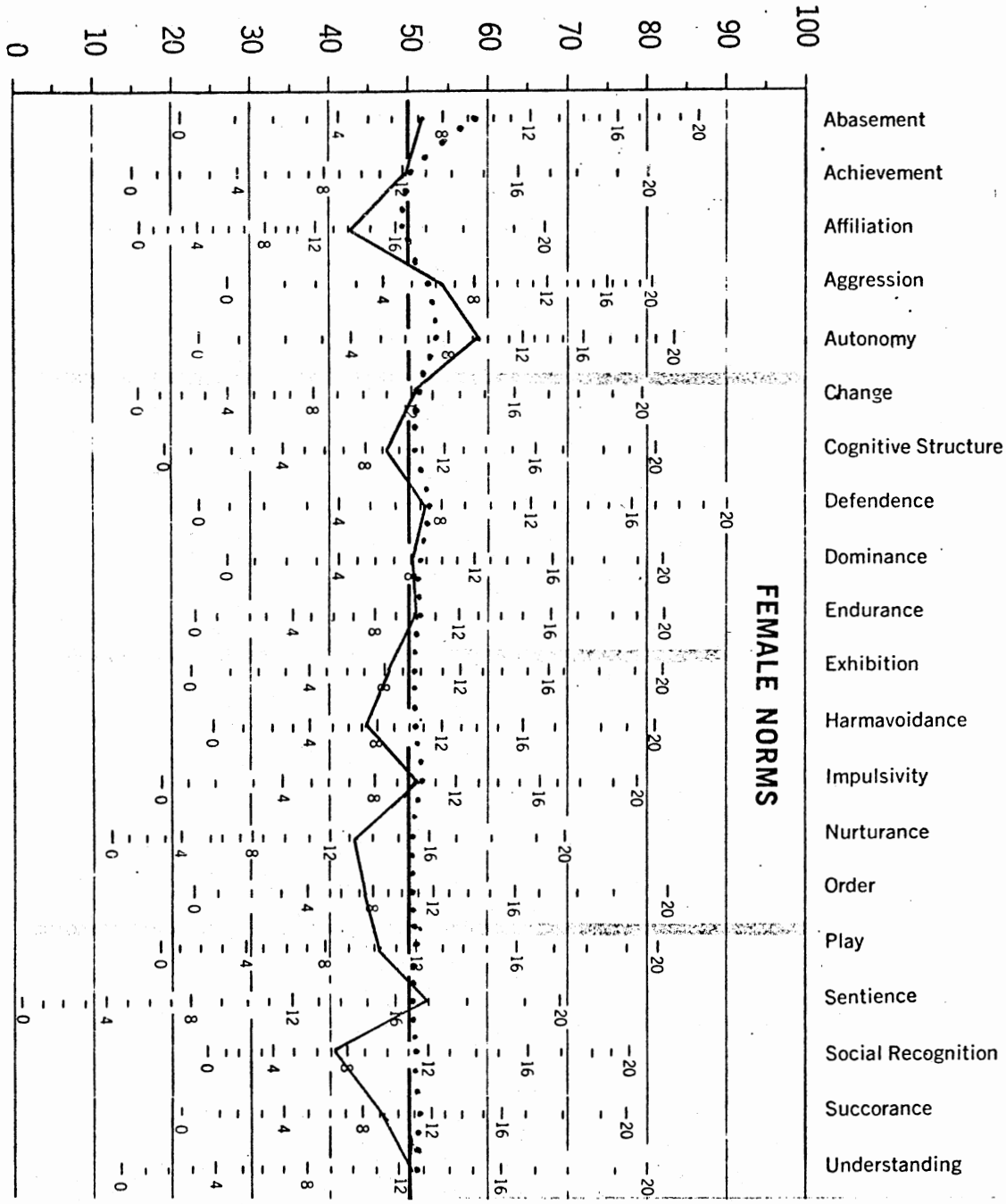


Figure 2. T-Score Comparison of Norm Female Group With Experiment Females on Pretest

TABLE I

COMPARISON OF MEAN DIFFERENCES BETWEEN JACKSON'S NORM GROUP AND PRETEST SCORES OF EXPERIMENT GROUP

	Male			Female		
	Norm Group	Exper. Group	Diff.	Norm Group	Exper. Group	Diff.
Abasement	6.2	8.0	+1.8	7.3	7.1	- .2
Achievement	12.6	13.4	+ .8	12.3	12.7	+ .4
Affiliation	15.0	14.6	- .4	16.2	14.0	-2.2
Aggression	7.9	5.4	-2.5	5.9	6.3	+ .4
Autonomy	8.6	10.0	+1.4	7.1	9.6	+2.5
Change	11.7	12.8	+1.1	12.3	12.8	+ .5
Cognitive Structure	10.9	8.9	-2.0	10.7	9.5	-1.2
Defendence	8.8	8.2	- .6	7.3	7.7	+ .4
Dominance	11.1	9.8	-1.3	8.7	8.5	- .2
Endurance	10.7	13.0	+2.3	10.1	10.4	+ .3
Exhibition	10.8	10.4	- .4	9.7	8.3	-1.4
Harmavoidance	7.5	5.4	-2.1	10.3	7.2	-3.1
Impulsivity	9.8	11.4	+1.6	10.3	10.8	+ .5
Nurturance	12.7	14.9	+2.2	15.5	13.2	-2.3
Order	10.8	6.3	-4.5	10.7	7.5	-3.2
Play	12.1	11.9	+ .2	12.0	10.8	-1.2
Sentience	15.2	16.3	+1.1	16.5	17.0	+ .5
Social Recognition	11.9	10.4	-1.5	11.3	7.7	-3.6
Succorance	7.9	8.9	+1.0	11.2	9.1	-2.1
Understanding	12.5	14.5	+2.0	12.8	12.6	- .2

Populations consist of norm group males 1029, experiment group males 16, norm group females 1002, and experiment group females 21.

keeping personal effects and surroundings neat and organized and had a greater concern about reputation than did the experimental group. On the other hand, the experimental group showed a higher degree of humility, had more of a sense of freedom, had greater enjoyment of new experiences, displayed more persistence and was a little more uninhibited than the norm group. The experimental group also showed more sympathy, had greater aesthetic sensations to surroundings and was more curious.

The female norm group scored higher than the experimental female subjects as revealed by their pretest scores in affiliation, cognitive structure, exhibition, harmavoidance, nurturance, order, play, social recognition, succorance and understanding. The experimental group was higher only in autonomy (less likely to be bound by restraints and being freer and unattached). The norm group seemed to enjoy being with people more, had a greater dislike of uncertainty, was more desirous to be the center of attention, was more careful to avoid situations involving risk and gave greater sympathy than the experimental females. Likewise, the norm group had a greater sense of organization, did more things for fun, more concerned about reputation, seeking of sympathy and scrutinizing of information.

Jackson's[2] figure recording the standard scores revealed very little difference between the norm male group and the experimental group. Sixty-eight percent of the scores should fall between 40 and 60 on the standard score figure. Figures 1 and 2, displaying the standard scores of the norm male and female groups with the experimental group,

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[2]Ibid., p. 11.

showed the experimental group fell within the expected limits, although the two groups did differ slightly in various personality characteristics.

Table II shows the norm group means as compared to the posttest score means of the experiment group. As compared to the experiment group, the norm group remained different for male subjects in the area of aggression, cognitive structure, harmavoidance, order and social recognition. The dominance domain was more closely matched by the male experiment group with only a .7 difference in the means of the two groups. The norm group displayed higher scores in defendence (suspicion that people mean one harm), exhibition (more of a desire to be the center of attention) and succorance (frequently seeks the sympathy of others). The male posttest means for the experiment group maintained higher scores in autonomy, change, endurance and sentience. The areas of abasement, impulsivity, nurturance and understanding were brought more in line with the norm group showing a difference in the two means of under 1.0. The males for the experiment group showed an increase of 2.7 difference over the mean of the norm group in play (pleasure seeking and doing things "just for fun").

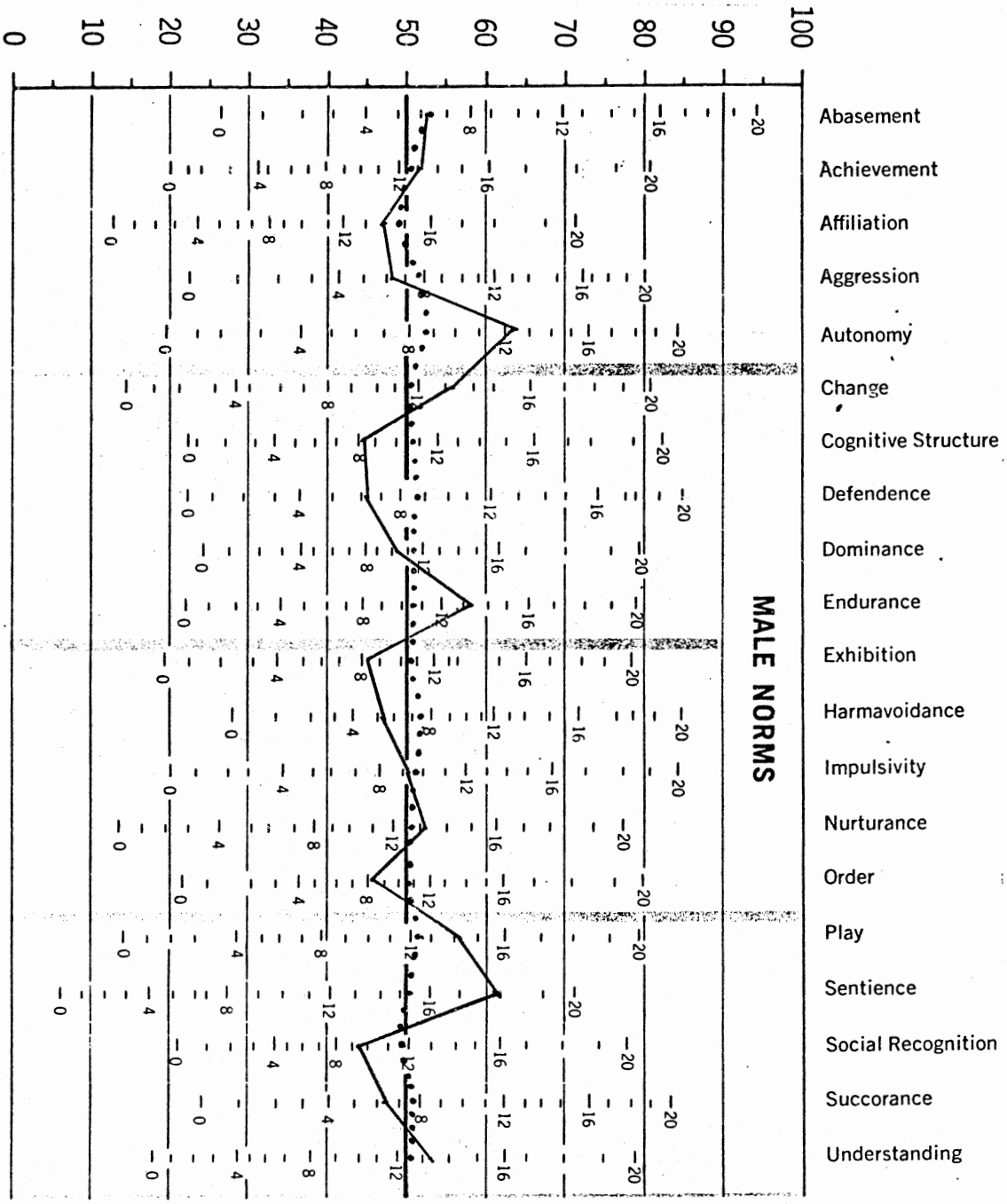
The female norm group continued to display higher means than the experiment female posttest group displayed in affiliation, cognitive structure, harmavoidance, nurturance, order, social recognition and succorance. The norm female group mean was higher than the experiment female posttest mean in abasement (higher degree of humility), while the experiment female group posttest mean for play was greater by 1.9 than the norm group. The experiment female group showed increases of above 1.0 difference in means over the norm group in aggression, autonomy, change, dominance, endurance, impulsivity, play and sentience. Figures 3 and 4

TABLE II

COMPARISON OF MEAN DIFFERENCES BETWEEN JACKSON'S NORM GROUP AND POSTTEST SCORES OF EXPERIMENT GROUP

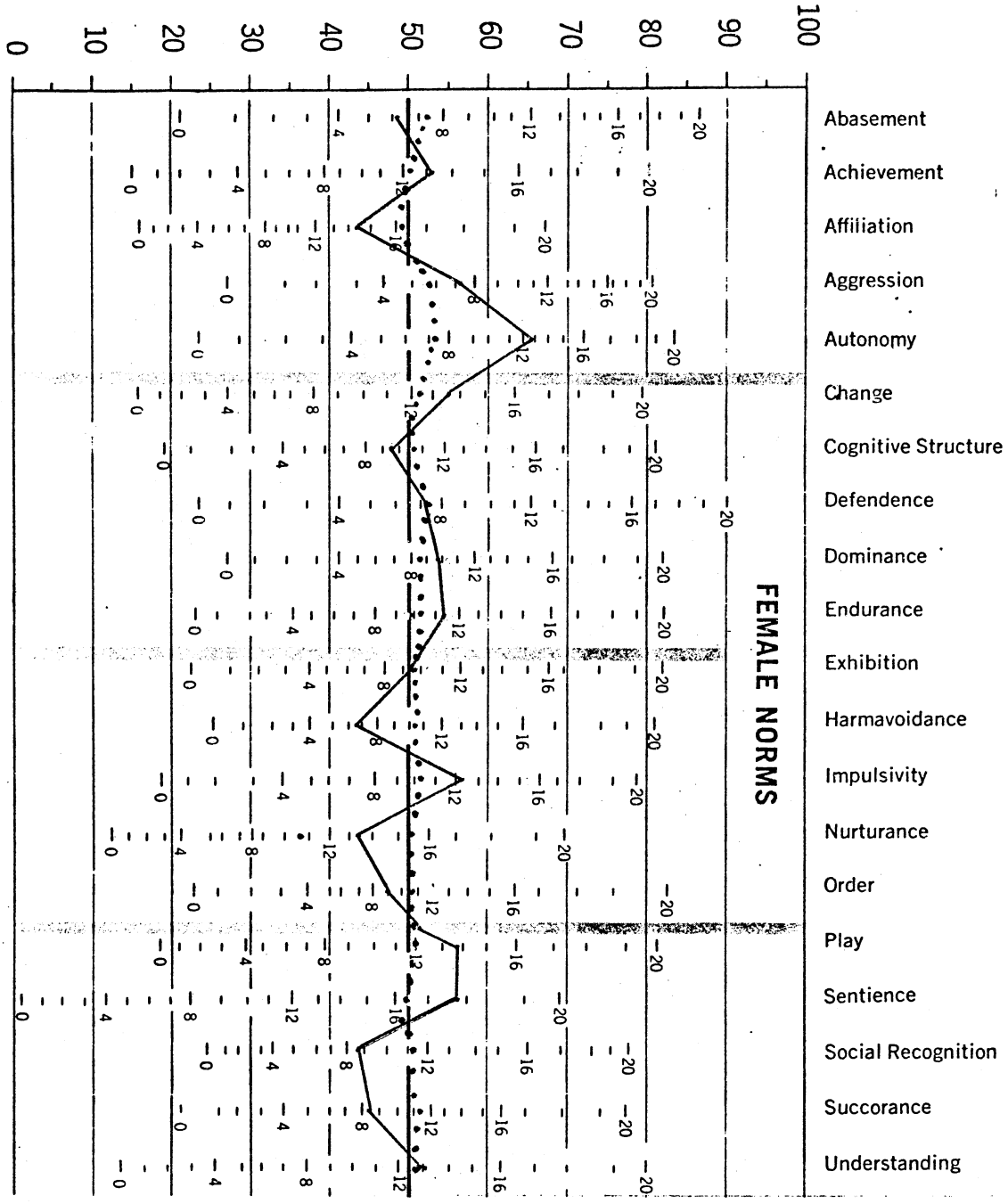
	Male			Female		
	Norm Group	Exper. Group	Diff.	Norm Group	Exper. Group	Diff.
Abasement	6.2	6.7	+1.5	7.3	6.1	-1.2
Achievement	12.6	13.0	+ .4	12.3	13.2	+ .9
Affiliation	15.0	14.0	-1.0	16.12	14.3	-1.9
Aggression	7.9	6.3	-1.6	5.9	7.1	+1.2
Autonomy	8.6	12.7	+4.1	7.1	12.8	+5.7
Change	11.7	13.6	+2.1	12.3	13.6	+1.3
Cognitive Structure	10.9	8.4	-2.5	10.7	9.5	-1.2
Defendence	8.8	6.1	-2.7	7.3	7.2	- .1
Dominance	11.1	10.4	- .7	8.7	9.9	+1.2
Endurance	10.7	13.8	+3.1	10.1	11.4	+1.3
Exhibition	10.8	8.6	-2.2	9.7	9.4	- .3
Harmavoidance	7.5	5.3	-2.2	10.3	6.7	-3.6
Impulsivity	9.8	9.5	- .3	10.3	12.1	+1.8
Nurturance	12.7	13.1	+ .4	15.5	13.3	-2.2
Order	10.8	8.1	-2.7	10.7	9.0	-1.7
Play	12.1	14.8	+2.7	12.0	13.8	+1.8
Sentience	15.2	18.1	+2.9	16.5	17.9	+1.4
Social Recognition	11.9	7.9	-4.0	11.3	8.7	-2.6
Succorance	7.9	6.7	-1.2	11.2	8.3	-2.9
Understanding	12.5	13.4	+ .9	12.8	13.0	+ .2

Populations numbers consist of norm group males 1029, experiment group males 16, norm group females 1002, and experiment group females 21.



. . . . . Norm Group (N = 1029)
——— Experiment Group (N = 16)

Figure 3. T-Score Comparison of Norm Group With Experiment Males on Posttest



. . . . . Norm Group (N = 1002)
———— Experiment Group (N = 21)

Figure 4. T-Score Comparison of Norm Female Group With Experiment Female Group on Posttest

gave graphic comparison of the male and female posttest T-scores of the experiment group with the male and female norm group T-scores.

Figure 5 compares the pretest and posttest standard scores for males of the experiment group. Following the 95-day wilderness expedition the males showed more humility, a greater freedom from restraints, increased easy-going attitude (play) and keener physical sensations to surroundings. The males displayed slight increases in aggression, change (adapts readily to changes in environment), endurance (persistence) and order (personal organization). The males were less suspicious of others and less desirous to be the center of attention upon return from the wilderness. Likewise, he was more deliberate (less impulsive) and not as willing to give sympathy and comfort to others (nurturance). The males upon return from the wilderness trip sought less recognition and sympathy from others and showed decreased interest in analytical thought (understanding).

The females, upon return from the wilderness, displayed posttest T-scores of little variation from pretest scores (Figure 6). Only two areas showed large differences. These were autonomy and play. Minor increases were shown in endurance, impulsivity, order and sentience. On the whole, the female posttest scores followed closely the pattern of the pretest scores.

Both the males and females showed considerable increases in autonomy and play in the posttest. The males indicated a decrease in impulsiveness on the posttest while the females increased in that characteristic. On the posttest the males showed a decrease in nurturance (giving sympathy) while the females showed no change. Males increased more in sentience, and females on the posttest showed less

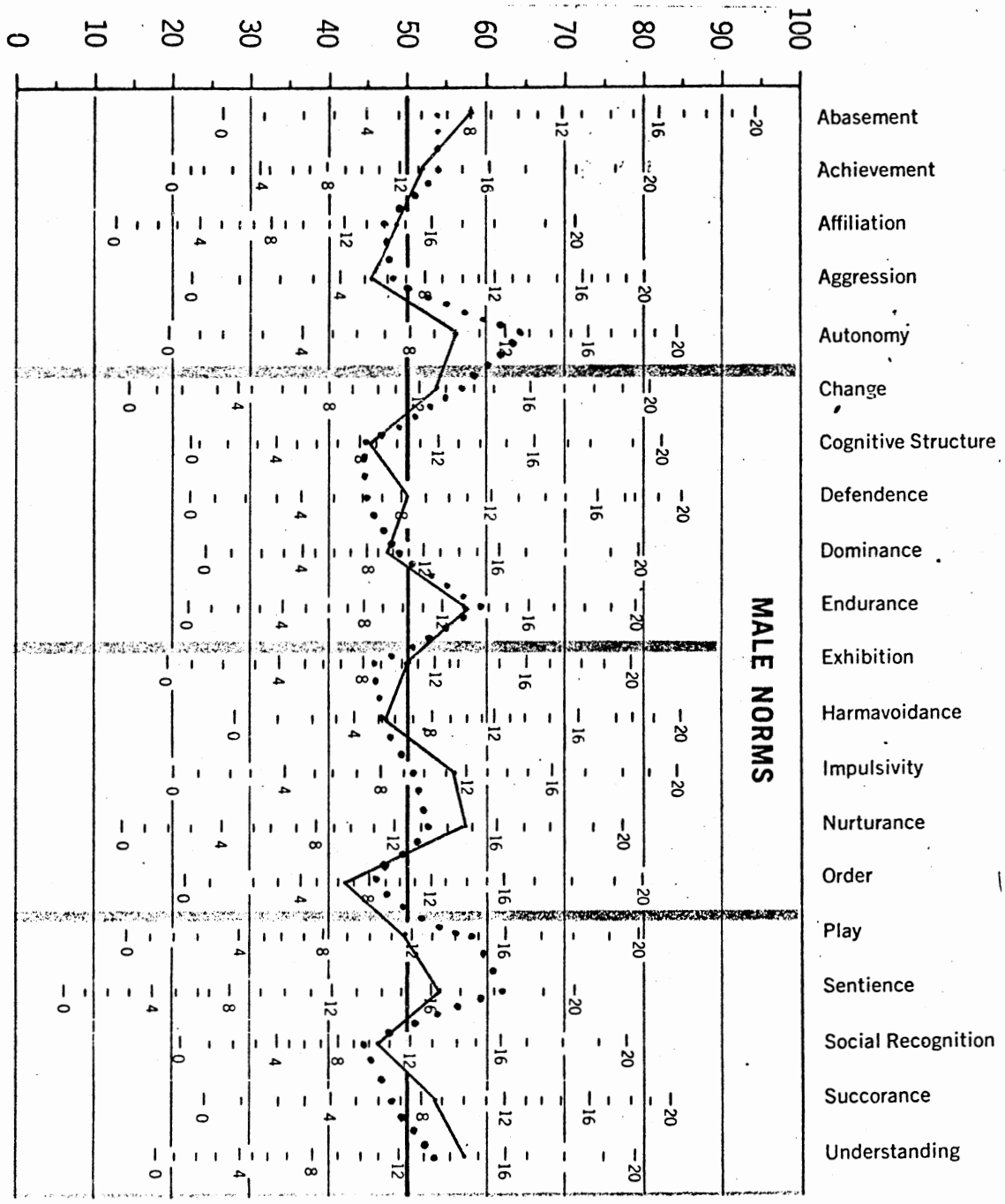


Figure 5. T-Score Comparison of Males on Pretest and Posttest

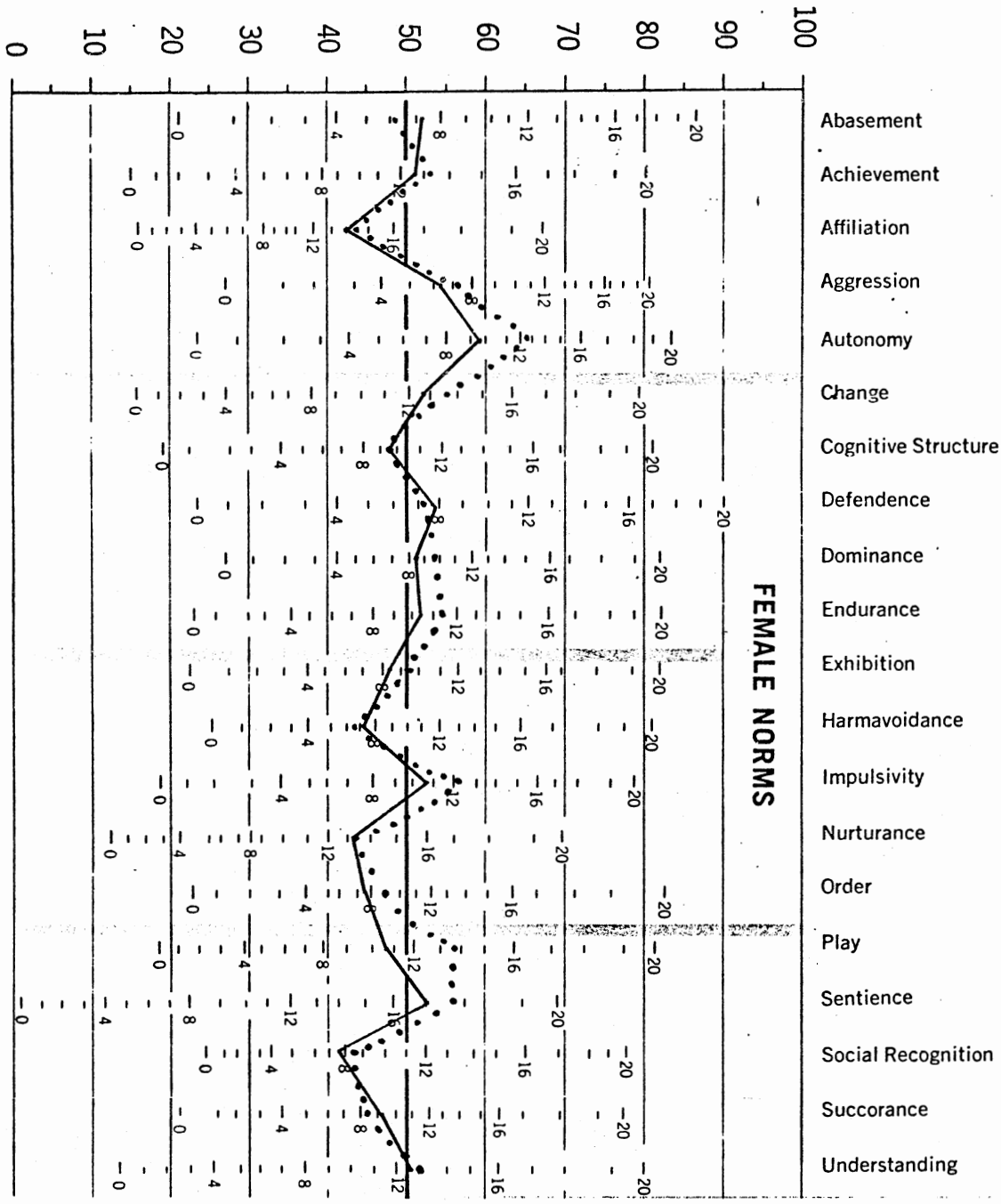


Figure 6. T-Score Comparison of Females on Pretest and Posttest

interest in social recognition, succorance and understanding than did the women as compared to pretest scores.

Table III reveals that men (in general) sensed greater control on both pretest and posttest results. In the area of work orientation, men on the posttest were more likely to persist while women aspired more toward accomplishing difficult tasks and were more likely to do things 'just for fun'.

In the area of interpersonal relationships as revealed by the posttest results, women were more sociable than men. Men, on the other hand, were less aggressive than women and less suspicious of other people.

Table IV showed the t-test results between the pretest and posttest mean difference of the items on the PRF and the I-E Scale for the combined male and female subjects of this study. The t-test was used to determine if the differences in the means from the pretest and posttest was of sufficient size to be significant at the .05 percent level of confidence or whether the difference was of a size that could have occurred by chance. After the t-test was obtained a table for determining t-values significant at the 5% level was consulted.[10] The degrees of freedom in this case were 36 and the t-value necessary to obtain significance at the 5% level of confidence was 2.03.

Table IV indicates significant difference for the combined group in abasement, autonomy, defendence, endurance, order, play, sentience and succorance. The indication was that the group moved away from abasement (self-belittling and self-effacing), defendence (being suspicious that

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[10]Henry E. Garrett, Statistics In Psychology and Education (New York, 1953), p. 427.

TABLE III

HIGH AND LOW SCORES BETWEEN MALE AND FEMALE IN EACH OF THE PERSONALITY TRAITS UNDER CONTROL, WORK ORIENTATION AND INTERPERSONAL ORIENTATION (N = 37)

	High Score		Low Score	
	Posttest	Pretest	Posttest	Pretest
Control				
Impulsivity	F	M	M	F
Change	F/M	F/M	F/M	F/M
Harmavoidance	M	M	F	F
Order	M	M	F	F
Cognitive Structure	M	M	F	F
I-E Scale	M	M	F	F
Work Orientation				
Achievement	F	M	M	F
Endurance	M	M	F	F
Play	F	F	M	M
Interpersonal Orientation				
Affiliation	F	M	M	F
Nurturance	F	M	M	F
Exhibition	F	M	M	F
Social Recognition	F	M	M	F
Aggression	M	M	F	F
Defendence	M	F	F	M

M = Male; F = Female

TABLE IV

PRETEST AND POSTTEST t-TEST RESULTS OF I-E SCALE AND PRF ITEMS
(N = 37)
Combined Male and Female Subjects

Items	Mean Difference	Standard Deviation	t
Abasement	-1.5	2.31	-3.97*
Achievement	-0.16	2.89	-0.34
Affiliation	-0.05	3.73	-0.08
Aggression	0.97	3.71	1.59
Autonomy	2.94	3.09	5.81*
Change	0.78	2.52	1.88
Cognitive Structure	-0.18	3.14	-0.36
Defendence	-1.10	2.84	-2.36*
Dominance	0.67	3.31	1.23
Endurance	1.81	4.01	2.74*
Exhibition	-0.18	2.97	-0.38
Harmavoidance	-0.35	3.42	-0.62
Impulsivity	-0.10	3.65	-0.17
Nurturance	-0.72	3.67	-1.20
Order	1.91	3.17	3.67*
Play	2.97	3.29	5.48*
Sentience	1.18	3.50	2.06*
Social Recognition	-0.54	4.44	-0.73
Succorance	-1.40	2.85	-2.99*
Understanding	-0.40	3.44	-0.71
I-E Scale	-0.67	3.13	-1.31

*Notice significant difference at .05 level of confidence.

others mean one harm) and succorance (seeking sympathy and protection from others). The combined group, after the wilderness outing, moved toward autonomy (breaking away from restraints and restrictions; unattached), endurance (persistence), order (concern for organization and neatness in personal effects and surroundings), play (doing things "just for fun") and sentience (keeness of physical sensations of sight, sound, smell, taste and the way things feel).

Tables V and VI showed t-test results of the items for the PRF and I-E Scale between the pretest and posttest for males and females, respectively.

Table V for males showed significant difference following the camping program in autonomy, defendence, endurance, exhibition, impulsivity, nurturance, order, play, social recognition, succorance and internal control. Of the above, the male subjects moved away from defendence (suspicious of others), exhibition (desirous to be the center of attention), impulsivity (doing things on the 'spur of the moment'), nurturance (giving of sympathy to others) and external control. The male population of this study moved toward autonomy (freedom from restraints, restrictions and enjoyment of being unattached), endurance (persistence), order (concern for neatness and organization of personal effects and surroundings) and play (doing things 'just for fun').

Table VI indicated that females were somewhat less flexible than males in personality characteristics. This Table showed females indicating significant differences in four characteristics as compared to the males having changed significantly in eleven personality characteristics.

After the outing, females had changed significantly in abasement, autonomy, order and play. They moved away from abasement only and toward autonomy (freedom from restraints and enjoyment in being unattached),

TABLE V

t-TEST RESULTS OF I-E SCALE AND PRF ITEMS
(N = 16)
Male Pretest and Posttest Results

Items	Mean Difference	Standard Deviation	t
Abasement	-1.31	2.36	-1.83
Achievement	-0.43	3.20	-0.54
Affiliation	-0.56	2.22	-1.01
Aggression	1.31	3.57	1.46
Autonomy	2.68	3.19	3.36*
Change	0.81	3.18	1.01
Cognitive Structure	-0.43	2.75	-0.63
Defendence	-2.06	2.86	-2.88*
Dominance	0.50	3.98	0.50
Endurance	3.50	4.27	3.27*
Exhibition	-1.81	2.97	-2.43*
Harmavoidance	-0.12	1.70	-0.29
Impulsivity	-1.93	2.79	-2.77*
Nurturance	-1.81	2.78	-2.60*
Order	1.81	3.08	2.35*
Play	2.93	3.08	3.80*
Sentience	1.62	4.08	1.59
Social Recognition	-2.56	3.52	-2.91*
Succorance	-2.18	2.40	-3.64*
Understanding	-1.00	2.58	-1.54
I-E Scale	-1.93	3.39	-2.28*

*Notice significant difference at .05 level of confidence.

TABLE VI

t-TEST RESULTS OF I-E SCALE AND PRF ITEMS
(N = 21)
Female Pretest and Posttest Results

Items	Mean Difference	Standard Deviation	t
Abasement	-1.66	1.85	-4.12*
Achievement	0.04	2.59	0.08
Affiliation	0.33	4.58	0.33
Aggression	0.71	3.88	0.84
Autonomy	3.14	3.05	4.71*
Change	0.76	1.97	1.77
Cognitive Structure	0.00	4.46	0.00
Defendence	-0.38	2.57	-0.65
Dominance	0.80	2.80	1.32
Endurance	0.52	3.37	0.71
Exhibition	1.04	2.35	2.03
Harmavoidance	-0.52	4.34	-0.55
Impulsivity	1.28	3.67	1.60
Nurturance	0.09	4.10	0.10
Order	2.00	3.31	2.76*
Play	3.00	3.52	3.90*
Sentience	0.85	3.05	1.28
Social Recognition	1.00	4.52	1.01
Succorance	-0.80	3.07	-1.20
Understanding	0.04	3.98	0.05
I-E Scale	0.28	2.51	0.50

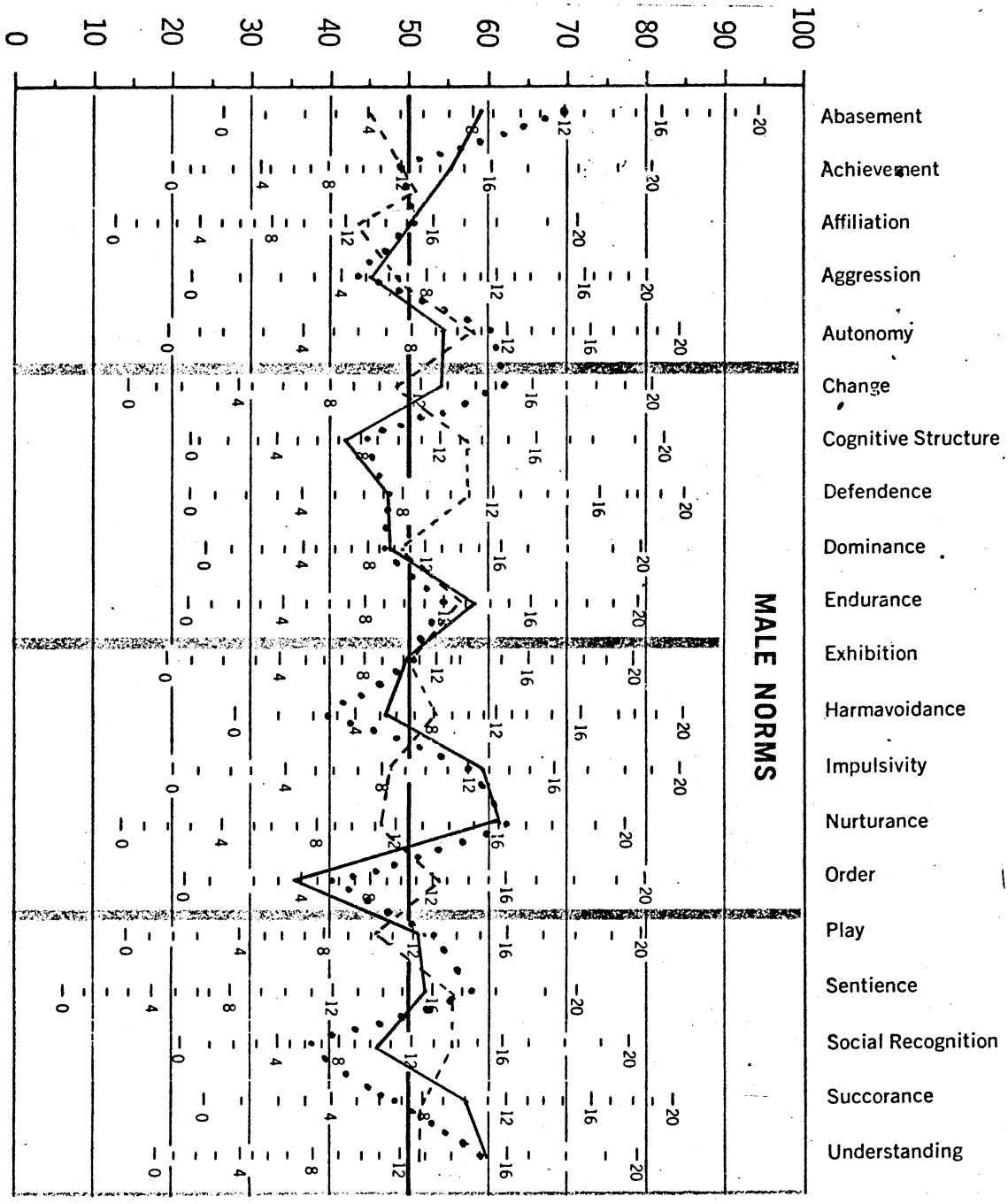
*Notice significant difference at .05 level of confidence.

order (desirous of organization and neatness in personal effects and surroundings) and play (doing things 'just for fun').

Considered also was the response subjects gave on the tests at various educational levels. Figure 7 shows the pretest T-scores for males at various educational levels (high school graduate, college student and college graduate). High school graduates showed the highest degree of abasement while the college graduate was lowest of the three levels in this characteristic. The college student indicated a higher degree of achievement characteristic than did the high school graduates or college graduates. Affiliation scores were lower for college graduates than the other two educational levels. High school students revealed greater ability to change, avoided harmful situations more and had the least desire to be held in high social recognition as compared to the other educational levels.

College students displayed less autonomy, cognitive structure (dislike of ambiguity or uncertainty) and order (concern with personal environmental neatness and organization). College males also scored high in succorance (frequently seeks sympathy, protection, love or advice of others).

College graduates (male) scored higher in the pretest in cognitive structure and defendence. They had the least liking for ambiguity and greater suspicion of other people. This group also tended to avoid harmful situations to a greater extent than the other educational levels. College graduates were less impulsive and sympathic (nurturance) than either the high school graduates or college students. The male college graduate was much higher in order and social recognition than the other two educational levels on the pretest.



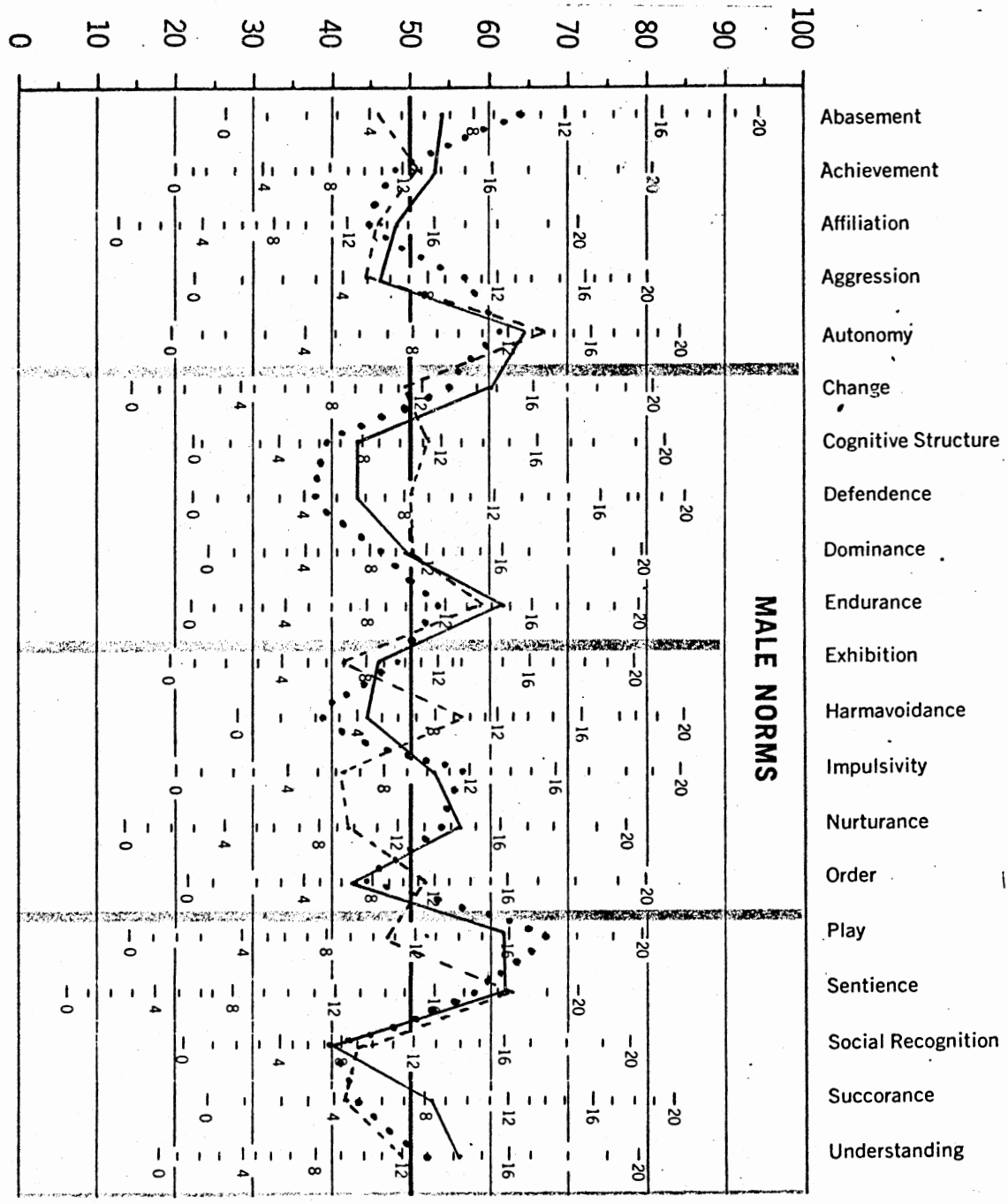
. . . . . High School (N = 3)
———— College Students (N = 9)
--------- College Graduates (N = 4)

Figure 7. Pretest T-Scores for Males at Various Educational Levels

On the posttest T-score comparisons for males at the various educational levels (Figure 8), high school students scored higher in abasement, aggression and play (doing things 'just for fun') than the other two groups. There was some loss in abasement and affiliation among high school graduates as revealed by the posttest. This educaional group experienced a decrease in self-belittling and humility as well as less enjoyment of being with people in general. The greatest rise was in the sense of being easily annoyed and aggressive with the greatest decrease over the pretest in cognitive structure and defendence. In other words, the male high school graduate was less concerned about ambiguity and less suspicious of others after the wilderness outing. The posttest scores revealed the high school graduate to be less sympathetic, had greater interest in personal organization and an increased sense of doing things 'just for fun' than the pretest score. The posttest scores also showed the high school graduate to be less interested in seeking sympathy from others and also slightly less understanding.

College student males in the posttest (Figure 8) scored higher in change, endurance, succorance and understanding than the other educational levels. They scored lowest of the three levels of education in order.

As compared to the pretest T-scores, the male college student showed increases in autonomy, change, endurance, order, play and sentience. After the wilderness outing the college student had a greater sense of freedom, a greater liking for new experiences, more persistence and a keener sense of environmental surrounding. He also had a greater desire for neatness and organization personally and in the surroundings. There was a greater sense of 'doing things just for fun'.



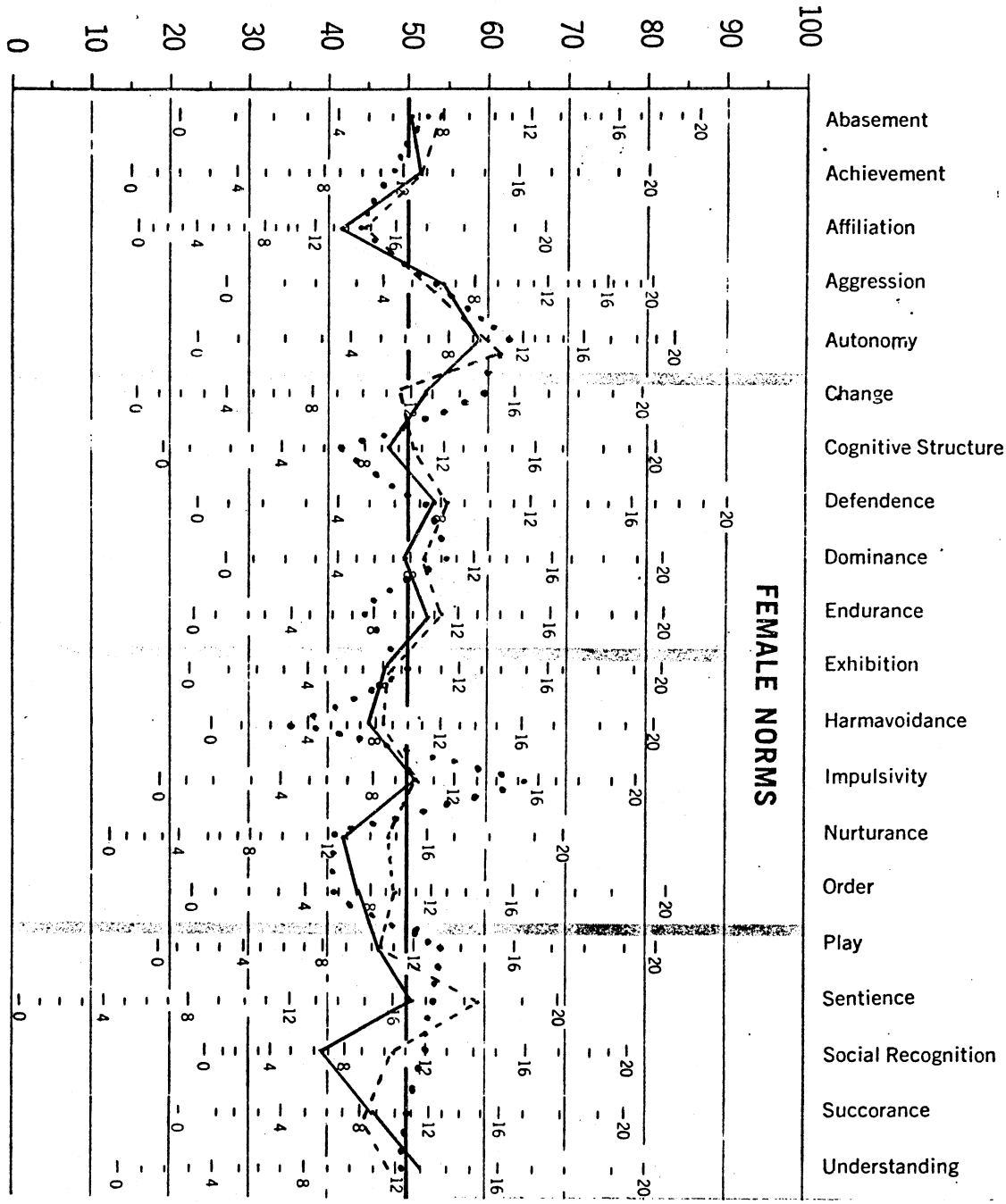
. . . . . High School (N = 3)
———— College Students (N = 9
---------- College Graduates (N = 4)

Figure 8. Posttest T-Scores for Males at Various Educational Levels

The male college graduate posttest T-scores (Figure 8) revealed a continuation of high scores in cognitive structure, defendence, harmavoidance and order. The position among the educational levels had not changed in these areas from the pretest. The college graduate scored lower than the other educational levels in abasement, aggression, impulsivity, nurturance and play. Following the wilderness outing, the college graduate showed a higher T-score in autonomy over the other educational groups.

Comparison of the pretest and posttest T-scores for the male college graduate showed a large increase in autonomy and sentience. Thus, the male college graduates had a greater sense of freedom from restraint and a greater sensitivity to his physical sensations. The male college graduate had also increased slightly in endurance and harmavoidance over the pretest. Areas of decrease as revealed by the posttest were in cognitive structure, defendence, exhibition, impulsivity, nurturance, social recognition and succorance. Upon the return from the wilderness trip the male college graduate was less threatened by ambiguity, less suspicious of others and was less desirous to be the center of attention. He was also more deliberate, less sympathetic, less desirous to be held in high esteem and less seeking for sympathy from others. The male college graduate was also less aggressive after the wilderness trip.

Figure 9 shows the pretest T-scores for women at various educational levels (high school graduate, college student and college graduate). The greatest variation is evidenced by the high school graduates. This group was highest in autonomy, change, dominance, impulsivity, play, social recognition and succorance. They were lower than the



. . . . . High School (N = 3)
———— College Students (N = 13)
--------- College Graduates (N = 5)

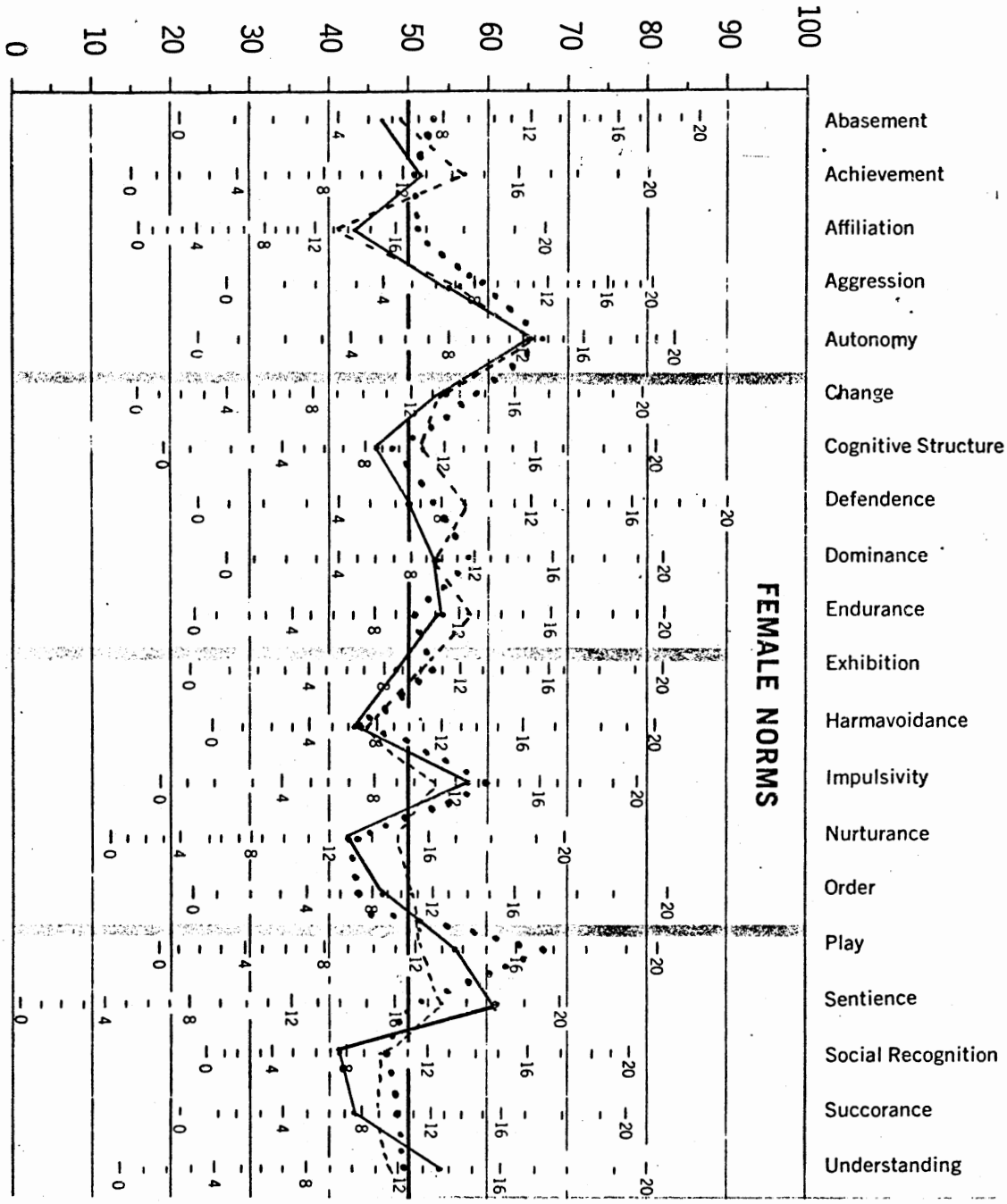
Figure 9. Pretest T-Scores for Females at Various Educational Levels

female college student and college graduates in cognitive structure, endurance, harmavoidance, nurturance and order. The orientation of this group with the stated high and low areas of personality indicated a sense of control over the other two women's groups. They were more oriented toward play or doing things 'just for fun' and have a greater sense of freedom and dominance.

The college student and college graduate females were closely related in personality characteristics as measured by the PRF on the pretest. They were basically different in the areas of order, play, sentience, social recognition and understanding. The female college graduate was more willing to sympathize with others, had a greater keenness of physical sensations and desired more esteem from others. On the other hand, the female college student revealed more understanding and sought less sympathy from others.

Figure 10 shows the female posttest T-scores on the PRF. This comparison revealed a closer uniformity than the pretest T-scores. Although there were differences, these differences were not as pronounced. The high school graduates showed increased T-scores over the other two educational groups in abasement, affiliation, dominance, impulsivity, and play. They were more humble, enjoyed being with people and attempted to control others more than the other two groups. The female high school graduates were also more oriented toward play and impulsiveness.

The changes after the wilderness trip for the high school graduate females can be seen by comparing Figures 9 and 10. This educational group was more pronounced in every area but sentience, social recognition, succorance and impulsivity. The greatest change occurred in play



. . . . . High School (N = 3)
———— College Students (N = 13)
--------- College Graduates (N - 5)

Figure 10. Posttest T-Scores for Females at Various Educational Levels

with the high school females increasing by four points. After the outing, this group scored higher in achievement, aggression, affiliation, autonomy, cognitive structure and endurance. They also showed a slight increase in T-scores in defendence, dominance, exhibition, nurturance and order.

The female college student was more physically sensitive to her environment than the other two educational groups on the posttest (Figure 10). This group scored less in cognitive structure, social recognition and succorance than the other two groups. The changes in comparison of the pretest and posttest of college women was greatest in autonomy, impulsivity, play and sentience. The women sensed a greater freedom from restraint, were less deliberate, more apt to do things 'just for fun' and more attuned to physical sensations.

The college graduate females were higher in T-scores than the other two educational groups in achievement, cognitive structure, defendence, endurance, nurturance and order. This group was lower in play and understanding than the high school graduate and college student females. Upon return from the expedition the female college graduate appeared to be freer from restraints, more prone to stay with difficult tasks and persist. She also had a greater liking for new and different experiences and more prone to influence and direct others. She was more of an exhibitionist, more impulsive and more likely to do things 'just for fun'. The female college graduate also was slightly more desirous for organization in her personal effects and environmental surroundings on her return from the wilderness.

Table VII shows the mean scores on the pretest and posttest of the I-E Scales for male and female at various educational levels. The items

TABLE VII

I-E SCALE MEANS ON THE POSTTEST AND PRETEST FOR BOTH MALE AND FEMALE EDUCATIONAL LEVELS

	Male						Female					
	High School Graduate		College Student		College Graduate		High School Graduate		College Student		College Graduate	
	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test
I-E Scale	8	7.3	6.1	9.3	9.8	10.8	11.7	12	10.9	11	12.6	11
	N = 3		N = 9		N = 4		N = 3		N = 13		N = 5	

on this scale were externally oriented. That is, the individual scoring high on this scale usually considered himself/herself to have little control over the circumstances of his/her life.

Table VII showed the greatest change occurred in the college male population on the posttest. A group that already revealed internal control became more so after the expedition. Actually Table VII revealed that males at all educational levels think thay could have some influence on circumstances and situations that confront them. The college students and high school graduates believed this somewhat more than the college graduates.

Table VII also shows that the college females feel they can influence situations more so than the female high school graduates and college graduates. Females were more externally oriented and males were more internally oriented.

Table VIII reveals the response of the combined male and female educational levels to the specific personality characteristics considered in the areas of control, work orientation and interpersonal orientation. The high and low scores were recorded from both the pretest and posttest results. The table indicates that high school graduates in general had the greatest sense of control, while the college graduates indicated the least sense of control. After the wilderness outing the college students indicated a greater degree of difference in change and internal control than did the high school graduate. The college student was open to new experiences (change) and sensed greater personal control over his environment (I-E Scale) than did the high school student.

In the work orientation area of personality the college graduate clearly indicated greater persistence (endurance), aspiring to

TABLE VIII

EDUCATIONAL LEVELS SHOWING HIGH AND LOW SCORES ON THE PRETEST AND POSTTEST IN CONTROL, WORK ORIENTATION AND INTERPERSONAL ORIENTATION
(N = 37)

	High Scores		Low Scores	
	Posttest	Pretest	Posttest	Pretest
Control				
Impulsivity	H.S.G.	H.S.G.	C.S.	C.G.
Change	C.S.	H.S.G.	H.S.G.	C.G.
Harmavoidance	H.S.G.	H.S.G.	C.G.	C.G.
Order	H.S.G.	H.S.G./ C.S.	C.G.	C.G.
Cognitive Structure	H.S.G.	H.S.G.	C.G.	C.G.
I-E Scale	C.S.	H.S.G.	C.G.	C.G.
Work Orientation				
Achievement	C.G.	C.G.	H.S.G.	H.S.G.
Endurance	C.G.	C.G.	H.S.G.	H.S.G.
Play	C.G.	C.G.	H.S.G.	H.S.G.
Interpersonal Orientation				
Affiliation	H.S.G.	H.S.G.	C.G.	C.G.
Nurturance	H.S.G.	H.S.G.	C.G.	C.G.
Exhibition	H.S.G.	H.S.G.	C.G.	C.G.
Social Recognition	C.G.	C.G.	C.S.	H.S.G.
Aggression	C.S./C.G.	H.S.G	H.S.G.	C.G.
Defendence	H.S.G.	H.S.G.	C.G.	C.G.

H.S.G. = High School Graduate; C.S. = College Student; C.G. = College Graduate

accomplish difficult tasks (achievement) and spent less time doing things 'just for fun' (play) than the high school graduates and college students. The high school students, likewise, clearly indicated less of a desire toward work orientation than the other two groups.

In the area of interpersonal orientation the high school graduate was more inclined toward socialization than either of the other two educational levels on both the pretest and posttest. The difference was displayed in social recognition with the college graduate more interested in being held in high esteem by acquaintances. Also on the posttest high scores, the college student and college graduate were less aggressive than were the high school graduates.

Table IX displays the mean scores for the subjects at various educational levels in control, work orientation and interpersonal orientation. It should be remembered that each of the areas of personality characteristics is composed of several traits, some of which are bipolar to others. The dash line in Table IX indicates where that bipolar separation occurred in each general area. Thus, low scores in personality traits below that line were considered to be more favorable to positive control or work orientation or interpersonal orientation. In other words, the best score in those bipolar areas below the line were actually the lowest scores, with high scores in those traits the poorest. This fact was borne out in Table VIII.

Table X presents the age levels and the mean scores on the PRF and I-E Scale for both the pretest and posttest. As stated above, the areas of control, work orientation (achievement) and interpersonal orientation (affiliation) consist of various personality scales on the PRF. The scales under each area contained characteristics that revealed a

TABLE IX

MEAN SCORES OF PERSONALITY CHARACTERISTICS OF CONTROL WORK ORIENTATION AND INTERPERSONAL ORIENTATION FOR VARIOUS EDUCATIONAL LEVELS

	High School Graduates		College Students		College Graduates	
	Posttest	Pretest	Posttest	Pretest	Posttest	Pretest
Control						
Impulsivity	12.5	13.6	11.4	11.1	12.1	9.8
Change	9.0	15.02	14.0	12.7	13.6	11.3
Harmavoidance	4.5	2.8	5.6	6.7	8.2	8.2
Order	7.3	5.7	8.0	5.7	11.0	10.9
Cognitive Structure	8.0	7.7	8.6	8.5	13.6	11.8
I-E Scale	9.8	9.7	9.0	10.3	11.3	10.9
Work Orientation						
Achievement	12.2	11.8	13.2	13.5	13.6	13.7
Endurance	10.8	9.8	12.6	11.8	12.9	12.0
Play	16.8	13.0	14.6	11.1	11.5	10.3
Interpersonal Orientation						
Affiliation	14.8	15.0	14.2	14.2	13.6	13.9
Nurturance	13.5	14.3	13.3	14.1	11.0	13.1
Exhibition	10.2	10.0	8.9	9.0	8.7	9.3
Social Recognition	8.7	7.0	7.8	8.1	9.4	11.8
Aggression	9.2	5.3	6.2	5.8	6.2	6.7
Defendence	6.0	7.3	6.2	7.5	6.7	9.4

High School = 6; College Students = 22; College Graduates = 9

TABLE X

MEAN SCORES OF PERSONALITY CHARACTERISTICS OF CONTROL, WORK ORIENTATION AND INTERPERSONAL ORIENTATION FOR VARIOUS AGE GROUPS

	18 yr.		19 yr.		20 yr.		21 yr.		23-24 yr.		25-31 yr.	
	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test	Post-Test	Pre-Test
Control												
Impulsivity	13.3	13.3	6.1	10.6	11.2	11.6	12	10.6	10.2	9.6	7.3	8.8
Change	14.8	15.3	14.6	8.7	13	14	13.4	11.6	13	11.8	11.5	10.8
Harmavoidance	5.5	3.3	4.6	5.1	4.9	7.3	6.8	6.4	7.0	8.0	9.8	8.5
Order	5.8	3.3	7.7	4.4	8.4	6.9	7.4	5.6	11.6	10.8	10.3	11.0
Cognitive Structure	9.0	8.5	8.9	12.4	10.0	7.6	8.4	7.8	12.6	11.4	9.3	12.5
I-E Scale	11.5	11.5	9.0	11.8	9.3	9.5	8.4	7.6	12.0	11.2	10.5	10.5
Work Orientation												
Achievement	12.3	12.0	13	14.1	12.4	13.3	15.0	13.6	14.8	12.6	11.3	12.5
Endurance	10.5	8.8	12.9	12.7	12.2	12.0	13.8	11.8	13.6	11.6	12.0	12.5
Play	17.0	12.3	13.4	12.1	15.4	11.8	14.6	9.4	12.4	10.4	10.5	10.3
Interpersonal Orientation												
Affiliation	14.5	15.3	14.0	13.8	14.5	14.1	14.4	15.0	14.0	15.2	13.0	12.3
Nurturance	12.8	13.8	14.3	13.8	14.2	14.3	13.4	15.0	13.4	14	10.5	12.0
Exhibition	9.5	8.3	8.4	9.1	10.4	9.2	7.4	7.8	9.4	8.6	7.8	10.3
Social Recognition	8.3	6.8	8.6	8.7	7.7	8.0	7.4	7.4	10.6	12	8.0	11.0
Aggression	11.3	6.3	6.2	5.7	5.6	5.2	8.4	6.4	7.2	9.4	7.0	5.8
Defendence	6.3	8.3	5.2	6.9	6.2	6.6	7.6	9.43	8.8	9.4	8.5	9.5

18 year olds = 4; 19 year olds = 9; 20 year olds = 10; 21 year olds = 5; 23-24 year olds = 5; 25-31 year olds = 4

direction toward the area and bipolar direction. For instance, in the area of control as shown in Table X a person liking new and different experiences (change) will likely be one who is willing to take risks (harmavoidance). Therefore, one would show a higher score in change than in harmavoidance. On the other hand, a person who did not enjoy new exciting activities would likely score higher in harmavoidance than in change. The bipolar areas are indicated by a broken line. Table X shows a high degree of control, work orientation and interpersonal orientation already present with the subjects enrolled in the NOLS wilderness semester course.

Table XI reveals the age groups which scored high and low on the pretest and posttest in each of the personality areas under consideration. The ages 18 through 21 showed the greatest sense of control among the subjects both before and following the wilderness outing. Ages 23 through 31 displayed the least sense of control among the subjects both before and after the outing according to the mean scores. Exceptions to this were in the personality traits of impulsivity on the posttest low score and change and internal control on the pretest low scores. Here the 19 year old group had the lowest scores. In general the younger age group showed a greater sense of control over situations confronting them than the older age groups.

In the area of work orientation the youngest age group (18 year olds) had the least disposition toward work. The exception was the 25 through 31 age group which displayed low posttest scores in achievement. The age group between 21 and 31 were highest in work orientation on the posttest. This age group was more attuned to persistence in work.

The interpersonal orientation area of personality showed the older

TABLE XI

AGE GROUPS REVEALING HIGH AND LOW MEAN SCORES IN EACH OF THE PERSONALITY TRAITS UNDER CONTROL, WORK ORIENTATION AND INTERPERSONAL ORIENTATION
(n = 37)

	High Scores		Low Scores	
	Posttest	Pretest	Posttest	Pretest
Control				
Impulsivity	18	18	19	25-31
Change	18	18	25-31	19
Harmavoidance	19	18	25-31	25-31
Order	18	18	23-24	25-31
Cognitive Structure	21	20	23-24	25-31
I-E Scale	21	21	23-24	19
Work Orientation				
Achievement	21	19	25-31	18
Endurance	23-24	19	18	18
Play	25-31	21	18	18
Interpersonal Orientation				
Affiliation	18 20	18	25-31	25-31
Nurturance	19	21	25-31	25-31
Exhibition	20	25-31	21	21
Social Recognition	23-24	23-24	21	21
Aggression	20	20	18	23-24
Defendence	20	20	23-24	25-31

Number indicates age.

age group of 25 through 31 lowest in affiliation and nurturance on the posttest and pretest scores. They least enjoyed being with friends and socialization following the outing. Those most sociable were the younger age group between 18 and 20 years old. The exception to this was the 23 through 24 age group which scored high in social recognition (the desire to be held in esteem by acquaintances).

Discussion

This study hypothesized no change in the personality characteristics of control, work orientation and interpersonal orientation in individuals following a 95-five day wilderness excursion. The locus of control scale showed a significant change for male subjects. Women indicated virtually no change in their sense of control following the outing. The combined group as a whole moved toward internal control following the expedition, but this change was not significant.

On the PRF items under control, male subjects moved significantly away from impulsivity. There was more deliberation before these subjects spoke or expressed their feelings or wishes. Male subjects also showed significant difference in order following the excursion. They became more concerned about personal and environmental neatness and were more organized. The other characteristics under control (change, harm-avoidance and cognitive structure) did not differ following the camping program.

For females in the area of control as revealed by the PRF, there was significant difference in the personality characteristic of order. Women, like men, became more conscious of personal and environmental neatness and organization.

The experimental group as a whole revealed significant change in order. All other characteristics were not significant.

Under work orientation, male subjects showed a significant difference in endurance and play but not in achievement. These subjects moved significantly toward persevering and persistence in work habits and toward spending time in amusements and doing things 'just for fun'. There was virtually no change in achievement for this group following the outing.

Women also showed significant change in play following the expedition. They too indicated the desire to spend more time in amusements and doing things 'just for fun'.

Scores of the combined group indicated a significant difference in persistence in work and increased participation in amusements following the excursion. There was no difference in achievement (aspiring to accomplish difficult tasks) on return from the wilderness.

Interpersonal orientation characteristics of defendence, nurturance, exhibition and social recognition were significantly moved away from by the male population of this study. Thus, following the expedition, male subjects were significantly less suspicious of others, less desirous to give sympathy and comfort to others, less concerned about being the center of attention and cared less about what others thought about them.

Women's scores, on the other hand, indicated no significant difference in any of the personality traits found under interpersonal orientation. Likewise, the combined group displayed no significant difference in this area except in defendence. As a whole, the group was significantly less suspicious of others following the wilderness excursion.

The male subjects differed significantly in all areas of personality characteristics considered in this study. They showed significant difference in internal control, impulsivity and order under the control area. They showed significant differences in endurance and play of the work orientation area and in all but two personality traits of the interpersonal orientation area.

The combined group score indicated a significant difference in the control and work orientation area; but failed to show significant change in the area of interpersonal orientation.

The male subjects of this study believed they had significantly more control over their environment following the wilderness outing. The men responded in a significantly more deliberate and organized manner. Their ability to handle stress effectively was evidenced by this positive difference. Averill[3] stated that behavioral control is the ability to take direct action on the environment. One who is able to respond in such a manner is under less stress.[4]

Female subjects showed significant control in their ability to organize personal effects and environmental surroundings.

Males and females of this study had a greater degree of control than the norm groups on both the pretest and posttest as revealed by T-score comparison. This is to say that, in the beginning, the wilderness group indicated more personal control than did the norm group of college

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[3]James R. Averill, "Personal Control Over Aversive Stimuli And Its Relationship To Stress," Psychological Bulletin, Vol. 80 (1973), pp. 286-303.

[4]Lucia A. Gilbert, "Situational Factors And The Relationship Between Locus of Control and Psychological Adjustment," Journal of Counseling Psychology, Vol. 23, No. 4 (1976), pp. 302-309.

students in Jackson's study. The wilderness group was therefore more open to new experiences, more uninhibited and took greater risks than the norm group. They were also less threatened by ambiguity and less effected by clutter. The ability to cope with ambiguity as stated by Lazarus[5] indicated a group already possessing a healthy sense of control and ability to cope with life events.

As a whole, the wilderness group made a significant change in the personality traits of endurance and play associated with the work orientation area. There was no significant difference between the pretest and posttest in achievement. Indication is that men in this study persist significantly longer in work than do women and enjoy spending as much time as females in amusements.

The fact of the significant difference in endurance for the group as a whole indicated that subjects persisted longer in tasks. This is indicative of Type "A" individuals who consciously try to cope with stressful situations.[6] Endurance was described by Kobasa[7] as an important trait in effectively coping under stress.

Although the wilderness camping group was higher in mean scores in achievement than the norm group, this difference was slight. The wilderness program likewise made no difference in this personality trait among the group. Beck mentions that a de-emphasis on achievement and

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[5]Richard S. Lazarus, Psychological Stress and the Coping Process (New York, 1966), pp. 85-119.

[6]Mark S. Pitter and B. Kent Houston, "Response to Stress, Cognitive Coping Strategies and the Type 'A' Behavior Pattern," Journal Of Personality and Social Psychology, Vol. 39, No. 1 (1980), pp. 147-157.

[7]Suzanne Kobasa, "Stressful Life Events, Personality and Health: An Inquiry Into Hardiness," Journal of Personality and Social Psychology, Vol. 37, No. 1 (1979), pp. 1-11.

self-worth as being indelibly bound leads to effective coping.[8] Not to be overlooked in association with achievement is the freedom from restraints apparent in the significant difference in autonomy the wilderness group showed following the outing. Perhaps the subjects of this study were ones not particularly bound by the traditional American 'work' ethic. Certainly the integrated nature of personality traits as expressed by Hurlock[9] would lead to the idea of such an influence between achievement and autonomy.

The male subjects of this study revealed significantly less socialization following the outing. One may have suspected both the male and female groups to be more interpersonally orientated following the outing since many of the program activities required a dependence upon each other. For instance, rapelling, rock climbing, trail blazing, caving and the like would seem to pull people together. Yet, the male population of this group clearly became significantly less socialized.

Literature offers suggestions. For instance, Teichman[10] suggested that high anxiety people, when highly aroused, rejected affiliation. Dembroskie and MacDougall[11] revealed that less agressive people appeared

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[8]"What To Do When You're Under Stress," U. S. News and World Report, Vol. 75 (September 24, 1973), pp. 48-52.

[9]Elizabeth B. Hurlock, Personality Development (New York, 1974), pp. 77-78.

[10]Yona Teichman, "Predisposition For Anxiety And Affiliation," Journal of Personality and Social Psychology, Vol. 29 (March, 1974), pp. 405-410.

[11] Theodore M. Dembroskie and James M. MacDougall, "Stress Effects On Affiliation Preferences Among Subjects Possessing The Type 'A' Coronary-Prone Behavior Pattern," Journal Of Personality And Social Psychology, Vol. 36, No. 1 (1978), pp. 23-33.

to be less socially oriented; and LaRocco, House and French[12] pointed out the fact that support from significant others is more helpful than support from just anyone. The questions were apparent. Were the male subjects of this study high anxiety subjects and was the wilderness program of a sufficient magnitude to create high arousal? Also, if colleagues offer the best affiliate support in stressful conditions; was the camping program stressful enough to create close social relations?

No test was given to determine the anxiety level of subjects in this study, nor were attempts made to determine the stressfulness of the wilderness program upon individual subjects. Also, no type of instrument was administered which pointed to the degree of expertise subjects may have in various skills and techniques taught during the course. The greater the skill level of individuals, the possibility of less stress arousal, therefore low need for affiliation. Kaplan,[13] for instance, found that subjects in her study who opted for the outdoor experience were already skilled in some outdoor techniques. However, Kaplan's group of high school students showed a greater concern for others than did her control group, unlike the male population of this study.

Figures 2 and 3 indicate that the male population of this study was lower in aggression than the norm group. It is possible that, in low aggression males, there may indeed be a low need for affiliation.

This possiblity of low aggressive males needing low affiliate needs seemed even more plausible when taking into consideration the female

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[12]James M. LaRocco, James S. House and John R. P. French, Jr., "Social Support, Occupational Stress and Health", Journal of Health and Social Behavior, Vol. 21 (September, 1980), pp. 202-218.

[13]Rachel Kaplan, "Some Psychological Benefits Of An Outdoor Challenge Program", Environment And Behavior, Vol. 6 (March, 1974), pp. 101-116.

subjects and their interpersonal orientation scores. This group of women showed greater social relations and were also more aggressive than the male population of this study. This is again in agreement with Dembroski and MacDougall[14] whose study revealed that agressive people appear more affiliate than the less aggressive.

Females of this study were more oriented toward social relations than were males. Also, for males and the combined wilderness group, a significant difference was indicated away from suspicion of others.

Females of this experiment group indicated less socialization than the norm group in the pretest. This held true as well on the posttest. Males of the experiment group scored slightly higher in socialization patterns than the norm group on the pretest. On the posttest, however, the experiment group showed large erratic differences away from socialization as compared to the norm group.

In general, a slightly greater degree of homogeneity occurred between males and females in personality characteristics upon their return from the wilderness expedition. As already revealed, however males significantly differed from females in their sense of control, work orientation and interpersonal orientation. Males showed a greater sense of control and work orientation than did females. Females were more social than males. Findings supported the study by Stefic and Lorr[15] who found men more dominance oriented and women more nurturance oriented.

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[14]Theodore M. Dembroski and James M. MacDougall, "Stress Effects On Affiliation Preferences Among Subjects Possessing The Type 'A' Coronary-Prone Behavior Pattern", Journal of Personality and Social Psychology, Vol. 36, No. 1 (1978), pp. 23-33.

[15]Edward C. Stefic and Maurice Lorr, "Age and Sex Differences in Personality During Adolescence", Psychological Reports, Vol. 35 (1975), pp. 1123-1126.

Other differences in personality traits which were significant for the combined group at the .05 level of confidence following the wilderness outing were those traits of autonomy, sentience and succorance. Autonomy has already been mentioned in regard to its relation to achievement. However, an additional remark stems from Wheelis'[16] study of personality change. Wheelis stated that insight was an important factor in personality change. Insight comes when one realizes his freedom to choose.

The high degree of change in autonomy which was significant at the .0001 level of confidence indicated that subjects of this study were not bound by people, places or obligations. They appeared to be flexible enough to change, to venture into new areas, to try something new unhampered by traditional restraints and confinements.

The combined wilderness group of both male and females indicated a significant difference at the .05 level of confidence in sentience following the expedition. Subjects on the pretest displayed a greater sensitivity in this personality trait than did the norm group. It seemed reasonable that one choosing to participate in an activity of this nature may indeed be more sensitive to sights, sounds, smells, tastes and the way things feel than the average person. The fact that there was a significant change following the outing was likely due to the conservation techniques[17] and environmental awareness taught and stressed in every section of the NOLS Semester program. It appeared that NOLS

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[16]Allen Wheelis, "How People Change," Commentary, Vol. 47 (1975), pp. 56-66.

[17]The National Outdoor Leadership School Course Outline 1980-1981, (Lander, Wyoming, 1980), pp. 49-55.

objectives in the area of conservation awareness and minimal environmental impact was effectively obtained. Related to this is the significant difference in the personality trait of order following the outing.

Succorance showed a significant decrease following the NOLS semester outing among the subjects. Subjects of the wilderness outing moved significantly away from seeking the protection, support and sympathy of others. This trait appeared linked to the significant decrease in abasement, in that both pointed to a greater sense of self-confidence and self-esteem among the subjects of this study. As self-confidence grew within the individuals, they became less helpless and self-condemning.

These factors of internal control, sense of self-confidence and high work orientation precludes a sense of power. Lazarus[18] pointed to the fact that the balance of power in one's favor makes for more effective coping. To a greater degree the males, and to a less degree the females of this study, indicated a population with personality characteristics capable of handling stress effectively.

The posttest results revealed a greater uniformity among education levels in personality characteristics following their return from the wilderness semester. There were slight differences among educational levels with a greater sense of internal control seen among the high school graduate and college students. In the personality areas of work orientation and interpersonal orientation, the college graduate moved toward work while the high school graduate was more social following the outing.

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[18]Richard S. Lazarus, Psychological Stress and The Coping Process (New York, 1966), pp. 85-119.

One interesting aspect of education (although slight) supported Kifer's[19] study on achievement and self-worth. In his study positive personality characteristics were related to success in academic achievement. In the present study the greatest academic achievers (college graduates) also had a lower T-score (Figure 8) in abasement, which indicated a higher sense of self-esteem. This was true with male subjects only.

Subjects participating in the NOLS wilderness semester course were more risk-taking than the norm population as revealed by T-score comparison. A greater distance occurred between the wilderness group and the norm group following the expedition in this personality characteristic. This pointed to the fact that subjects participating in a program of this nature enjoyed exciting activities and minimized personal safety more than the norm population.

Male subjects of this study were higher than the norm group on the pretest in abasement, achievement, autonomy, change, endurance, harmavoidance, order and social recognition as revealed by T-score comparison. Thus, the men who chose to participate in the wilderness semester program at NOLS as compared to the norm population aspired to difficult tasks, had a greater sense of freedom, liked to do new things, was more sensitive to sights, sounds, tastes and smells and were more curious. He also had less of a sense of self-esteem, sought and gave sympathy and avoided conflict with others. He could handle ambiguity well and did not try to control the lives of others as much as the norm group. He

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[19]Edward Kifer, "Relationships Between Achievement And Personality Characteristics: A Quasi-longitudinal Study," American Educational Research Journal, Vol. 12, No. 2 (Spring, 1975), pp. 191-210.

was also less concerned about personal neatness and was not particularly concerned that others held him in high esteem.

Female subjects of this study differed from the norm group in pretest by scoring higher in autonomy, impulsivity and sentience. They scored lower in affiliation, harmavoidance, nurturance, order, play, social recognition and succorance. Thus, women who chose to participate in the NOLS wilderness semester course were freer from restraints, apt to act on the 'spur of the moment', and were more sensitive to tastes, smells, sights and sounds than the norm group. They were high risk women who were sympathetic toward others and who sought sympathy from others. They were lower than the norm group in socialization. These women had a lower concern for personal neatness than the norm group and spent less time doing things 'just for fun'.

The entire group showed a significant difference from pretest to posttest in the characteristic of self-esteem. This was evidenced by the low significant score on abasement and succorance following the wilderness excursion. The high significance in self-esteem agrees with other studies[20, 21, 22] conducted with wilderness camping groups.

The following outline summarizes the significant results:

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[20]Rachel Kaplan, "Some Psychological Benefits of an Outdoor Challenge Program," Environment and Behavior, Vol. 6 (March, 1974), pp. 101-116.

[21]Edward Clifford and Miriam Cliffor, "Self-Concepts Before and After Survival Training," British Journal of Clinical Psychology, Vol. 6 (1967), pp. 241-248.

[22]J. Payne, A. W. Drummond and M. Lunchi, "Changes in the Self-Concepts of School Leavers who Participated in an Arctic Expedition," British Journal of Educational Psychology, Vol. 40 (June, 1970), pp. 211-216.

A. Combined group differences.

1. Subjects moved away from abasement. They returned from the wilderness less self-critical and humble. They were less likely to expose themselves to situations where they were in inferior positions. They had a greater sense of self-esteem.
2. Subjects moved toward autonomy. They sensed a greater freedom from restraints, confinement and restrictions of any kind upon their return from the wilderness. They felt less of a tie to people, places and obligations.
3. Subjects moved away from defendence. They returned from the wilderness less suspicious of others. Subjects were less easily offended and were able to accept criticism more readily.
4. Subjects moved toward endurance. Upon return from the wilderness subjects were more persistent and unrelenting in work and work habits.
5. Subjects moved toward order. Upon return from the wilderness subjects were more concerned about personal neatness and organization of surroundings. Individuals were more disciplined, consistent and prompt.
6. Subjects moved toward play. Individuals were more attuned to amusements upon return from the wilderness. They were light-hearted and had more of an easy-going attitude toward life.
7. Subjects moved toward sentience. Significantly greater physical sensations of sight, sound, taste, smell and feel

were evidenced among subjects upon their return from the wilderness. They were more sensitive to various forms of experience.

8. Subjects moved away from succorance. They were more self-confident and less seeking of protection and sympathy from others. Individuals indicated greater self-assurance.

B. Sex differences (Male).

1. Moved toward autonomy. Male subjects sensed greater freedom from restraints, confinement and restrictions. They felt less tied to people, places and obligations upon their return from the wilderness.

2. Moved away from defendence. Upon return from the wilderness, male subjects were less suspicious of others. Male subjects were less easily offended and were able to accept criticism more readily.

3. Moved toward endurance. Individuals upon return from the wilderness were more persistent and unrelenting in work habits.

4. Moved away from exhibition. Male subjects were less interested in being the center of attention. They were less interested in engaging in behavior which would win the attention of others. They did not enjoy being as dramatic and witty as before.

5. Moved away from impulsivity. Male subjects give more thought before speaking or expressing their feelings or wishes. They were more inhibited, and less reckless and

spontaneous.

6. Moved away from nurturance. Male subjects were less interested in caring for others upon their return from the wilderness. They were less sympathetic and comforting.
7. Moved toward order. Male subjects were more concerned about personal neatness and organization of surroundings. They were more well-ordered, disciplined, consistent and prompt.
8. Moved toward play. Upon return from the wilderness male subjects were more attuned to amusements, light-heartedness and had more of an easy-going attitude toward life.
9. Subjects moved away from social recognition. Males were less concerned about what others thought about them following the wilderness outing. They were less concerned about reputation.
10. Males moved away from succorance. They were more self-confident and less seeking protection and sympathy from others. Males indicated a greater self-assurance.
11. Moved away from external control. Male subjects had a greater sense of control over their environment. They felt that they could effect a change in situations which confronted them.

C. Sex differences (Females).

1. Moved away from abasement. Females, upon return from the wilderness, were less self-critical and humble. They were less likely to expose themselves to situations where they were in inferior positions. They had a greater sense of

self-esteem.

2. Moved toward autonomy. Females sensed greater freedom from restraints, confinement and restrictions. They felt less tied to people, places and obligations upon their return from the wilderness.
3. Moved toward order. Female subjects were more concerned about personal neatness and organization of surroundings upon return from the wilderness outing. Women were more disciplined, consistent and prompt.
4. Moved toward play. Females were more attuned to amusements upon return from the wilderness. They were light-hearted and had more of an easy-going attitude toward life.

D. Summary of sex differences follows:

1. Men showed greater internal control than women.
2. Women revealed the greatest change away from abasement. They were less self-critical and self-belittling than were men.
3. Men became less dependent on others for protection and support than did women. Men showed greater self-confidence in their abilities.
4. Men showed the greater change away from defendence. They were less offended and more accepting of criticism.
5. Men revealed greater endurance than women. Males persisted longer at tasks.
6. Men displayed a greater change away from exhibition. Males were less interested in being the center of attention than were females.

7. Males showed greater movement away from impulsivity. They were more deliberate in decision making than women.
8. Males moved away from nurturance. They were less tender, sympathetic and comforting than women.

In general, subjects of this study possessed a high degree of control and work orientation considered valuable in effectively coping. On the other hand, male subjects moved significantly away from affiliate support while women were more sociable.

CHAPTER V

CONCLUSIONS

From the data collected, this study attempted to determine the effect of a 95-day wilderness camping program on personality. Hypotheses and conclusions of this study follow.

> Hypothesis 1: There will be no difference in personality in the areas of control, work orientation and interpersonal orientation among the combined group.

This study supported the hypothesis of no difference in the personality characteristics of interpersonal orientation; but, rejected the hypothesis of no difference in the areas of control and work orientation. Subjects moved toward the personality characteristic of order in the area of control, and toward endurance and play in the area of work orientation.

> Hypothesis 2: There will be no difference in the personality qualities of control, work orientation and interpersonal orientation as related to age.

The hypothesis of no difference among age groups was supported by this study in all personality areas considered.

> Hypothesis 3: There will be no difference in the personality qualities of control, work orientation and interpersonal orientation as related to sex.

This study rejected the hypothesis of no differences in all areas of personality considered as related to the male population. Men moved toward order and internal control, and away from impulsivity in the area of control. They moved toward endurance and play in the area of work

orientation; and away from defendence, exhibition, nurturance and social recognition in the area of interpersonal orientation.

This study rejected the hypothesis of no differences in the areas of control and work orientation; but, supported the hypothesis of no difference in the area of interpersonal orientation as related to women. Women moved toward order in the area of control and toward play in the area of work orientation.

> Hypothesis 4: There will be no difference in the personality qualities of control, work orientation and interpersonal orientation as related to education.

The hypothesis of no difference among education levels was supported by this study in all personality areas considered.

> Hypothesis 5: There will be no difference in the quality of risk-taking between subjects participating in the wilderness camping program and the norm group.

The hypothesis of no difference between the subjects of this study and the norm group in risk-taking was supported.

> Hypothesis 6: There will be no difference in the personality qualities between subjects participating in the wilderness camping programs and the norm group.

This study supported the hypothesis of no difference in personality qualities between subjects of this study and the norm population.

Recommendations for Further Study

This study could have been improved by engaging a larger sample of subjects. The possibility of a greater number of subjects in various age and educational levels would have provided more thorough analysis of specific differences in personality characteristics in these categories.

Additional investigation of the effect of socialization upon the subjects of an extended camping program is plausible. Is the decline in

socialization, particularly among male subjects in such a program, consistent? If so, what possible causal factors can be identified? Is there a general decline in socialization among subjects involved in other wilderness programs (such as Outward Bound)?

Using the same measurements (PRF and I-E Scale) employed by this study and testing an Outward Bound group would provide one means of comparison between the two wilderness programs.

An interesting possibility for further study addresses the question regarding which produces personality change, the wilderness or the NOLS program. This question may be answered by adapting the NOLS program to the urban setting and testing the effect upon personality among the participants.

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APPENDIX

THE NATIONAL OUTDOOR LEADERSHIP SCHOOL

PETER SIMER, DIRECTOR

AGREEMENT

#1. Herbert G. Bridgewater will administer a personality research questionaire to the 1981 Spring Semester Course (SS I) on February 9th and May 15th, and to SS II and SS III on February 12th and May 18th.

#2. Testing will occur in the evenings in February and in the mornings in May at a prearranged time. Testing will be conducted in a maximum interval of two hours.

#3. Prior ot the administration of the test, permission letters will be explained and passed out in Lander.

#4. Any evacuee will be post-tested if possible.

#5. NOLS will reçeive a copy of the entire research writeup.

#6. Either a copy of the results or if it is lengthy, a brief summary of the results, will be made available to any interested student who participates in the study. NOLS will distribute and absorb the distribution costs.

#7. If the results of the study are to be published in a popular outdoor magazine, (rather than a professional journal), NOLS will receive a draft of the article and will have the right to preview and edit before it is submitted for publication.

Herbert G. Bridgewater

Herbert G. Bridgewater
P. O. Box O
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2 February '81
(DATE)

Ben Toland

Ben Toland,
Assistant Director
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NOLS is a non-profit educational corporation

VITA[2]

Herbert Grant Bridgewater

Candidate for the Degree of

Doctor of Education

Thesis: THE EFFECT OF A NINETY-FIVE DAY WILDERNESS CAMPING PROGRAM UPON PERSONALITY

Major Field: Higher Education

Biographical:

Personal Data: born in Beaver, Oklahoma, February 17, 1937, the son of Mr. and Mrs. Guilford H. Bridgewater.

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Professional Experience: Pastor in United Methodist Church, 1959-64; Instructor of Health Education, Northwestern Oklahoma State University, 1964-65; graduate teaching assistant, Peace Corps Outward Bound Program, University of New Mexico, 1965-66; Director of Community Services and Continuing Education, Northwestern Oklahoma State University, 1966-67; Director of Athletics and Chairman of Health, Physical Education and Recreation, College of Artesia, 1967-70; Chairman of Division of Recreation, Prairie View University, 1972-75; Pastor, United Methodist Church, 1975-81.