INFLUENCE OF THE 4-H INCENTIVE SYSTEM ON THE DEVELOPMENT AND RETENTION OF 4-H MEMBERS

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INTRODUCTION

This project focused on the influence of the 4-H incentive system on the development and retention of 4-H members. The rationale for this study was based in the theoretical conceptions of Lepper and Greene (1978) concerning the effects of extrinsic rewards on the process of internalization, Harter's (1978) theory on decreased effectance motivation, as well as work by McCullers and his associates (Fabes, McCullers, Moran, 1981) indicating that material rewards may produce temporary regression in developmental level and psychological functioning.

The purpose of this study was to examine the characteristics of program participants for whom the present motivational system has proved maximally effective, as well as those under which and for whom it has been least effective.

This dissertation deviates from the format called for in the Thesis Writing Manual (1982). The body of the dissertation consists of a complete manuscript prepared for submission to a technical journal in accordance with the Publication Manual of the American Psychological Association (1983). In order that the dissertation be complete in terms of traditional university standards, materials which are usually present in the body of the report are present in the Appendices. The appendices include a review of the relevant literature in additional to supplemental materials, raw data, and selected statistical analyses.

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Influence of the 4-H Incentive System on the Development and Retention of 4-H Members

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Abstract

To explore the influence of the 4-H incentive system on the development and retention of 4-H members, this study utilized a measure of success in the 4-H program and a motivational measure. The sample consisted of 56 undergraduate and graduate university students who were former 4-H members, representing four levels of success in the 4-H program. Subjects in the most successful groups scored extremely high on a measure of extraversion, reflecting a high degree of extrinsic motivation. Subjects in the least successful groups scored significantly lower on this measure. Results are discussed in light of theories of adverse effects of rewards.

Influence of the 4-H Incentive System on the Development and Retention of 4-H Members

There is a general belief that rewards do good things and the greater the reward, the more likely we are to obtain the attitudes, motivation, and behavior desired (McCullers, 1978). The general aim of this study was to examine that belief, outside of the laboratory, within the context of a real-life youth organization that makes extensive use of rewards in its program.

While prizes and awards are often used to enhance human performance and motivation, there is now much research evidence to show that such incentives may have just the opposite effect. Extrinsic incentives have been found to undermine intrinsic interest, turning an otherwise enjoyable activity into work (Lepper & Greene, 1978), to diminish feelings of personal causation (deCharms, 1968), and to lessen an individual's desire to undertake more difficult tasks (Harter, 1978). The development of internalization as a form of inner control may be impaired by rewards or other extrinsic controls (Lepper, 1981). It has also been suggested that material rewards may produce a form of developmental regression, causing subjects to perceive and approach problems from a more immature level of functioning (Fabes, Moran, & McCullers, 1981).

The needs that motivate behavior may be either intrinsic or extrinsic, and behavior may be aimed at the satisfaction of either or both of these types of needs (Deci & Porac, 1978). Rewards are sometimes used to encourage people to do things that they do not

want to do. Much recent research, however, indicates that quality of performance and level of interest and involvement in an activity are generally higher when motivation is internal rather than external. Csikszentmihalyi (1978) suggests that intrinsic rewards and motivation can emerge under the circumstances of optimal challenge. Harter's (1978) investigations revealed that preference for optimally challenging tasks decreased under conditions where children worked for extrinsic rewards in the form of grades.

In order to achieve its mission of helping to produce useful and productive members of society, the 4-H program relies upon system of positive reward within an atmosphere of competition as a means of motivating young people and of providing recognition and feedback on their achievements. These awards range from a ribbon at a county fair to national college scholarships and large monetary prizes. This system of competition and rewards has proven to be highly effective for nearly 70 years (Weber & McCullers, 1987). The young men and women who attain high levels of achievement in the 4-H program typically are highly successful in other aspects of life as well.

Oklahoma has traditionally had a strong 4-H program. During the past 25 years despite limited resources and population, Oklahoma has received as many national 4-H awards and scholarships as any other state in the union. Even in Oklahoma, however, the 4-H program is faced with a serious problem of retaining 4-H members, particularly in the teenage years. For example, as of

October 1, 1987, the number of 13-year-olds (7,987) enrolled in 4-H was approximately one-half the number of 10-year-olds (14,352); only 166 19-year-olds were enrolled in the program (Annual 4-H Enrollment Report, 1987). Although this loss of adolescents from the program is a major source of concern nationwide, little formal research has been done to explain the persistent curvilinear relationship between 4-H participation and age.

One logical starting point for such research, and one that has received little attention in this connection, would be to examine the nature and effectiveness of the 4-H incentive system. Inasmuch as the incentive system exists for the purpose of attracting youth into the program and keeping them actively involved and interested in it, and for optimizing motivation and enhancing performance, the significant and persistent loss of members in the teen years suggests that the incentive system may not be effectively performing its function for many members.

In a recent study (Weber & McCullers, 1986), perceptions of the Oklahoma 4-H program were collected from 155 teen leaders. The views of these 4-H teen members raised questions about the effectiveness of some 4-H incentives. A sample of 42 4-H extension agents representing 18 states also indicated that a disproportionately high percentage (76.5%) of agents feel that the current 4-H incentive system is not providing the results traditionally expected (Weber & McCullers, 1986). In a study conducted by the Kansas State 4-H office (1985), parents and youth

gave a clear indication that material rewards were not seen as the best motivators to continued learning.

Although many children join 4-H, and remain actively involved throughout their teenage years, recent research indicates that a primary reason that members left 4-H was that the program no longer met their needs (National 4-H Impact Study Committee, 1987). Perhaps one type of individual finds greater satisfaction in the awards structure offered in the 4-H while others seek a different type of challenge. It has been suggested that the effectiveness of 4-H incentives may be linked to personality patterns (Kowitz & Dronberger, 1975).

The purpose of this study was to explore the motivational characteristics of former 4-H members for whom the 4-H incentive system was maximally effective, as well as those for whom it was least effective. It was expected that those who remained in 4-H and were highly successful would be extrinsically motivated and would have enjoyed the competitive and social aspects of the 4-H program. Those who dropped out at around age 13-14 years may have been more internally oriented so that the emphasis on competition and extrinsic rewards was less attractive to them.

Method

Subjects and Design

The subjects were 56 undergraduate and graduate students at Oklahoma State University who ranged in age from 18-24 years. All were former Oklahoma 4-H members recruited from records available

in the State 4-H Office and through advertisements in the campus newspaper. The mix of males (24) and females (32) was representative of the current male/female ratio in the 4-H program.

All subjects had first enrolled in the 4-H program between 9 and 11 years of age. The subjects were assigned to one of four groups, depending on their level of success in the 4-H program:

1. Highly successful 4-H members: Defined as Hall of Fame recipients, Blue Award Group, National Winners, and State 4-H Presidents.

2. Very successful 4-H members: Defined as state project winners, state scholarship winners, and state officers other than president.

3. Moderately successful 4-H members: Defined as those who continued to participate in the program beyond age 14, but did not win awards or hold offices beyond the county level.

4. Drop-outs: Defined as those who completed at least three years in 4-H, but left the program by age 14.

In this study no variables were manipulated experimentally by the investigator. The final design consisted of four groups of subjects, divided according to tenure and level of success in 4-H. Two measures were taken on each subject: One was a measure of success in the 4-H program and one was a motivational measure.

Instruments

Two instruments were used to gather data for the study, "4-H and You: Personal Data land Experiences," and "4-H and You: Attitudes and Opinions."

4-H and You: Personal Data and Experiences. This is a revised version of the "4-H and You Questionnaire" developed by Weber and McCullers (1986) in their study of 4-H delegates to District Leadership Conferences. It consisted of 28 questions designed to obtain demographic information and degree of involvement in the 4-H program, including the number and kinds of awards received. Responses to the questionnaire provided a measure of the individual's success in the 4-H program, with success being defined as the number and type of awards received during the period of 4-H affiliation. The questionnaire was pilot tested on individuals similar to the subjects but not involved in the study to ensure that the items could be interpreted accurately and answered easily.

4-H and You: Attitudes and Opinions. This instrument consisted of the Internality and Realization scales of the California Psychological Inventory (CPI) (Gough, 1987) combined with the Extraversion and Openness scales of the NEO Personality Inventory (NEO) (Costa & McCrae, 1985), and was used to assess the intrinsic/extrinsic motivational characteristics of the subjects.

The CPI consists of 20 folk concept scales intended to be sufficient to permit explication and prediction of a broad range of interpersonal behaviors. Each scale is intended to assess a cluster or complex of qualities subsumed under the same name or concept. The CPI is a self-administered paper and pencil test.

The Internality scale consists of 34 true/false items used to provide a measure along an introversion-internality versus

extraversion-externality axis. Persons scoring high on this scale are considered to be introverted, inwardly oriented, reserved in manner, moderate, and reluctant to initiate or take decisive social action. Persons scoring low are seen as outgoing, confident, talkative and having social poise and presence.

The Realization scale (CPI) consists of 58 true/false items used to assess feelings of self-realization and psychological integration. High scorers are said to feel themselves to be capable, able to cope with the stresses of life and to be reasonably fulfilled or actualized.

Reliability coefficients on test-retest measures for the CPI for high school males is .68 and .71 for girls. A CPI protocol was scored and profiled and indicators of invalidity were scanned to determine if they were within the normal limits.

The NEO Personality Inventory provides a measure of five major domains of normal adult personality traits. The self-administered version is a pencil and paper test in which responses to items are made on a five-point scale.

Scores on the Extraversion scale (48 items) indicate traits in the domain of extraversion. Extroverts are sociable, assertive, active, talkative, energetic and optimistic. Introverts tend to be reserved, independent, even-paced and prefer to be alone. High scores reflect an external orientation; low scores signify internal orientation.

Open to Experience scale (48 items) is a distinctive feature of the NEO. High scores reflect greater openness. Open individuals tend to have active imaginations, aesthetic sensitivity, receptiveness to inner feelings, preference for variety, intellectual curiosity, independence of judgment and willingness to entertain novel ideas and unconventional values. Persons scoring low on openness tend to be conventional in behavior, conservative in outlook, prefer the familiar, and are socially conservative.

The NEO was developed as a device for assessing normal personality traits. Validation studies (Costa & McCrae, 1985) provide evidence that the NEO scales show a consistent pattern of moderate to strong correlations with corresponding scales from other personality inventories and with ratings of same traits made by different observers. Test-retest reliabilities range from .86 to .91 for domain scales.

Procedure

Subjects were first mailed the "Personal Data and Experience" questionnaire and asked to complete and return it at their convenience. The "attitudes and opinions" instrument was administered during scheduled appointments after the first questionnaire had been returned. All subjects completed the same form of both instruments. The research procedure was reviewed and approved by the Institutional Review Board of the university for human subjects, rights, and welfare.

Results

Scoring

Responses of the "4-H and You: Personal Data and Experience" were summarized and means calculated where appropriate. The scales from the CPI and NEO were scored by the principal investigator using tabulation keys provided in the user manual. Raw scores for the NEO scales were converted to standard scores using tables provided in the user manual. Only raw scores were available for the CPI scales. Scores for all subjects were compared to the established profiles for each scale.

Personal Data and Experiences

A complete summary of responses to the "Personal Data and Experiences" questionnaire is provided in Appendix C. Only findings of interest are reported here.

Subject Characteristics. The four groups were comparable in age and radio of males and females, approximately 35-40% males and 60-65% females. The ratio of males to females it comparable to general ratio of males to females that has existed within the 4-H population in Oklahoma for approximately the last ten years. Educational status of the subjects did not differ by groups, and the majors listed were diverse, with a slight leaning toward agriculture and home economics.

Size of 4-H Club. The size of the 4-H club to which subjects belonged was an interesting finding. Approximately 80% of the subjects in Groups 1, 2, and 3 came from clubs with 10 to 30 members

while more than a third of Group 4 (the "drop outs") came from clubs with less than 10 members. This suggests that the decision to drop out of the 4-H program may be related to size of the 4-H club to which the member belongs, $\underline{X}^2 = 7.11$, df = 2, $\underline{p} = .029$.

4-H Involvement. Groups 1 and 2 were more highly involved in 4-H than Groups 3 and 4. They enrolled in more projects, had greater fair participation, and took part in more activities. A Chi-square analysis of the number of projects by groups confirmed that Groups 1 and 2 enrolled in significantly more projects than Groups 3 and 4, $\underline{X}^2 = 28.97$, df = 1, $\underline{p} = <.001$.

Success and Achievement. Groups 1 and 2 were high achievers in 4-H. They received more county, state and national awards and held more offices than Groups 3 and 4. They continued this pattern of high achievement after leaving 4-H, as reflected in their honors and achievements at the university.

While these demographic measures revealed information that would be of interest to professionals in the 4-H program, they did not provide much information on which predictions could be made as to which members would remain in 4-H after age 13-14.

Personal Attitudes and Opinions

Mean NEO and CPI scale scores and standard deviations are presented in Table 1 for each group.

Insert Table 1 about here

The highly successful group (1) and the moderately successful group (2) had higher mean scores on the Extraversion scale and lower mean scores on the Internality scale than the moderately successful group (3) and the drop-out group (4). Group 3 had the highest mean score on Openness and Group 4 the highest on Realization.

These results indicate that the more successful 4-H members are, the more likely they are to be externally oriented. A one-way analysis of variance and Tukey's HSD test confirmed that Groups 1 and 2 scored significantly higher than Groups 3 and 4 on Extraversion. Similar one-way analyses of variance of Tukey's HSD tests indicated no significant differences between pairs of means on any of the remaining three scales (Openness, Internality or Realization).

Group 2 contained one outlier subject whose scores on Internality (68) and Realization (77) were all much higher (more than 350) than other scores as to appear spurious. When that subject was eliminated from the analyses, Groups 3 and 4 scores became significantly higher on Internality than 1 and 2. This would support the findings on the Extraversion scale with a measure from a different instrument.

A within-subject analysis of variance revealed a significant difference between scales of Internality and Realization, $F(1,48) = 49.21$, $p = .001$. This difference was expected because the scales themselves differed. Subjects had a higher mean score on Realization than Internality. Groups 1 and 2 scored higher than

Groups 3 and 4 on Extraversion, indicating a more extrinsic orientation, $F(3,48) = 11.24$, $p = <.001$. Males scored lower on Extraversion than females, $F(1,48) = 4.35$, $p = .04$.

Several subjects in Groups 1 and 2 had raw scores that were off the scale of Extraversion. For analysis purposes, those scores were assigned the highest possible score of 75. A Chi-square analysis indicated that the proportion of subjects in Groups 1 and 2 who scored above 75 was significantly higher than in Groups 3 and 4, $X^2 = 14.22$, df = 1, $p = <.001$. A similar analysis was performed for scores of 60 and above (high extraversion). Again, Groups 1 and 2 had a significantly higher proportion of scores of 60+ than Groups 3 and 4, $X^2 = 26.75$, df = 1, $p = <.001$. A Spearman Rho correlation ($\rho = .69$) indicated a positive correlation between high scores of extraversion and membership in Groups 1 and 2.

Insert Table 2 about here

A Pearson Correlation matrix indicated a moderate negative correlation between Extraversion and group number, $r(54) = -.569$, $p = .01$. Correlation between Internality and Realization scales was moderate, $r(54) = .524$, $p = .01$, and there was a slight negative correlation between Internality and Openness, $r(54) = -.339$, $p = .05$.

When the outlier subject was dropped, a moderate correlation between Internality and group number, $r(53) = .419$, $p = .01$, and a negative correlation between Extraversion and group number,

$r(53) = .541$, $p = .01$. Negative correlations were indicated between Extraversion and Internality, $r(53) = -.683$, $p = .01$, and Internality and Openness, $r(53) = .439$, $p = .01$. There were slight correlations between Realization and Openness, $r(53) = .328$, $p = .05$ and Extraversion and Openness, $r(53) = .378$, $p = .01$.

An examination of sex differences was included in all analyses. An independent t-test between sexes using standard scores for the Externality and Openness scales indicated no significant differences. A within-subject analysis of variance on the Internality and Realization scales did reveal a significant difference between scales by sex $F(1,48) = 4.35$, $p = .04$. No other sex differences were obtained.

Discussion

Perhaps the major finding of the study was that those 4-H members who were highly successful in 4-H tended to be highly extrinsically oriented. Scores on the Extraversion scale for Groups 1 and 2 indicated a high probability of showing traits that compose the domain of Extraversion. When compared to the norms for the internality scale, Groups 1 and 2 were below the basic normative sample and norms for college students.

This project lends support to the idea that personality characteristics may play a major role in determining which individual will find satisfaction in the awards structure of the 4-H program, and which will seek a different type of challenge. Those subjects who succeeded in 4-H appeared to enjoy extrinsic motivation

and competition. They earned more total awards, higher level awards, and remained in 4-H longer. They also appeared to enjoy the social contacts made in 4-H as indicated by the number of activities and events in which they participated.

The question remains as to whether the 4-H incentive system accounts for members leaving at an early age. According to Lepper (1981), extrinsic controls may alter an individual's perceived locus of control thus causing that individual to lose interest in an activity and to perform poorly as a consequence. Harter (1978) suggests that extrinsic rewards affect motivation by decreasing an individual's tendency to select tasks of optimal challenge and decreasing the pleasure derived from performing that task. Both of these interpretations could explain why certain individuals drop out of 4-H where there is a heavy emphasis on awards and competition.

Fabes, Moran and McCullers (1981) have suggested that material rewards may shift subjects temporarily to a lower level of psychological functioning. The 4-H incentive system may serve to keep the program geared to a lower developmental level. This lower level may not provide a challenge for those members who are more internally oriented. In addition, some members may keep going as long as awards are available. When the awards stop, they may consider the task or program boring and quit. Older members may be satisfied with what is appropriate for younger members as long as they are under the control of extrinsic awards.

The important values of 4-H probably revolve around achievement and affiliation needs (Quarrick & Rankin, 1956). Highly successful members appeared to be achievement-oriented as indicated by the number of projects in which they enrolled and the awards they received. Those members also participated in many activities and held a variety of offices indicating high activity levels and a preference for other people's company--another trait of extraversion. They continued this high involvement in college and their lists of honors and achievements were impressive. Those 4-H members who were high achievers appear to be high achievers by nature, who flourish in competition and when they are challenged and evaluated.

In a study of 4-H awards and selected personality characteristics, Stodola (1965) found that members who received more awards were less aloof, thought more highly of themselves and were more sociable, all traits of extraversion. Openness to new experiences should also be a characteristic of the extrinsic personality. It might be expected that members who ranked high on the Internality scale would also be higher on Realization--an assessment of self-actualization. In this project, however, there were no significant differences between the four groups on the Realization or Openness scales.

The evidence on the relationship between size of club and the success of a 4-H member is not clear. In this study highly successful members were more likely to belong to clubs with 10 to 30

members while those who dropped out belonged to clubs of less than 10. Club size appears to be related to enrolling in six or more projects, greater participation, and high awards. Other studies have indicated no relationship between size of club and awards.

Those who dropped out of 4-H did not exhibit as many items and did not win as many awards. From this study, however, it can not be determined if this is a cause or effect.

Another interesting finding of this study was that Groups 3 and 4 appeared to be very much alike in many respects. While Group 4 members were actual "drop-outs" from 4-H, Group 3 might be labeled as "mental drop-outs." Although they remained in 4-H, they participated in few projects and were not highly involved in many activities. Those members could have easily left 4-H but for some reason remained. By determining why Group 3 stayed in 4-H, it should be possible to find a way to persuade Group 4 to remain in the 4-H program also.

What implications do these findings have for the 4-H program? One area that could be examined is quantity versus quality of project work. Do those members who are highly successful tend to favor participating in more projects and activities in order to earn more awards? They may be sacrificing quality for quantity. Intrinsically oriented members may concentrate on doing their very best on one or a few projects. An emphasis on number of awards may be a discouraging factor to them. If the 4-H incentive system is indeed "selecting out" one type of individual, then program planners

may want to reconsider the emphasis placed on the quantity of extrinsic awards. If the quantity of awards were de-emphasized, this might foster greater interest in the program in those members who fall into Groups 3 and 4. While competition and extrinsic awards are highly effective for some members, other forms of recognition might help to generate and maintain enthusiasm in those members now being lost from the program. An emphasis on feedback on the quality of project work could help provide Groups 3 and 4 with recognition and Groups 1 and 2 to have higher realization scores.

Table 1

Mean Scores and Standard Deviations by Groups

	NEO		CPI	
	EXT	OPEN	INT	REAL
Standard Scores				
Group 1 (N = 14)				
Mean	65.03	52.60		
SD	8.94	9.06		
Group 2 (N = 15)				
Mean	66.90	53.20		
SD	8.65	5.27		
Group 3 (N = 13)				
Mean	55.92	54.54		
SD	5.02	11.24		
Group 4 (N = 14)				
Mean	50.11	52.25		
SD	8.08	8.70		
Raw Scores				
Group 1 (N = 14)				
Mean	125.86	116.29	13.93	24.43
SD	15.73	12.57	4.89	4.60
Group 2 (N = 15)				
Mean	130.07	114.60	16.27	28.33
SD	14.31	9.36	14.53	16.00
Group 3 (N = 13)				
Mean	108.92	117.85	19.15	24.46
SD	7.70	20.40	5.37	9.05
Group 4 (N = 14)				
Mean	103.14	114.36	19.50	28.71
SD	16.06	16.10	6.07	9.40

Table 2

Frequency Tables for Scores

Extraversion Scores of 75 and 75+

	< 75	75+
Groups 1 & 2 (N = 29)	17	12
Groups 3 & 4 (N = 27)	27	0

Extraversion Scores of 60 and 60+

	< 60	60+
Groups 1 & 2 (N = 29)	7	22
Groups 3 & 4 (N = 27)	25	2

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APPENDICES

APPENDIX A

REVIEW OF LITERATURE

Influence of the 4-H Incentive System on the Development and Retention of 4-H Members

Literature Review

There is a general belief that rewards do good things and the greater the reward, the more likely we are to obtain the attitudes, motivation, and behavior desired (McCullers, 1978). This belief has been supported by years of study on the effects of incentives on the behavior of human and non-human subjects (Crano & Sivacek, 1984; Harackiewicz, Maderlink & Sansone, 1984; Harackiewicz, Sansone, & Maderlink, 1985). However, there is a growing body of literature that suggests that this belief is not always well founded. The purpose of this review is to examine some theories of motivation and the general literature on the adverse effects of rewards. The role of incentives in 4-H and their possible relationship to tenure of members will also be examined.

Intrinsic versus Extrinsic Motivation

A person is described as intrinsically motivated if he/she performs an activity for its own sake and extrinsically motivated if the activity is performed as a means to an end, that is, to obtain a reward or avoid punishment (Ross, 1975). Extrinsic rewards are generally necessary to motivate people to do uninteresting activities unless the situation can be restructured to make it interesting (Deci & Porac, 1978). Extrinsic rewards tend to improve performance on routine, well-learned activities and impair performance on open-end activities such as problem-solving.

Deci (1975) contends that rewards have both controlling and informational aspects and that the more relevant of the two will be responsible for the subsequent changes in perceptions and feelings. He proposes that there will be changes in perceptions of the instrumentality of behavior when controlling aspects of the reward are salient or changes in feelings of competence and self-determination when informational aspects are salient. Activities offering informational processing are valued.

Research on intrinsic motivation reveals that a considerable proportion of behavior cannot be explained in terms of anticipated goals or rewards but rather in terms of goals and rewards that arise out of direct involvement with an ongoing activity (Csikszentmihalyi, 1978). Such individuals might incidentally win recognition or approval for their accomplishments or put learned skills to use but that is not the main consideration for undertaking an activity. In the case of extrinsic motivation, the goal is external rewards or the approval of others, and behavior is shaped by its consequences. People develop different motive structures and these become an enduring aspect of the person (Deci & Porac, 1978).

The needs that motivate behavior may be either intrinsic or extrinsic, and behavior may be aimed at the satisfaction of either or both of these types of needs (Deci & Porac, 1978). People vary in their capacity to experience extrinsic or intrinsic rewards and certainly both types are present in most human situations. Extrinsic sources of motivation often produce excellent behavioral

results. Much recent research, however, states that the quality of performance and level of interest and involvement in an activity are generally higher when the motivation is internal rather than external. Csikszentmihalyi (1978) suggests that intrinsic rewards and motivation can emerge under the circumstances of optimal challenge. He suggests that an individual can become "hooked" by an activity when there is an ideal level of challenge and ultimately operates on internal motivation for that activity. He calls this experience a "flow" experience.

The Adverse Effects of Material Rewards

While prices and awards have been used to enhance performance and motivation, recent research suggests that such incentives may have just the opposite effect. Extrinsic incentives have been found to undermine intrinsic interest, turning an otherwise enjoyable activity into work (the overjustification effect) (Lepper & Greene, 1978), to diminish feelings of personal causation (deCharms, 1968), and to lessen an individual's desire to undertake more difficult tasks, (effectance motivation) (Lepper, 1981). It has also been suggested that material rewards may produce a form of developmental regression, causing subjects to perceive and approach problems from a more immature level of functioning (Fabes, Moran, & McCullers, 1981).

Undermining Intrinsic Motivation

When subjects are promised rewards for participating in an activity and no performance demands are indicated an

overjustification effect has consistently been produced (Lepper & Greene, 1976; Lepper, Sagotsky, Defoe, & Greene, 1982). Lepper's attribution theory (1981) suggests that extrinsic controls may undermine intrinsic interest and task performance. The perception of being under extrinsic controls may cause an individual to lose interest in the task, to perform poorly, and to perceive himself as extrinsically motivated rather than intrinsically motivated if he is provided with a salient reward for engaging in an activity (Kelley, 1972). In a study of preschool children, Lepper, Greene, and Nisbett (1973) found that the providing extrinsic rewards turned "play" into "work." Individuals were induced to engage in an activity as an explicit means to some extrinsic rewards and this may have undermined their initial intrinsic interest in the activity.

Additional research with subjects varying from preschool children to college students indicate similar results (Deci, 1971; Calder & Straw, 1975; Ross, 1975). Intrinsic interest in an otherwise enjoyable task declined when the person participated in the activity as an explicit means to a salient, extrinsic reward. This may be due to individuals discounting intrinsic interest as a possible motivating factor and to perceiving themselves as extrinsically motivated.

Reduced Sense of Self-Determination and Competence

Lepper (1981) proposed that extrinsic controls alter an individual's perception of locus of control. The perception of being under salient extrinsic controls may cause the individual

to lose interest in a task or activity and to perform more poorly as a consequence.

Harter's findings are consistent with Deci's (1971, 1975) theory that extrinsic rewards affect intrinsic motivation by altering one's perceived locus of causality from one's self to the environment and/or decreasing one's sense of self-determination and competence. Results from Deci's experiments affirm that when money was used as an external reward, intrinsic motivation decreased; when verbal reinforcement and positive feedback were used, intrinsic motivation tended to increase. Of rewards, only praise has been shown to consistently support motivation from within oneself--a factor important in stimulating continued learning (Pollak, 1981). Another important intrinsic motivator is direct and clear feedback about competence levels (Boggiano & Ruble, 1979). DeLoach, Griffith, and LaBarbax (1983) specifically suggest that interaction and the opportunity to get feedback stimulate motivation for learning.

Internalization of Values Impaired

According to Lepper, internalization, as a form of intrinsic control, would be expected to be impaired by material rewards. An individual's perception of being controlled by external forces may interfere with the development of an internal perception of control, affecting the internalization of values.

Decreased Effectance Motivation

Harter (1978, 1981) investigated the hypothesis that children derive maximum pleasure from optimally challenging tasks. In her studies, Harter (1978) found a curvilinear relationship between pleasure and task difficulty for correctly solved items where the subject had no choice of the problems to be solved. Children working for grades chose significantly easier tasks to perform. Subjects working for grades verbalized more anxiety, showed less pleasure as well as responding below their optimal level. Students with higher effectance were more likely to choose hard problems under nonreward circumstances than under reward.

Other studies (Danner & Lonky, 1981) have shown that rewards had little effect on intrinsic motivation among children whose motivation was initially high. This supports the hypothesis that intrinsic motivation depends on the match between cognitive level and task demands and that only those tasks which present a realistic challenge to a child, in terms of cognitive level, are likely to involve persistent interest.

In the development of competence (Harter, 1981), adult reinforcement can lead to a dependency on external approval and externally-determined goals. External rewards can possess certain cue values which may serve to signal a child's success or failure on a task and relatedly, his competence or lack of competence. An individual's perception of being controlled by external forces may

interfere with the development of an internal perception of control, affecting the internalization of values.

Psychological Regression

McCullers and his colleagues (Fabes, Moran & McCullers, 1981; McCullers, Fabes, & Moran, 1987) have found that material rewards may produce a temporary developmental regression in psychological functioning. In studies with college students the investigators found that subjects under reward conditions performed heuristic tasks at an intellectual level that might normally have been expected of less mature subjects under nonreward conditions (Fabes, Moran & McCullers, 1981). These results were viewed as a regression of psychological functioning due to the adverse effects of reward on performance. Moran, McCullers, and Fabes (1984) found that the effects of extrinsic rewards on performance varied with age.

Task Performance Impaired

In a review of the effects of extrinsic rewards on intrinsic motivation Condry and Chambers (1978) concluded that, under certain conditions, subsequent interest in a task may be reduced by the imposition of task-extrinsic rewards. Reward contingency is one context which contributes to an undermining effect. In a study of high school students, Harackiewicz (1979) found that performance-contingent rewards undermined intrinsic motivation more than task-contingent ones, which produced decreases similar to control conditions of no reward. Deci (1975) has also proposed that

performance-contingent rewards should decrease intrinsic motivation even more than task-contingent ones because a reward is thought to be more controlling when it is contingent on some level of performance. Harter (1978) proposed that children may initially perform because they have received extrinsic rewards but later in development, pleasure can be derived from inherent satisfaction.

Awards and Incentives in the 4-H Program

History

Awards have played a vital part in the history and development of the 4-H program. The philosophy of the 4-H program has always included the use of contests, prizes, and awards in stimulating special effort and superior achievement on the part of the 4-H members (Longfellow, 1951).

Awards and prizes were used in agricultural activities for youth even before the 4-H program. Westrat related the importance of awards in early corn clubs: "A corn contest with prizes was one of the chief extrinsic instruments used to promote interest and participation in the project. The agricultural fair, to which 4-H work owed much of its early rapid growth, had as its expressed purpose the encouragement and recognition of superior products and performance through an intricate system of prizes and awards" (Dildine, 1958).

Seaman Knapp, who pioneered 4-H work within the U. S. Department of Agriculture, encouraged competition within clubs and counties by sanction of local, county and state prizes (History of

National Awards Program, 1982). Judging was based on yield, profit showing, exhibits and written records.

Positive Effects of Rewards in 4-H

While the basic assumption that competition and awards are a vital component of a voluntary youth organization has remained the same even though the types of awards have changed, the emphasis has shifted and the scope has broadened. The basic role of 4-H awards is to motivate members to achieve 4-H objectives and to recognize achievements of boys and girls in attaining these objectives (Handbook of National 4-H Awards Program, 1960).

According to the Incentives in 4-H Research and Development Project (1976) young people derive many different kinds of rewards from their 4-H experiences. In most cases the rewards they seek are not through the existing awards and incentives program. They are the intangible rewards which are the result of group involvement and come from being a contributing member of the group. The 1981 Virginia 4-H Recognition and Awards Handbook reflects the concept that awards and intrinsic interest are not mutually exclusive--"Awards should be used as incentives to stimulate 4-H members to set their own goals and use their abilities to achieve these goals" (Virginia Cooperative Extension Service, 1981).

Mary Ruth Rapp's study of 4-H awards in 1955 showed that 4-H'ers like awards and the competition involved with them (History of the National Awards Program, 1982). Other studies in the early 1950's reported similar findings.

One area that is not affected positively by awards is 4-H enrollment. The literature consistently shows that awards are not an important reason for originally joining 4-H. But awards do seem to have a positive effect on the decision to re-enroll for some members. A study by Alf Kirkeeng (1965) indicated that 4-H award winners were more inclined to re-enroll in 4-H. He also notes that over a period of years, this factor would tend to weed out youngsters who are not achievement oriented.

Other studies showed that 4-H members re-enrolling have a more favorable attitude toward competition and to enjoy competition more than drop-outs. But the literature is inconclusive on whether those who do not win drop out of 4-H (History of the National Awards Program, 1982). Recent studies indicate that receiving no form of recognition may be a contributing factor in not remaining in 4-H. Popken (1986) reported in a study of Wyoming 4-H members that almost 40% of the dropouts indicated a negative response to the statement "I received 4-H awards," and cited this factor as important influencing them to drop out of 4-H.

Awards have been shown to have a positive effect on the level of participation in 4-H projects and activities. However, only one study by George Boehnke (1953) deals specifically with the effect of awards on project work.

Extension agents and leaders feel more positively about rewards and the competition involved that do 4-H'ers themselves (History of the National Awards Program, 1982). Results published in a

nationwide study conducted by the Future Homemakers of America indicated that teachers overestimated how students would respond to awards, certificates, trophies, gifts, prizes, and trips as incentives (Future Homemakers of America, 1979). Similarities between teachers, extension agents, and volunteer leaders would warrant consideration of these data in relation to the 4-H program.

Competition and Awards

By definition, tangible incentives are extrinsic, external factors designed to generate specific performance and motivation. The 4-H system of competition and rewards has proven to be highly effective for some individuals (Weber & McCullers, 1986). However, many 4-H professionals feel that the current program may be better suited for one type of 4-H member--the 4-H'er geared to competition and being the "winner." Those members who succeed in 4-H may enjoy competition and extrinsic rewards while a heavy emphasis on rewards may cause others to drop out. Those who feel they have no chance of winning may be discouraged early in their 4-H careers and leave the program. Combs (1979) suggests that competition is valuable as a motivator only for those people who believe that they can win. Ideally, the 4-H program should be one in which most members can find success and remain active throughout the teenage years.

In order to achieve its mission of helping to produce useful and productive members of society, the 4-H program relies upon a system of positive reward within an atmosphere of competition as a means of motivating young people to strive to reach their fullest

potential and of providing recognition and feedback on their achievements. These awards range from a ribbon at the local fair to national college scholarships and prize money. This system of competition and rewards has proven to be highly effective for nearly 70 years (Weber & McCullers, 1987). The young men and women who attain high levels of achievement in the 4-H program typically are highly successful in other aspects of life as well.

It has generally been concluded that a balance between cooperation and competition is essential for helping young people grow and develop (Parsons, Broomall, Conoley, & McKinney, 1976). In recent years, 4-H professionals have been encouraged to downplay extrinsic motivational factors and focus on the concept that each child should be a winner every time. A national model developed for 4-H recognition lists competition with peers as one of four ways of recognizing members for their accomplishments.

An overview of 4-H brochures, programs and activities suggests that the important values of the 4-H program probably revolve around achievement and affiliation needs (Quarrick & Rankin, 1965). The importance of achievement in 4-H is seen in the great emphasis on contests, exhibits, the competitive nature of projects, and in the motto, "To make the best better." Affiliation lies at the core of such common 4-H activities as community projects, camps, conferences, etc. In the 4-H pledge, affiliation values are reflected in the pledging of the "heart to greater loyalty" and "hands to larger service."

A system such as 4-H that offers rewards in an atmosphere of competition is ideally suited to individuals who enjoy the competitive struggle and the chance to become the "winner." But competition must be matched to the skill and ability of the competitors. Individuals enjoy competing when the challenge and the chances of winning are at an intermediate level--not too high or too low. If the 4-H incentive system is geared toward the competitive type of member, then 4-H in effect, may be "selecting" only certain types to continue in the program.

Growing Awareness of the Possible Adverse Effects of Incentives in 4-H

The Cooperative Extension Service has become increasingly aware of an concerned about these problems in relation to 4-H and has been evaluating and re-evaluating the benefits and possible consequences of the 4-H incentive system of competition and rewards.

Even as early as 1919 there was concern with the philosophy of awards and the possible effect on youth who do not win. A 1936 study of awards in 4-H pointed out two dangers of awards--that victory might develop overconfidence in a member and conversely losing might destroy self-confidence (History of the National Awards Program, 1982). Other indications of concern included articles in the National Awards Handbook from 1936-1976 that dealt with the effective use of awards to motivate, educate, and recognize 4-H accomplishments.

Structure of the 4-H Awards Program

The structure of the awards program impacts on participation. While awards coordinated and distributed from National have few requirements, additional restrictions are imposed at the county and/or state levels. This directly affects how extensively awards are used in those programs.

Another factor that may cause problems is method itself of the selection of award recipients. Several studies have explored the practice of using competitive activities to select awards recipients. They report that the general feeling seemed to be that participation should be emphasized more when selecting "winners," and competition emphasized less (History of the National Awards Program, 1982).

No substantial data are found in the literature concerning the most effective type of award for 4-H members. An interesting finding is that the type of award has little bearing on the number of entrants or the amount of effort put forth by the participants.

Perceived Importance of Rewards

Research has shown that the importance of rewards is often viewed and rank-ordered differently by 4-H professionals, parents, and members (Forbes, 1978; Weber & McCullers, 1986). Other studies suggest that part of the problem concerning the effectiveness of competition and awards may be due to a difference in perspective between adult "givers" and adolescent "receivers" (Dallas Independent School District, 1977). Adults may overlook the fact

that children are capable of intrinsically "rewarding" themselves as they enjoy the "doing" of certain activities. Hewitt and Forness (1977) and Gardner (1978) organized rewards in a hierarchy, ranging from tangibles and tokens to social approval, task completion, knowledge or results and mastery. They conclude by suggesting lower level reinforcers (extrinsic) should be used only when higher level reinforcers are ineffective.

In a recent study (Weber & McCullers, 1986) when asked about the incentive system, the views of 155 4-H teen leaders raised questions about the effectiveness of some 4-H incentives. A sample of 42 4-H extension agents representing 18 states indicated that a disproportionately high percentage of agents feel that the current 4-H incentive system is not providing the results traditionally expected.

In a study conducted by the Kansas State 4-H Office (1985), parents and youth were surveyed to find out what they perceived as the best motivators for learning. There was a clear indication that material rewards were not seen as being influential motivation for continued learning. Feedback on progress appeared to produce better learning activity than a letter grade or a ribbon.

A national 4-H Impact Study Committee (1987) completed a study of 4-H alumni, members of other youth organizations, and nonparticipants in any youth organizations. Participants were asked their opinions on attitudes toward youth programs. The vast majority of both groups of participants disagreed with the statement

that there was too much emphasis on competition and awards. In comparing attitude ratings of the two groups, 4-H alumni were significantly more supportive on all but one item--competition and awards. On that point both groups were equally supportive of their respective organizations.

Declining Enrollment in the Teenage Years

One area that is not affected positively by awards is 4-H enrollment. The literature consistently shows that awards are not an important reason for originally joining 4-H. But awards do seem to have a positive effect on the decision to re-enroll for some members. A study by Alf Kirkeeng (1965) indicated that 4-H award winners were more inclined to re-enroll in 4-H. He also notes that over a period of years, this factor would tend to weed out youngsters who are not achievement oriented.

Basis for Adverse Effects in 4-H

Oklahoma has traditionally had a strong 4-H program. During the past 25 years despite limited resources and population Oklahoma has received as many national wards and scholarships as any other state. Even in Oklahoma, however, the 4-H program is faced with a serious problem of retaining 4-H members, particularly in the teenage years. For example, as of October 1, 1987, the number of 13-year-olds (7,987) enrolled in 4-H was approximately one-half of that of 10-year-olds (14,352); with 19-year-old enrollment at 166 (Annual 4-H Enrollment Report, 1987).

Although this loss of adolescents from the program is a major source of concern nationwide, little formal research has been done to explain the persistent curvilinear relationship between 4-H participation and age.

Implications for 4-H

One important consideration is the possible adverse effect that the exclusive use of extrinsic rewards may have on the development of intrinsic motivation--especially when the real possible results of extrinsic rewards are not understood by professionals and lay people who use them (Quarrick & Rankin, 1965). The "overjustification effect" theory may have important practical implications for situations in which extrinsic incentives are used to enhance or maintain children's interest in activities that were of initial interest to the child.

If internalization is impaired by material rewards, 4-H members who earn material rewards for participating in 4-H activities might be expected to lose interest in the project or activity and to perform more poorly than when they receive no rewards. If internalization processes have been affected, 4-H members may not internalize the values of the 4-H program and carry those over to other situations in life. Members may internalize which goals are important but they may not necessarily be motivated by intrinsic goals.

Some youth may leave the 4-H program--a program where most rewards are extrinsic--because they respond to intrinsic motivation.

A feeling of being controlled by external forces may interfere with the development of an internal perception of control. As a result 4-H members who receive extrinsic rewards such as money might be expected to reveal more externally-determined values due to the loss of internal control.

If rewards distract attention from the process of task activity to the goal of getting a reward, 4-H members, in focusing on getting "first place," may make guesses and not make the best use of the information on hand.

As 4-H members mature, one might expect regression effects to be greater on task performance. Those who remain in 4-H and are highly successful in terms of rewards received may also show less internality of 4-H values and their level of moral reasoning might be at a lower level than those who dropped out or did not receive many extrinsic rewards.

Extrinsic rewards may serve to keep the 4-H program geared to a lower developmental level. Members may keep going as long as extrinsic rewards are available; but when the rewards stop, members may consider tasks boring and quit. Older members may seek a level of challenge appropriate for younger members as long as they feel that they are controlled by external factors. When members are winning, 4-H is fine, but when they start to lose, it is not so much fun.

Giving of extrinsic rewards simply because a 4-H activity is a public event, open to a child's family and friends, may force the

child to work primarily for those rewards or risk losing social status.

A Need to Study the 4-H Incentive System and Characteristics of 4-H Members

One logical approach that has received little attention would be to examine the nature and effectiveness of the 4-H incentive system. Since the incentive system exists for the purpose of attracting youth into the program and keeping them actively involved and interested in it and for optimizing motivation and enhancing performance, the significant and persistent loss of members in the teen years would suggest that the incentive system may not be effectively performing its function.

Recent research indicates that the primary reason for individuals leaving 4-H was that it no longer met their needs (National 4-H Impact Study Committee, 1987). Further study is needed to explore motivational characteristics of program participants, especially in relation to their successes in the 4-H incentive system. Perhaps one type of individual finds greater satisfaction in the particular awards structure offered in 4-H while others may seek a different type of challenge.

One way to discuss rewards is in terms of the kinds of needs that motivate people. It has been suggested that the effectiveness of 4-H incentives may be linked to personality patterns (Kowitz & Dronberger, 1975). McClelland and Atkinson have researched two principle needs--achievement and affiliation. Need achievement

refers to the desire to excel, to be successful, to compete and to win. It also implies that a person enjoys the very running of the race and demonstration of competence as well as the prize that comes with winning. Need affiliation refers to the desire to have close, warm relationships with other people, to be a part of the group, to belong, to help others and to be helped by them. McClelland and Atkinson's studies suggest ways of identifying persons with a strong achievement or affiliation need. Achievement motivation is typically regarded as an example of extrinsic motivation.

Since extroverts require external stimulation they fill their lives with behaviors designed to increase arousal. They are characterized by a high degree of sociability, impulsiveness, physical activity, liveliness, and changeability. They tend to do new and different things. Extrinsic motivation may alter attentional processes which in turn affect what is learned.

Introverts tend to be less sociable, less impulsive, less active, and more stable to responses in their external environment. Intrinsic motivation seems to be tied to the motivation of humans to process information.

The Present Study

The purpose of this study was to examine the characteristics of program participants for whom the present motivational system has proved maximally effective, as well as those under which and for whom it has been least effective. It was expected that those members who remained in 4-H and were highly successful would be more

extrinsically motivated and would have enjoyed the competitive aspect of 4-H along with the social contacts they had in 4-H. Those who dropped out at around age 13 to 14 should be more internally oriented and the emphasis on extrinsic rewards would not be as interesting to them.

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APPENDIX B

RECRUITMENT LETTER TO SUBJECTS

Dear

The State 4-H Office is reviewing the awards and recognition program here in Oklahoma. We want to make the most effective use of this system and also to see if awards and recognition are related to who stays in 4-H and who leaves in pursuit of other interests. We are currently conducting research to help identify some of the characteristics of those who remain in 4-H and those who leave around age 13-14. We hope that the results of this study will assist us to see if there are areas in 4-H that need attention.

I would appreciate your cooperation with us in this study. The study will take an hour or so of your time to complete two questionnaires. One deals with your 4-H experiences and the other with your attitudes and opinions.

I am enclosing the first questionnaire with this letter. You can complete it at home. The second one I would like for you to complete at our office (103E Animal Husbandry Bldg.) at your convenience. You may drop by the office any time during the day (8 am-5 pm). At that time you can also turn in your completed questionnaire. I assure you that all of your answers will be kept in the strictest of confidence.

I know that you are probably very busy trying to complete the spring semester but I hope that you will be able to assist us in this study. If you have any questions, please feel free to give me a call at 624-5394.

Thank you for your cooperation.

Sincerely,

Sheila Forbes
Extension Program Specialist, 4-H
State Coordinator, Awards and
Recognition Programs

APPENDIX C

PERSONAL DATA AND EXPERIENCES MEASURES

Explanatory Note

Appendix C-1 contains the actual measure for Personal Data and Experiences.

Appendix C-2 contains the summary data for each question by group.

Appendix C-1

Questionnaire

4-H AND YOU: PERSONAL DATA AND EXPERIENCES

Please take a few minutes to complete this questionnaire. We are collecting this information in an effort to find ways to make the 4-H program as meaningful for youth as possible. This questionnaire provides a way for you to share some information about your 4-H experiences with us. Answer only those questions for the ages or years you were in 4-H. On some of these questions you may have to make an estimate, but please check or fill in all blanks as accurately as possible to the best of your memory.

1. What is your age?....._____

2. What is your:

   a. Classification...Fresh____ Soph.____ Jun._____
   Sen.____ Grad.____ Other_____

   b. Major....._____

   c. GPA....._____

3. What is your sex?.....1.Male____ 2.Female____

4. What was your permanent address while in 4-H? _____
   (Give name of town or city.)

5. How many members were in your 4-H club? 5-10____ 20-30_____
   10-20____ Over 30___

6. At what age did you join 4-H?....._____

7. How many years were you a 4-H member?....._____

8. How many 4-H projects did you work on in the following age ranges? (Actual project work, not just checked on enrollment card)

	9-11	12-14	15-19
1-3....			
4-6....			
Over 6....			

9. Indicate your participation in fairs:

a. Enter any projects in a county fair?.....1. Yes____ 2. No____
List number of exhibits and awards

	9-11	12-14	15-19
Exhibits.....			
Awards.....			

b. Enter any projects in a state fair?.....1. Yes____ 2. No____
List number of exhibits and awards

	9-11	12-14	15-19
Exhibits.....			
Awards.....			

c. How many projects did you complete but never show at a fair?

9-11	12-14	15-19
_____	_____	_____

10. Indicate your participation in any of the following events by age groups. Check all that apply.

	9-11	12-14	15-19
a. County Fashion Revue.....			
b. County Appropriate Dress.....			
c. County Food/Bread Show.....			
d. County Arts/Crafts Show.....			
e. Speech/Demonstration Contest.....			
f. County Livestock Show.....			
g. County Horse Show.....			
h. Contests at Roundup.....			
i. District Horse or Livestock shows.....			
j. County Judging Contests.....			
k. District/State Judging Contests.....			

11. Did you win any awards or prizes in any of the above events? If so, list how many:

	9-11	12-14	15-19
Money.....			
Trophies.....			
Ribbons.....			
Others.....			

12. Did you ever complete a county project report form or a county medal folder?

	9-11	12-14	15-19
Yes			
No			

13. Did you ever receive any county medals or certificates on your record book? 1. Yes____ 2. No____

If so, how many did you receive?

9-11	12-14	15-19
_____	_____	_____

CONTINUE WITH QUESTIONS 14-20 IF YOU REMAINED IN 4-H AFTER AGE 13.
IF YOU DID NOT PARTICIPATE IN 4-H AFTER AGE 13 GO TO QUESTIONS 21.

14. Did you ever complete a National Report Form? 1. Yes____ 2. No____

15. Did you ever enter a record book in the state awards program? 1. Yes____ 2. No____

If so, what was the highest award you won on a record book? _____

16. Did you ever enter any of the state scholarship programs? 1. Yes____ 2. No____

a. If so, what was the highest award you received? _____

17. Were you a national winner in a 4-H project area? 1.Yes____ 2. No____

a. If so, what project?..... _____

18. Were you ever in the State Blue Award Group for Hall of Fame? 1. Yes____ 2. No____

19. Were you a State Hall of Fame winner? 1. Yes____ 2. No____

a. If so, what year?..... _____

20. Did you attend National 4-H Conference? 1. Yes____ 2. No____

21. At what age(s) did you hold an office in:

	9-11	12-14	15-19
a. Local Club.....			
b. County Level....			
c. District Level..			
d. State Level.....			
e. What was the highest office you held?			

22. If you left the 4-H program before before completing nine years, how old were you when you left 4-H?....._____

What were your reasons for leaving?_____

_____

_____

23. If you remained in 4-H after age 14, what were your reasons for staying?

_____

_____

_____

24. Did you belong to other youth organizations besides 4-H? 1. Yes____ 2. No___

If yes, please list and give number of years you belonged to those groups.

	Organization	Years Belonged
1.	_____	_____
2.	_____	_____
3.	_____	_____

25. Including 4-H, into which of these organizations did you put in the most effort and why?

_____

_____

26. Please list what you consider the three strongest points of the 4-H program.

1. _____

2. _____

3. _____

27. Please list what you consider the three weakest points of the 4-H program.

1. _____

2. _____

3. _____

28. List up to five of the most important honors, achievements, accomplishments or awards you have received since high school graduation.

1. _____

2. _____

3. _____

4. _____

5. _____

Appendix C-2

Summary Data

PERSONAL DATA AND EXPERIENCES SUMMARY

1. AGE:

	Group 1 (n=14)	Group 2 (n=15)	Group 3 (n=13)	Group 4 (n=14)
Mean Years:	19.5	20.13	20.2	20.4
Range:	18-24	18-22	18-24	18-24

2. Classification in College:

	Group 1 (n=14)	Group 2 (n=15)	Group 3 (n=13)	Group 4 (n=14)
Freshman:	28.5%	20.0%	38.5%	28.5%
Sophomore:	28.5%	33.3%	23.0%	28.5%
Junior:	14.2%	20.0%	15.3%	7.0%
Senior:	21.4%	13.3%	7.6%	21.4%
Graduate:	7.1%	13.3%	15.3%	14.28%
GPA Mean:	3.46	3.25	3.15	3.04
GPA Range:	3.0-4.0	2.8-3.5	2.5-3.6	2.2-3.7

Major: by group

Group 1: (n=14)

Home Economics (2) Animal Science

Engineering Economics

Communication/Speech	Physical Education
Ag. Econ/Acctg.	Psychology
Business (2)	Undecided (2)
Group 2: (n=15)	
Home Economics (2)	Ag. Education
Mass Communication	Hotel & Restaurant Admin.
Business Management	Animal Science
Pre-Vet.	Marketing
Pre-nursing	Ag. Economics
Physical Education	Speech Communication
Economics and French	Undecided
Group 3: (n=13)	
Mechanical Engineering	Animal Science/Marketing
Communications	Public Relations
Ag. Economics	Family Relations/Child Dev.
Ag. Education	Home Economics (2)
Business (2)	Undecided (2)
Group 4: (n=14)	
Science Education	Ag. Education (2)
Home Ec.& Community Serv. (2)	Business/Acctg. (2)
Computer Science	Engineering (2)
Math Science	Animal Science
Undecided (2)	

3. Sex:

	Group 1 (n=14)	Group 2 (n=15)	Group 3 (n=13)	Group 4 (n=14)
Male:	42.9%	42.8%	38.5%	42.8%

Female:	57.1%	54.2%	61.5%	57.2%

4. Name of hometown while a 4-H member--Number of different towns listed by groups:

Group 1	Group 2	Group 3	Group 4
13	15	13	13

5. Number of members in 4-H club: (by percentages)

	Group 1 (n=14)	Group 2 (n=15)	Group 3 (n=13)	Group 4 (n=14)
5-10:	0.0%	0.0%	0.0%	35.7%
10-20:	64.3%	33.3%	23.1%	21.4%
20-30:	28.5%	46.7%	61.5%	35.7%
Over 30:	7.2%	20.0%	15.4%	7.1%

6. Age joined 4-H:

	Group 1 (n=14)	Group 2 (n=15)	Group 3 (n=13)	Group 4 (n=14)
Mean Year:	9.0	9.0	9.5	9.2
Range:	9-10	9-11	9-11	9-10

7. Number of Years a 4-H Member:

	Group 1 (n=14)	Group 2 (n=15)	Group 3 (n=13)	Group 4 (n=14)
Mean Years:	9.4	9.2	8.0	4.1
Range:	9-10	7-10	5-10	3-5

8. Number of Projects worked on in following age ranges:

	9-11 years	12-14 years	15-19 years
Group 1: (n=14)			
1-3	21.4%	14.3%	28.6%

4-6	7.2%	28.6%	28.6%
6+	71.4%	57.1%	42.8%
Group 2: (n=15)			
1-3	40.0%	13.3%	13.3%
4-6	26.7%	46.7%	13.3%
6+	33.3%	40.0%	73.3%
Group 3: (n=13)			
1-3	30.8%	30.8%	46.2%
4-6	69.2%	69.2%	53.8%
6+	0.0%	0.0%	0.0%
Group 4: (n=14)			
1-3	57.1%	85.7%	0.0%
4-6	42.9%	14.3%	0.0%
6+	0.0%	0.0%	0.0%

9. Fair Participation in following age ranges:

	9-11 years	12-14 years	15-19 years
<u>County Fair</u>			
Group 1: (n=14)			
Enter Co. Fair	100%	100%	100%
Exhibit Means	11.2	25.2	24.0
Award Means	8.2	19.5	17.5
Group 2: (n=15)			
Enter Co. Fair	100%	100%	100%
Exhibit Means	13.3	24.2	22.5
Award Means	12.0	18.8	19.1
Group 3: (n=13)			
Enter Co.Fair	92.3%	92.3%	92.3%

Exhibit Means	5.0	9.0	6.0
Award Means	4.0	7.0	5.0
Group 4: (n=14)			
Enter Co. Fair	92.8%	92.8%	0.0%
Exhibit Means	3.0	2.0	0.0
Award Means	1.0	1.0	0.0
State Fair			
Group 1: (n=14)			
Enter State Fair	100%	100%	100%
Exhibit Means	4.0	12.5	11.8
Award Means	2.7	7.0	6.5
Group 2: (n=15)			
Enter State Fair	100%	100%	100%
Exhibit Means	5.1	7.0	10.8
Award Means	5.1	5.3	3.6
Group 3: (n=13)			
Enter State Fair	46.1%	68.2%	46.1%
Exhibit Means	2.5	3.0	2.5
Award Means	0.0	0.0	0.0
Group 4: (n=14)			
Enter State Fair	64.3%	92.9%	0.0%
Exhibit Means	1.4 (n=9)	1.0 (n=6)	0.0
Award Means	0.0	0.0	0.0
Completed projects not shown at fair:			
Group 1 means	4.8	4.1	6.4
Group 2 means	2.0	3.1	4.0
Group 3 means	1.0	1.0	<1.0

Group 4 means 3.0 2.0

10. Participation in following events by age ranges:

	9-11 years	12-14 years	15-19 years
Group 1: (n=14)			
Fashion Revue	64.2%	71.4%	64.2%
Approp. Dress	92.8%	92.8%	85.7%
Food/Bread Show	92.8%	78.5%	64.2%
Arts/Craft Show	85.7%	78.5%	42.8%
Speech/Demo.	100.0%	100.0%	100.0%
Co. Livestock	85.7%	92.8%	71.4%
Co. Horse Show	35.&%	28.5%	28.5%
Roundup Contest	0.0%	71.4%	85.7%
Dist. Horse/Liv.	21.4%	42.8%	28.5%
Co. Jdg. Cont.	85.7%	92.8%	78.5%
Dist/Sta. Jdg.	42.8%	64.2%	57.0%
Group 2: (n=15)			
Fashion Revue	60.0%	66.6%	66.6%
Approp. Dress	53.3%	73.3%	80.0%
Food/Bread Show	66.6%	66.6%	73.3%
Arts/Craft Show	66.6%	73.3%	73.3%
Speech/Demo.	100.0%	100.0%	100.0%
Co. Livestock	80.0%	80.0%	73.3%
Co. Horse Show	13.3%	33.3%	26.6%
Roundup Contest	0.0%	80.0%	86.6%
Dist. Horse/Liv.	33.3%	60.0%	53.3%
Co. Jdg. Cont.	73.3%	93.3%	86.6%
Dist/Sta. Jdg.	46.6%	80.0%	66.6%

Group 3: (n=13)			
Fashion Revue	46.1%	53.8%	38.5%
Approp. Dress	38.5%	69.2%	61.5%
Food/Bread Show	61.5%	69.2%	53.8%
Arts/Craft Show	69.2%	76.9%	69.2%
Speech/Demo.	84.6%	92.3%	84.6%
Co. Livestock	76.9%	61.5%	46.1%
Co. Horse Show	0.0%	0.0%	0.0%
Roundup Contest	0.0%	15.3%	0.0%
Dist. Horse/Liv.	7.6%	15.3%	0.0%
Co. Jdg. Cont.	61.5%	69.2%	38.5%
Dist/Sta. Jdg.	7.6%	30.7%	15.3%
Group 4: (n=14)			
Fashion Revue	42.8%	35.7%	
Approp. Dress	85.7%	57.1%	
Food/Bread Show	92.8%	64.3%	
Arts/Craft Show	85.7%	78.5%	
Speech/Demo.	92.8%	78.5%	
Co. Livestock	71.4%	42.8%	
Co. Horse Show	0.0%	0.0%	
Roundup Contest	0.0%	0.0%	
Dist Horse/Liv.	0.0%	0.0%	
Co. Jdg. Cont.	50.0%	28.5%	
Dist/Sta. Jdg.	0.0%	0.0%	

11. Percent winning awards in any of above events by age range:

	9-11 years	12-14 years	15-19 years
Group 1 (n=14)	100%	100%	100%

Group 2 (n=15)	60%	86.6%	100%
Group 3 (n=13)	53.8%	46.1%	23%
Group 4 (n=14)	42.8%	35.7%	0%

12. Percent completing county report form by age range:

	9-11 years	12-14 years	15-19 years
Group 1 (n=14)	100%	100%	100%
Group 2 (n=15)	93.3%	100%	100%
Group 3 (n=13)	61.5%	46.1%	53.8%
Group 4 (n=14)	64.3%	14.3%	0.0%

13. Number of county awards received on record book by age range:

	9-11 years	12-14 years	15-19 years
Group 1: (n=14)			
Mean	3.2	4.0	4.5
Range	3-12	2-4	2-16
Group 2: (n=15)			
Mean	3.3	5.0	7.6
Range	3-12	1-14	1-17
Group 3: (n=13)			
Mean	3.2	3.6	3.7
Range	1-7	1-8	1-10
Group 4: (n=14)			
Mean	1.0	1.0	
Range	1	1-2	

Questions 14-20 do not apply to Group 4

14. Percent completing National Report Form:

Group 1 (n=14)	100.0%
Group 2 (n=15)	100.0%

Group 3 (n=13) 46.1%

15. Percent entering a record book in state award programs:

Group 1 (n=14) 100.0%

Group 2 (n=15) 100.0%

Group 3 (n=13) 7.6%

16. Percent entering in state scholarship programs:

Group 1 (n=14) 100.0%

Group 2 (n=15) 80.0%

Group 3 (n=13) 0.0%

Questions 17-19 apply to Group 1 only

17. Percent a national winner in a 4-H project:

Group 1 (n=14) 71.5%

18. Percent in State Blue Award Group for Hall of Fame:

Group 1 (n=14) 57.0%

19. Percent a Hall of Fame Winner:

Group 1 (n-14) 0.0%

20. Percent attended National 4-H Conference:

Group 1 35.7%

Group 2 20.0%

Group 3 0.0%

21. Percent holding office by age range:

	9-11 years	12-14 years	15-19 years
Group 1: (n=14)			

Local	92.8%	100.0%	100.0%
County	7.0%	64.2%	100.0%
District	0.0%	14.2%	57.1%
State	0.0%	0.0%	28.5%
Group 2: (n=15)			
Local	86.6%	100.0%	93.3%
County	13.3%	66.6%	100.0%
District	0.0%	13.3%	33.3%
State	0.0%	0.0%	20.0%
Group 3: (n=13)			
Local	53.8%	84.6%	92.3%
County	0.0%	61.5%	46.15
District	0.0%	0.0%	0.0%
State	0.0%	0.0%	0.0%
Group 4: (n=14)			
Local	64.3%	71.4%	
County	0.0%	0.0%	
District	0.0%	0.0%	
State	0.0%	0.0%	

22. Age left 4-H program if not completing nine years:

Group 4: (n=14)

Mean 13.4 years

Range 12-14 years

Reasons for leaving 4-H:

Got into more organizations (3)

4-H wasn't very organized in my area

Not enough time (4)

Did not like all the paperwork involved with record books (2)

Friends not in 4-H (3)

Club disbanded

Only was to get recognition was to fill out record book (2)

Select few got all the honors

Not as much fun as it was when I started.

23. Reasons for staying in 4-H after age 14:

Group 1: (n-14)

Philmont backpacking trip

Parent a local leader (3)

Did not have a choice--a family decision

Trips (3)

Enjoyed participating in fairs

Meeting other kids (2)

Leadership opportunities (2)

Opportunity to become responsible adult, grow and learn

Opportunities available (2)

Had fun in 4-H (2)

Wanted to win awards and scholarships (2)

Heavily involved and thought of leaving never crossed my mind

Family involvement

Group 2: (n=15)

Fun and exciting (7)

Receiving opportunities that friends were not (6)

Being prepared for future

Made good friends in 4-H (7)

Wide range of subject matter

Kept me involved and motivated

Trips available (5)

Parent a Leader (2)

Livestock involvement

4-H did not require as much time as FFA so chose 4-H

Benefited through 4-H projects

Wanted to win some of the awards and scholarships

Family involvement (3)

Group 3: (n=13)

Did my best work at ages 14-15 and record book looked good in a few areas

Had made many friends (2)

Learned valueable skills and wanted to keep learning new skills and improving what had already learned

Program areas, judging, showing

Leadership responsibilities (2)

Enjoyed it (3)

Learned a lot (4)

Helped me achieve other goals

Did not want to join FFA but wanted to continue showing cattle

24. Percent belonging to other youth organizations:

Group 1 (n=14)	100.0%
Group 2 (n=15)	100.0%
Group 3 (n=13)	100.0%

Group 4 (n=11) 100.0%

List of other organizations: (n=number listing answer)

Group 1: (n=12)

FFA (3)	FBLA (2)
FHA (2)	Cattle Breed Associations
School Clubs (6)	National Honor Society (2)
Student Council (4)	Scouts
Church Youth Groups (4)	

Mean Number: 2

Group 2: (n=12)

FHA (6)	Art Club (2)
Honor Society (4)	FFA (2)
Scouts	Church Youth Groups (2)
Student Council (3)	FBLA
School Organizations (6)	Band (2)
Cattle Breed Association	

Mean Number: 2.4

Group 3: (n=10)

Boy Scouts	School Organizations (3)
FFA (2)	Student Council (2)
National Honor Soc. (2)	Church Organization (4)
Cattle Breed Associations	

Mean Number: 1.5

Group 4: (n=10)

Band (4)
FFA (3)
FHA (2)
Student Council (2)
Church Youth Groups (2)
School Organizations (2)
Scouts

Mean Number: 1.6

25. Organization into which put most effort and why:

Group 1:

Student Council-easier to attend during school hours

4-H--pressure from mother in younger years, then put greatest efforts where reward was highest

4-H--opportunities in leadership (2)

Worked hard in all of organizations, but 4-H took most time

4-H--awards

FFA--because project was beef and they require lot of daily time

Group 2:

4-H--gave my most opportunities

4-H--friends and fun

4-H--held my interest, family organization, chance to excell

4-H--involved in many activities and enjoyed it

4-H & FFA--president of both. Worked simultaneously in my life (2)

All groups important but 4-H provided widest range of topics and experiences

4-H--had most to offer in return. Friends and travel

4-H--because of things involved in and awards

Liked all my organizations and 4-H was a different kind of work and took most time

Group 3:

Boy Scouts--because your rewards were direct result of your efforts while in 4-H your work was compared to someone else through sometimes seemingly biased judges

4-H--because was in it longer and had already devoted lot of time to it

4-H--because had made commitments that could not be broken

4-H--had bulk of responsibility in it

4-H--presented greatest possibilities for achievement and recognition

4-H--got most benefits from it and could be more active in it

4-H--other organizations did not give me as much leadership

4-H--family and friends involvement (2)

National Breed Association--was a national officer

Group 4:

Band--enjoyed playing music

FFA--did lot of showing after left 4-H

Scouts--earned Eagle Scout rank

26. Strong points of 4-H program:

Group 1:

Learning skills and life skills (2)

Opportunities (2)

Awards and scholarships (3)

High level of involvement youth can attain

Project work

Education

Total family involvement

Brings new challenges to you

Meeting people and making life-long friends (2)

Public speaking skills (3)

Leadership opportunities (2)

Trips (2)

Exposure to variety of career opportunities

Preparing for future

Teaching socialization

Group 2:

Experiences and learning opportunities (5)

Contacts made

Awards (3)

Exposure to new places and cultures through trips (2)

Bond of friendship between members (5)

Wide range of topics

Family participation (3)

Something for everyone (2)

Allows one to start and finish a project (2)

Teaches responsibility and public speaking skills (2)

Small Clubs-closeness you have with leaders

Older 4-H members

Camps, activities

State support

Local Leaders

Improve self-concept

Enhance decision-making abilities

Group 3:

Allows one to assume project from start to finish

Allows all participants chances for leadership roles (4)

Allows work in other areas such as public speaking, etc. (2)

Variety in project areas and program diversity (3)

Networking

Out-of-town activities to let you see other sides of life

Direction for kids to put trust in and have guidance

Activities

Group 4:

Gives kids something to do

Teaches kids new things

Family participation (2)

Variety of projects

Public speaking skills

27. Weak points of the 4-H program

Group 1:

Keeping teens involved (2)

Keeping enrollment up

Local club meetings

Contests--not enough feedback on how to improve for next time

Not enough publicity for 4-H and the winners

Image of 4-H

Not enough family involvement

Funding problems

Lack of individual recognition for kids who don't dominate a program

Promotion for city kids

Group 2:

Selection for certain awards

Inability to make all members aware of all awards

Many 4-H members don't see 4-H past the county level

Agents not open-minded to suggestions

Stereotype image still connected with 4-H (hick) (3)

Not enough family involvement

Funding of programs (2)

Compatibility with school programs

Retrenchment of programs back to ag basis

Many single out one or two strong students for county and halt other people's progress

Not enough support staff for individual attention

Have to buy project manuals

Record books are too complicated

Not enough prestige

Hard to get good leaders for small clubs

Competition

Too many times adults run program and not the kids

Group 3:

Parents competing through their kids

Endless paperwork at record book time

No recognition of projects unless turn in a record book

Lack of county support

Some programs not emphasized well

Lack of cooperation between local clubs

Increase responsibility of county officers

Not enough people to implement program

Getting new members

Keeping members

Group 4:

If not organized, doesn't help kids

Parents do lot of work for kids

Selection for various awards

No recognition for kids if not in competition

Not much for older members if not interested in being a state officer, etc.

Keeping older members

28. Most important honors and accomplishments since high school graduation

Group 1:

President's Leadership Council (2)

Panhellenic Scholarship Committee

Various honor fraternities (2)

OSU Student Body President

Harry S. Truman Scholar ($28,000)

OSU Top Ten Freshmen

Honor Rolls (3)

Scholarships Received (3)

Hugh O'Brien Honorary Member

Group 2:

Scholarship received (7)

Member of Dean's Speaker Bureau (2)

Officer for college organizations (3)

Member of professional organization (2)

Outstanding Female Student--College of Home Economics

OSU Ambassador

Collegiate Livestock Judging placing in National Contest

Ag Senator for SGA

Outstanding Kerr-Drummond Exec.

Nominee for Truman Scholarship

Honorary organizations (3)

Group 3:

Academic scholarships (3)

Class officer at college (2)

Honor Roll

Honor Societies (2)

Group 4:

Academic scholarship (3)

Various honor fraternities (3)

Honor Rolls (3)

Officer in social organizations (2)

APPENDIX D

PERSONAL ATTITUDES AND OPINIONS MEASURE

4-H AND YOU: ATTITUDES AND OPINIONS

This is not a test. There are no "right" or "wrong" answers, and you need not be an expert to complete this questionnaire. The purpose of this questionnaire will best be served if you describe yourself and state your opinions as accurately as possible.

Please read each item carefully and mark the one bubble that best corresponds to your agreement/disagreement or true/false answer. Answer every item. Note that the answers are numbered down the columns on the answer sheet;make sure that your answer is marked in the correct numbered space. If you change your mind, please erase your first answer completely.

SECTION I

In this section you will answer either true or false for each statement. If you agree with a statement, or feel that it is true about you, answer true by marking T on your answer sheet. If you disagree with a statement, or feel that it is not true about you, answer false by marking F on your answer sheet. Be sure to answer either True or False for every statement, even if you have to guess at some.

1. I dream frequently about things that are best kept to myself.
2. I get nervous when I have to ask someone for a job.
3. Most people are secretly pleased when someone else gets into trouble.
4. I dislike to have to talk in front of a group of people.
5. It is hard for me just to sit still and relax.
6. A person needs to "show off" a little now and then.
7. Most people inwardly dislike putting themselves out to help other people.
8. Most people would tell a lie if they could gain by it.
9. It makes me uncomfortable to put on a stunt at a party even when others are doing the same sort of thing.
10. Our thinking would be a lot better off if we would just forget about words like "probably," "approximately," and "perhaps".
11. I like science.
12. I am apt to show off in some way if I get the chance.
13. It takes a lot of argument to convince most people of the truth.
14. There's no use in doing things for people; you only find that you get it in the neck in the long run.
15. I like to boast about my achievements every now and then.
16. It is hard for me to sympathize with someone who is always doubting and unsure about things.
17. I am quite a fast reader.
18. Criticism or scolding makes me very uncomfortable.
19. I liked Alice in Wonderland by Lewis Carroll.
20. I doubt whether I would make a good leader.
21. I am often bothered by useless thoughts which keep running through my mind.
22. Maybe some minority groups do get rough treatment, but it's no business of mine.
23. I'm not the type to be a political leader.
24. It bothers me when something unexpected interrupts my daily routine.
25. I am sometimes cross and grouchy without any good reason.
26. I like large, noisy parties.
27. I don't like to undertake any project unless I have a pretty good idea as to how it will turn out.
28. I can be friendly with people who do things which I consider wrong.
29. Society owes a lot more to the businessman and the manufacturerer than it does to the artist and the professor.
30. I am very slow in making up my mind.

31. People don't need to worry about others if only they look after themselves.
32. I have strong political opinions.
33. Strong people do not show their emotions and feelings.
34. Every now and then I get into a bad mood, and no one can do anything to please me.
35. I am a better talker than a listener.
36. Most people will use somewhat unfair means to gain profit or an advantage rather than to lose it.
37. The idea of doing research appeals to me.
38. I do not always tell the truth.
39. Several times a week I feel as if something dreadful is about to happen.
40. I had my own way as a child.
41. I often wish people would be more definite about things.
42. I would like to be an actor on the stage or in the movies.
43. Teachers often expect too much work from the students.
44. I feel uneasy indoors.
45. People seem naturally to turn to me when decisions have to be made.
46. I think I would like the work of a school teacher.
47. It seems that people used to have more fun than they do now.
48. When in a group of people I usually do what the others want rather than make suggestions.
49. Sometimes I just can't seem to get going.
50. Sometimes I have the same dream over and over.
51. If given the chance I would make a good leader of people.
52. Most people make friends because friends are likely to be useful to them.
53. I usually don't like to talk much unless I am with people I know very well.
54. I tend to be on my guard with people who are somewhat more friendly than I had expected.
55. I would like to be a journalist.
56. I hardly ever feel pain in the back of the neck.
57. I have a natural talent for influencing people.
58. People pretend to care more about one another than they really do.
59. I seldom worry about my health.
60. Once a week or oftener I feel suddenly hot all over, without apparent cause.
61. I would like the job of a foreign correspondent for a newspaper.
62. When prices are high you can't blame people for getting all they can while the getting is good.
63. I read at least ten books a year.
64. I think I would enjoy having authority over other people.
65. People today have forgotten how to feel properly ashamed of themselves.
66. I like to read about science.
67. I like to give orders and get things moving.
68. I often lose my temper.
69. The person who provides temptation by leaving valuable property unprotected is about as much to blame for its theft as the one who steals it.
70. I would be willing to describe myself as a pretty "strong" personality.
71. I often act on the spur of the moment without stopping to think.
72. I commonly wonder what hidden reason another person may have for doing something nice for me.
73. I hate to be interrupted when I am working on something.
74. I like to go to parties and other affairs where there is lots of loud fun.
75. I do not dread seeing a doctor about a sickness or injury.
76. I like to be the center of attention.
77. Parents are much too easy on their children nowadays.
78. I think I would like to drive a racing car.

79. I certainly feel useless at times.
80. When I work on a committee I like to take charge of things.
81. I frequently notice my hand shakes when I try to do something.
82. I like to talk before groups of people.
83. Only a fool would ever vote to increase his own taxes.
84. Most people are honest chiefly through fear of being caught.
85. I must admit I am a pretty fair talker.
86. I very much like hunting.
87. I think I am usually a leader in my group.
88. I must admit that I have a bad temper, once I get angry.
89. I am bothered by people outside, on streetcars, in stores, etc., watching me.
90. I often feel as though I have done something wrong or wicked.
91. I would have been more successful if people had given me a fair chance.
92. Sometimes I think of things too bad to talk about.

SECTION II

In this section you will mark the bubble on the answer sheet which best represents your opinion. There are no "right" or "wrong" answers. Please describe yourself and state your opinions as accurately as possible.

Mark "SD" if the statement is definitely false or you strongly disagree.
Mark "D" if the statement is mostly false or you disagree.
Mark "N" if the statement is about equally true or false, or if you cannot decide, or if you are neutral on the statement.
Mark "A" if the statement is mostly true or you agree.
Mark "SA" if the statement is defintely true or you strongly agree.

1. I really like most people I meet.
2. I have a very active imagination.
3. I shy away from crowds of people.
4. Without strong emotions, life would be uninteresting to me.
5. I am dominant, forceful, and assertive.
6. I'm pretty set in my ways.
7. I often crave excitement.
8. Aesthetic and artistic concerns aren't very important to me.
9. I rarely use words like "fantastic!" or "sensational!" to describe my experiences.
10. I sometimes lose interest when people talk about very abstract, theoretical matters.
11. I believe we should look to our religious authorities for decisions on moral decisions.
12. Many people think of me as somewhat cold and distant.
13. As a child I rarely enjoyed games of make believe.
14. I like to have a lot of people around me.
15. I am sometimes completely absorbed in music I am listening to.
16. I have often been a leader of groups I have belonged to.
17. How I feel about things is important to me.
18. I'm not the kind of person who must always be busy with something.
19. I think it's interesting to learn and develop new hobbies.
20. I have sometimes done things just for "kicks" or "thrills".
21. I often enjoy playing with theories or abstract ideas.
22. I have never literally jumped for joy.
23. I believe that laws and social policies should change to reflect the needs of a changing world.
24. I don't get much pleasure from chatting with people.

25. I try to keep all my thoughts directed along realistic lines and avoid flights of fancy.
26. I prefer small parties to large ones.
27. Watching ballet or modern dance bores me.
28. I sometimes fail to assert myself as much as I should.
29. I experience a wide range of emotions or feelings.
30. When I do things, I do them vigorously.
31. I enjoy solving problems or puzzles.
32. I have sometimes experienced intense joy or ecstasy.
33. I believe letting students hear controversial speakers can only confuse and mislead them.
34. I'm known as a warm and friendly person.
35. I enjoy concentrating on a fantasy or daydream and exploring all its possibilities, letting it grow and develop.
36. I never hesitate to assert my rights if I feel I'm being taken advantage of.
37. Certain kinds of music have an endless fascination for me.
38. I have a leisurely style in work and play.
39. I like to follow a strict routine in my work.
40. Fast cars and motorcycles have never had much appeal to me.
41. Once I find the right way to do something, I stick to it.
42. I am not a cheerful optimist.
43. I enjoy working on "mind-twister"-type puzzles.
44. I really enjoy talking to people.
45. I have an active fantasy life.
46. I often feel as if I'm bursting with energy.
47. I believe that the different ideas of right and wrong that people in other societies have may be valid for them.
48. Sometimes I bubble with happiness.
49. I often try new and foreign foods.
50. My work is likely to be slow but steady.
51. I believe that loyalty to one's ideals and principles is more important than "open-mindedness".
52. I find it easy to smile and be outgoing with strangers.
53. I have little interest in speculating on the nature of the universe or the human condition.
54. I love the excitement of roller coasters.
55. Poetry has little or no effect on me.
56. I'd rather vacation at a popular beach than an isolated cabin in the woods.
57. I don't like to waste my time daydreaming.
58. I usually prefer to do things alone.
59. I rarely experience strong emotions.
60. I like to be where the action is.
61. In meetings, I usually let others do the talking.
62. I find it hard to get in touch with my feelings.
63. I really feel the need for other people if I am by myself for long.
64. I consider myself broad-minded and tolerant of other people's lifestyles.
65. I don't consider myself especially "light-hearted".
66. I am intrigued by the patterns I find in art and nature.
67. I have strong emotional attachments to my friends.
68. I prefer to spend my time in familiar surroundings.
69. I would rather go my own way than be a leader of others.
70. I find philosophical arguments boring.
71. I wouldn't enjoy vacationing in Las Vegas.
72. I seldom pay much attention to my feelings of the moment.
73. I usually seem to be in a hurry.
74. Sometimes when I am reading poetry or looking at a work of art, I feel a chill or wave of excitement.

75. I am a cheerful, high-spirited person.
76. I have a lot of intellectual curiosity.
77. I prefer jobs that let me work alone without being bothered by other people.
78. I think that if people don't know what they believe in by the time they're 25, there's something wrong with them.
79. I'm attracted to bright colors and flashy styles.
80. I seldom notice the moods or feelings that different environments produce.
81. I take a personal interest in the people I work with.
82. On a vacation, I prefer going back to a tried and true spot.
83. My life is fast-paced.
84. I would have difficulty just letting my mind wander without control or guidance.
85. Other people often look to me to make decisions.
86. I enjoy reading poetry that emphasizes feelings and images more than story lines.
87. Others think of me as being modest and unassuming.
88. I find it easy to empathize--to feel myself what others are feeling.
89. I would rather watch an event on television than be there in the audience.
90. If I feel my mind starting to drift off into daydreams, I usually get busy and start concentrating on some work or activity instead.
91. I am a very active person.
92. I follow the same route when I go someplace.
93. I tend to avoid movies that are shocking or scary.
94. I have a wide range of intellectual interests.
95. I laugh easily.
96. I believe that the "new morality" of permissiveness is no morality at all.

APPENDIX E

RAW DATA

Appendix E-1

Personal Data and Experiences Data,

Raw Data, Group 1

RAW DATA
Personal Data and Experiences
Group 1

1. 18, 21, 24, 22, 21, 20, 19, 20, 19, 19, 20, 18, 22, 21
2. A.--1,2,1,5,4,2,2,3,1,3,2,1,4,3
   B.--See summary sheet
   C.--4.0,3.1,3.4,3.0,3.35,3.95,3.8,3.1,3.2,3.8,3.9,3.4
3. 1,1,2,1,2,2,2,1,2,2,1,2,2,1
4. Vici,Keyes,Agra,Orlando,Sand Springs,Hugo,Eldorado,Watonga, El Reno,Cache,Enid(2),Sayre,Owasso
5. 3,3,3,2,2,2,3,3,3,3,4,3,2,3
6. 9,9,9,9,9,9,9,9,10,9,9,9,9,9
7. 10,10,8,9,10,10,9,10,8,9,10,10,9,9
8. 1=3,1=3,1=3,1=1,1=3,1=3,1=3,1=1,1=2,1=3,1=3,1=3,1=1,1=3
   2=2,2=3,2=3,2=1,2=3,2=3,2=3,2=2,2=2,2=2,2=3,2=3,2=1,2=3
   3=1,3=2,3=3,3=1,3=3,3=3,3=3,3=1,3=1,3=2,3=2,3=3,3=2,3=3
9. a=1,a=1,a=1,a=1,a=1,a=1,a=1,a=1,a=1,a=1,a=1,a=1,a=1,a=1
   1=15,12 1=20,5 1=10,15 1=18,18 1=21,14 1=15,12 1=10,10 1=8,6 1=7,1 1=15,10 1=5,4 1=6,2 1=6,4 1=7,3
   2=15,10 1=30,17 2=115,86 2=18,18 2=93,78 2=15,12 2=10,10 2=7,6 2=5,5 2=12,12 2=5,5 2=5,2 2=15,8 2=8,4
   3=8,7 3=44,17 3-117,98 3=18,18 3=20,20 3=10,10 3=5,2 3=5,5 3=9,8 3=6,4 3=5,5 3=8,4 3-9,7
   b=1,b=2,b=1,b=1,b=1,b=1,b=1,b=1,b=1,b=1,b=1,b=1,b=1,b=1
   1=5,3 1=0 1=5,2 1=18,18 1=2,2 1=5,1 1=3,2 1=0 1=3,2 1=1,1 1=2,0 1=2,1 1=3,0 1=3,1
   2=7,6 2=0 2=103,49 2=18,18 2=5,2 2=7,3 2=3,3 2=1,1 2=3,2 2=3,1 2=3,1 2=3,2 2-3,1 2-4,2
   3=5,4 3=0. 3-98,35 3=18,18 3=4,3 3=10,6 3=3,3 3=0 3=2,2 3=6,4 3=4,1 3=5,3 3=4,2 3=5,4
   c
   1=3 1=0 1=0 1=0 1=1 1=0 1=20 1=0 1=4 1=0 1=4 1=2 1=2 1=0
   2=1 2=0 2=0 2=1 2=0 2=0 2=20 2=0 2=6 2=1 2=3 2=1 2=2 2=0
   3=4 3=0 3=0 3=1 3=4 3=0 3=20 3=0 3=10 3=1 3=7 3=0 3=4 3=0
10. a=1,2 a=0 a=1,2,3 a=0 a=1,2,3 a=1,2,3 a=1,2,3 a=0 a=1,2,3 a=1,2,3 a=2,3 a=1,2,3 a=1,2,3 a=0
    b=1,2 b=1,2,3 b=1,2,3 b=1,2,3 b=1,2,3 b=0 b=1,2,3 b=1,2,3 b=1,2,3 b=1,2,3 b=1,2,3 b=1,2,3 b=1,2,3
    c=1 c=1 c=1,2,3 c=1,2 c=1,2,3 c=1,2,3,c=1,2,3 c=0 c=1,2,3 c=1,2,3 c=1,2,3 c=1,2,3 c=1,2,3 c=1,2
    d=1 d=0 d=1,2,3 d=0 d=1,2,3 d=1,2,3 d=1,2,3 d=1,2 d=1,2 d=1,2 d=1,2,3 d=1,2 d=1,2,3 d=1,2
    e=1,2,3 e=1,2,3 e=1,2,3 e=1,2,3 e=1,2,3 e=1,2,3 e=1,2,3 e=1,2,3 e=1,2,3 e=1,2,3 e=1,2,3 e=1,2,3 e=1,2,3 e=1,2,3
    f=1,2,3 f=0 f=1,2,3 f=1,2,3 f=1,2,3 f=1,2,3 f=1,2,3 f=1,2,3 f=1,2,3 f=1,2,3 f=2 f=1,2 f=1,2 f=1,2,3 f=1,2,3
    g=1,2,3 g=0 g=1,2,3 g=0 g=0 g=1,2,3 g=2,3 g=0 g=1 g=0 g=0 g=0 g=1 g=0
    h=3 h=2,3 h=1,2,3 h=0 h=2,3 h=0 h=2,3 h=3 h=2,3 h=2,3 h=2,3 h=2,3 h=2,3 h=2,3
    i=0 i=0 i=0 i=1,2,3 i=2 i=0 i=2,3 i=2 i=1,2,3 i=0 i=0 i=0 i=1 i=2,3

j=1,2 j=1 j=1,2,3 j=1,2,3 j=1,2,3 j=1,2,3 j=1,2,3 j=2 j=2,3
j=1,2,3 j=1,2,3 j=1,2,3 j=1,2,3
k=0 k=0 k=1,2,3 k=0 k=1,2 k=1,2,3 k=2,3 k=0 k=0 k=2,3
k=1,2,3 k=1,2,3 k=1,2,3 k=2,3

11. a=? a=? a=33,63,75 a=18,18,18 a=? a=6,7,10 a=? a=5,4 a=4,4,4
a2,1,2 a=? a=6,7,7 a=? a=6,4,9
b=? b=? b=3,5,7 b=3,6A6 b=6,21,14 b=2,3,9 b=4.7,8 b=4
b=8,8,8 b=2,2,4 b=1,3,2 b=1,3,3 b=3,2,2 b=1,4,5
c=? c=? c=20,25,40 cA18,18,18 c=30,90,50 c=5,7,15 c=50,50,50
c=8,7 c=10,10,10 c=21,15,20 c=10,15,20 c=12,16,20
c=10,10,10 c=4,8,9
d=0 d=0 d=13,44,35 d=0 d=0 d=0 d=0 d=0 d=0 d=1,1,1 d=0
s=1,0,3 d=0 d=2

12. 1=1 1=1 1=1 1=1 1=1 1=1 1=1 1=1 1=1 1=1 1=1 1=1 1=1 1=1
2=1 2=1 2=1 2=1 2=1 2=1 2=1 2=1 2=1 2=1 2=1 2=1 2=1 2=1
3=1 3=1 3=1 3=1 3=1 3=1 3=1 3=1 3=1 3=1 3=1 3=1 3=1 3=1

13. 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1=2 1=6 1=3 1=3 1=3 1=12 1=3 1=3 1=4 1=1 1=0 1=1 1=2 1=1
2=2 2=6 2=4 2=3 2=7 2=14 2=5 2=4 2=4 2=2 2=1 2=2 2=2 2=2
3=1 3=6 3=3 3=3 3=2 3=16 3=7 3=4 3=4 3=2 3=1 3=4 3=2 3=9

14. 1 1 1 1 1 1 1 1 1 1 1 1 1 1
15. 1 1 1 1 1 1 1 1 1 1 1 1 1 1
16. 1 1 1 1 1 1 1 1 1 1 1 1 1 1
17. 1 1 1 2 2 2 2 1 1 1 1 1 1 1
18. 2 2 2 1 1 2 1 1 2 1 1 1 2 1
19. 2 2 2 2 2 2 2 2 2 2 2 2 2 2
20. 1 2 2 1 1 2 2 1 1 2 2 2 2 2

21. a=1,2,3 a=1,2,3 a=2,3 a=1,2,3 a=1,2,3 a=1,2,3 a=1,2,3
a=1,2,3 a=1,2,3 a=1,2,3 a=1,2,3 a=1,2,3 a=1,2,3 a=1,2,3
b=2,3 b=3 b=3 b=3 b=2,3 b=1,2,3 b=3 b=3 b=2,3 b=2,3 b=2,3
b=2,3 b=2,3 b=2,3
c=3 c=0 c=0 c=0 c=2,3 c=2,3 c=0 c=3 c=0 c=3 c=0 c=3 c=3 c=3
d=3 d=0 d=0 d=0 d=3 d=2,3 d=0 d=3 d=0 d=0 d=0 d=0 d=0 d=0

24. 1 1 1 1 1 1 1 1 1 1 1 1 1 1

25-28. See summary sheet

GROUP 2

1. 22,20,21,21,18,22,20,21,22,20,20,19,19,18,19

2. a=5,a=2,a=3,a=4,a=1,a=4,a=3,a=3,a=5,a=2,a=2,a=1,a=2,a=1,a=2
b see summary sheet
c=3.4 3.3 3.0 3.0 3.4 2.9 2.8 3.5 3.4 3.0 3.3 3.5 3.3 3.5
3.4

3. 1 2 2 2 1 1 2 2 1 2 1 2 2 1 2

4. Mutual, Ft. Gibson, Cordell, Sallisaw, Red Rock, Newcastle, Moore, Ft. Towson, Sulphur, Ardmore, Tulsa (2), Muskogee, Walters, Stillwater

5. 2 4 2 2 3 4 2 3 3 2 2 4 3 3 2

6. 9 9 9 9 9 9 9 9 9 9 11 9 9 9 9

7. 9 9 10 10 9 10 9 10 9 10 7 9 9 9 9

8. 1=1 1=3 1=1 1=3 1=1 1=2 1=2 1=2 1=3 1=3 1=1 1=1 1=3 1=2 1=1
2=1 2=3 2=3 2=3 2=2 2=2 2=3 2=2 2=2 2=3 2=1 2=2 2=3 2=2 2=2
3=1 3=3 3=3 3=3 3=3 3=3 3=3 3=2 3=2 3=3 3=1 3=3 3=3 3=3 3=3

9. a=1 a=1 a=1 a=1 a=1 a=1 a=1 a=1 a=1 a=1 a=1a=1 a=1 a=1 a=1
1=18,18 1=53,25 1=4,0 1=23,15 1=3,3 1=6,0 1=30,25 1=12,8
1=15,11 1=15,12 1=2,1 1=19,16 1=10,10 1=3,3 1=14,10
2=18,18 2=88,40 2=8,0 2=103,78 2=4,4 2=14,0 2=40,35 2=12,8
2=8,7 2=15,12 2=3,3 2=27,22 2=10,10 2=4,2 2=9,6
3=18,18 3=51,23 3=15,0 3=73,50 3=5,7 3=21,0 3=45,40 3=12,8
3=7,4 3=20,20 3=12,9 3=33,26 3=10,10 3-6,6 3=9,7
b=1 b=1 b=1 b=1 b=1 b=1 b=1 b=1 b=1 b=1 b=1 b=1 b=1 b=1b=1b=1
1=18,18 1=1,0 1=8,0 1=2,2 1=2,1 1=3,1 1=18,16 1=3,1 1=5,5
1=5,1 1=0,0 1=3,2 1=3,2 1=2,1 1=1,0
2=18,18 2=7,2 2=15,0 2=5,2 2=3,2 2=36,0 2=24,20 2=5,2
2=3,2 2=7,3 2=0,0 2=7,5 2=3,3 2=2,2 2=2,1
3=18,18 3=3,1 3=20,0 3=4,3 3=4,4 3=47,0 3=26,21 3=5,2
3=2,2 3=10,6 3=3,3 3=10,8 3=3,3 3=4,2 3=4,4
c
1=0 1=0 1=4 1=1 1=7 1=1 1-0 1=0 1=0 1=0 1=0 1=0 1=0 1=5
1=2
2=1 2=1 2=8 2=0 2=10 2=2 2=0 2=0 2=0 2=0 2=3 2=13 2=0
2=6 2=4
3=1 3=0 3=15 3=4 3=20 3=4 3=0 3=0 3=0 3=0 3=2 3=15 3=0
3=6 3=5

10. a=0 a=1,2,3 a=1,2,3 a=1,2,3 a=0 a=0 a=1,2,3 a=1,2,3 a=0
a=1,2,3 a=2,3 a=1,2,3 a=1,2,3 a=0 a=1,2,3
b=1,2,3 b=3 b=2,3 b=1,2,3 b=1,2,3 b=1,2,3 b=0 b=1,2,3
b=0 b=0 b=2,3 b=1,2,3 b=1,2,3 b=1,2,3 b=2,3
c=1,2 c=0 c=3 c=1,2,3 c=0 c=3 c=1,2,3 c=1,2,3 c=1,2,3
c=1,2,3 c=0 c=1,2,3 c=1,2,3 c=1,2,3 c=1,2,3
d=0 d=0 d=3 d=1,2,3 d=1,2,3 d=1,2,3 d=1,2,3 d=1,2,3 d=1,2,3
d=1,2,3 d=0 d=1,2,3 d=1,2,3 d=2 d=1,2,3
e=1,2,3 e=1,2,3 e=1,2,3 e=1,2,3 e=1,2,3 e=1,2,3 e=1,2,3
e=1,2,3 e=1,2,3 e=1,2,3 e=1,2,3 e=1,2,3 e=1,2,3 e=1,2,3
e=1,2,3
f=1,2,3 f=0 f=1,2,3 f=1,2,3 f=1,2,3 f=1,2,3 f=1,2,3 f=0
f=0 f=1,2,3 f=1,2,3 f=1,2,3 f=1,2,3 f=1,2,3 f=1,2
g=0 g=0 g=0 g=0 g=0 g=0 g=2 g=0 g=0 g=1,2,3 g=0 g=1,2,3
g=2,3 g=2,3 g=0
h=0 h=3 h=2,3 h=2,3 h=2,3 h=2,3 h=2,3 h=2,3 h=2,3 h=0
h=2,3 h=2,3 h=2,3 h=2,3 h=2,3
i=1,2,3 i=1,2,3 i=1,2,3 i=2,3 i=1,2,3 i=2,3 i=1,2,3 i=0
i=0 i=0 i=0 i=0 i=2,3 i=2 i=0
j=1,2,3 j=1,2,3 j=1,2,3 j=2 j=2,3 j=1,2,3 j=1,2,3 j=2,3
j=0 j=1,2,3 j=1,2,3 j=1,2,3 j=1,2,3 j=1,2,3 j=1,2,3
k=0 k=1,2,3 k=1,2,3 k=1,2 k=0 k=2,3 k=1,2,3 k=2 k=0
k=1,2,3 k=2,3 k=1,2,3 k=2,3 k=1,2,3 k=2,3

11. a=18,18,18 a=200,200,200 a=? a=? a=? a=? a=? a=? a-2,3,3
a=6,7,10 a=0,0,9 a=3,9,16 a=0 a=3,9,15 a=2,1,5
b=3,6,6 b=1,1,1 b=5,10,15 b=6,25,15 b=0 b=3,19,31 b=5,10,20
b=3,5,5 b=1,2,2 b=2,3,9 b=0,0,7 b=4,7,19 b-4,7,8 b=3,7,17
b=3,4,7
c=19,18,18 c=15,15,15 c=25,50,100 c=30,90,60 c=0 c=4,115,165
c=25,35,40 c=10,10,10 c=3,3,3 c=5,7,15 c=1,3,30 c=3,9,35
c=50,50,50 c=3,9,21 c=3,9,12
d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=1,1,1 d=0 d=0,0,15 d=0 d=0
d=0 d=0

12. 1=1 1=1 1=1 1=1 1=1 1=1 1=1 1=1 1=1 1=1 1=2 1=1 1=1 1=1 1=1
2=1 2=1 2=1 2=1 2=1 2=1 2=1 2=1 2=1 2=1 2=1 2=1 2=1 2=1 2=1
3=1 3=1 3=1 3=1 3=1 3=1 3=1 3=1 3=1 3=1 3=1 3=1 3=1 3=1 3=1
13. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1=3 1=6 1=3 1=3 1=1 1=0 1=6 1=3 1=11 1=12 1=0 1=4 1=3 1=1 1=0
2=4 2=6 2=5 2=8 2=1 2=6 2=6 2=3 2=12 2=14 2=0 2=8 2=5 2=2 2=1
3=6 3=6 3=3 3=7 3=3 3=1 3=8 3=8 3=5 3=10 3=16 3=7 3=17 3=7 3=4 3=4
14. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
15. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
16. 1 2 1 1 1 2 1 1 1 1 2 1 1 1 1
17. 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
18. 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
19. 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
20. 1 1 2 1 2 2 2 2 2 2 2 2 2 2 2
21. a=2 a=1,2,3 a=1,2,3 a=1,2,3 a=1,2,3 a=1,2,3 a=1,2,3 a=1,2,3 a=1,2,3 a=1,2,3 a=2,3 a=1,2,3 a=1,2,3 a=1,2,3 a=1,2,3
b=2,3 b=3 b=2,3 b=2,3 b=3 b=2,3 b=3 b=1,2,3 b=3 b=1,2,3 b=3 b=2,3 b=2,3
c=0 c=3 c=0 c=2,3 c=3 c=3 c=0 c=0 c=0 c=1,2,3 c=0 c=0 c=0 c=0
24. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
25-28. See Summary sheet

GROUP 3

1. 24 19 24 18 22 20 19 21 20 19 18 18 21
2. a=5 a=1 a=5 a=1 a=4 a=2 a=1 a=3 a=2 a=2 a=1 a=1 a=3
3.6 2.4 4.0 3.6 2.5 3.0 3.0 3.3 2.9 3.2 2.9 3.1 3.5
3. 1 2 1 2 2 2 1 1 2 2 2 1 2
4. Braman, Elk City, Ada, Sallisaw, Fairland, Tuttle, Poteau, Cleveland, Perry, Taloga, Warner, Edmond, Boise City
5. 2 2 4 3 2 4 2 2 3 2 2 3 2
6. 9 9 11 11 9 9 9 9 10 9 9 10 9
7. 9 10 5 7 10 6 8 8 8 9 8 8 8
8. 1=2 1=2 1=1 1=2 1=2 1=1 1=2 1=1 1=2 1=2 1=2 1=1 1=2
2=2 2=2 2=1 2=2 2=2 2=1 2=2 2=1 2=2 2=2 2=2 2=1 2=2
3=2 3=1 3=1 3=1 3=2 3=1 3=2 3=1 3=2 3=2 3=2 3=1 3=2
9. a=1 a=1 a=2 a=1 a=1 a=1 a=1 a=1 a=1 a=1 a=1 a=1 a=1
1=3,2 1=23,21 1=0 1=2,0 1=20,15 1=2,2 1=4,3 1=4,1 1=3,1 1=5,3 1=3,0 1=3,3 1=4,1
2=10,6 2=38,37 2=0 2=10,8 2=15,15 2=2,2 2=9,5 2=6,2 2=8,5 2=6,4 2=4,3 2=6,4 2=4,1
3=10,6 3=21,21 3=0 3=8,7 3=10,10 3=0 3=6,4 3=4,1 3=8,6 3=7,4 3=4,2 3=4,1 3=5,2
b=1 b=1 b=2 b=1 b=1 b=1 b=1 b=1 b=1 b=1 b=1 b=2 b=2
1=0 1=0 1=0 1=0 1=10,0 1=1,0 1=2,0 1=0 1=1,0 1=2,0, 1=0 1=0 1=0
2=3,0 2-3,0 2=0 2=8,0 2=5,0 2=1,0 2=2,0 2=4,0 2=0 2=2,0 2=0 2=0
3=2,0 3=3,0 3=0 3=7,0 3=2,0 3=0 3=1,0 3=0 3=0 3=2,0 3=0 3=1,0 3=0 3=0 3=0

c
1=? 1=2 1=0 1=0 1=5 1=0 1=2 1=1 1=0 1=1 1=0 1=1 1=0
2=? 2=4 2=0 2=2 2=4 2=0 2=2 2=1 2=0 2=1 2=0 2=1 2=2
3=? 3=2 3=0 3=2 3=0 3=0 3=1 3=1 3=0 3=2 3=0 3=1 3=0
10. a=0 a=1,2 a=0 a=2,3 a=1,2,3 a=0 a=0 a=0 a=1,2,3 a=1,2,3
a=1,2 a=0 a=1,2,3
b=0 b=2,3 b=0 b=2,3 b=0 b=0 b=1,2,3 b=1,2 b=2,3 b=1,2,3
b=2,3 b=1,2,3 b=1,2,3
c=0 c=3 c=0 c=2,3 c=1,2,3 c=0 c=1,2 c=1,2 c=1,2,3 c=1,2,3
c=1,2,3 c=1,2 c=1,2,3
d=1,2,3 d=0 d=0 d=2,3 d=1,2,3 d=0 d=1,2,3 d=1,2,3 d=1,2,3
d=1,2,3 d=1,2,3 d=1,2,3 d=1,2
e=1,2,3 e=1,2,3 e=0 e=1,2,3 e=1,2,3 e=2 e=1,2,3 e=1,2,3
e=1,2,3 e=1,2,3 e=1,2,3 e=1,2,3 e=1,2,3
f=1,2,3 f=1,2,3 f=1,2,3 f=0 f=1,2,3 f=1,2 f=1,3 f=0 f=1,2
f=0 f=1 f=1,2,3 f=1,2
g=0 g=0 g=0 g=0 g=0 g=0 g=0 g=0 g=1 g=0 g=0 g=0 g=0
h=2 h=2 h=0 h=0 h=0 h=0 h=0 h=0 h=0 h=0 h=0 h=0 h=0
i=0 i=0 i=2 i=0 i=1,2 i=0 i=0 i=0 i=0 i=0 i=0 i=0 i=0
j=1,2 j=1,2,3 j=2,3 j=2,3 j=1,2,3 j=0 j=1,2,3 j=0 j=1,2
j=0 j=1 j=1,2 j=1,2
k=0 k=2 k=2,3 k=2 k=1,2 3 k=0= k=0 k=0 k=0 k=0 k=0 k=0 k=0
11. a=0 a=0 a=0 a=0 a=0 a=0 a=0 a=0 a=0 a=0 a=0 a=0 a=0
b=0 b=3,5,7 b=0 b=4,2 b=4,8,1 b=0 b=0 b=0 b=1,0 b=0 b=1
b=1,2 b=1,1
c=35,31,28 c=0c=0 c=15,15,20 c=0 c=5,4,1 c=0 c=0 c=2,2 c=1,0
c=4,5 c=4,3
d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0
12. 1=1 1=1 1=2 1=2 1=1 1=2 1=1 1=1 1=1 1=1 1=2 1=1 1=2
2=1 2=1 2=2 2=1 2=1 2=2 2=1 2=1 2=1 2=1 2=2 2=1 2=2
3=1 3=1 3=2 3=1 3=1 3=2 3=1 3=2 3=1 3=2 3=2 3=1 3=2
13. 1 1 2 1 1 2 1 1 1 1 2 1 2
1=2 1=5 1=0 1=0 1=7 =10 1=1 1=2 1=0 1=2 1=0 1=0 1=0
2=4 2=6 2=0 2=6 2=8 2=0 2=2 2=3 2=1 2=1 2=0 2=1 2=0
3=1 3=1 3=0 3=1 3=1 3=0 3=1 3=2 3=1 3=2 3=0 3=1 3=0
14. 1 1 2 2 1 2 1 1 2 2 2 1 2
15. 2 1 2 2 1 2 2 2 2 2 2 2 2
16. 2 2 2 2 2 2 2 2 2 2 2 2 2
17. 2 2 2 2 2 2 2 2 2 2 2 2 2
18. 2 2 2 2 2 2 2 2 2 2 2 2 2
19. 2 2 2 2 2 2 2 2 2 2 2 2 2
20. 2 2 2 2 2 2 2 2 2 2 2 2 2
21. a=2,3 a=2,3 a-3 a=2,3 a=0 a=1,2,3 a=1,2,3 a=1,2,3 a=1,2,3
a=2,3 a-1,2,3 a=1,2,3
b=0 b=2,3 b=3 b=3 b=2,3 b=0 b=2 b=2,3 b=2,3 b=2 b=0 b=2 b=2
c=0 c=0 c=0 c=0 c=0 c=0 c=0 c=0 c=0 c=0 c=0 c=0 c=0
d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0
24. 1 1 1 1 1 1 1 1 1 1 1 1 1
25-28. See summary sheet

GROUP 4

1. 20 22 32 18 18 19 19 20 24 24 212 18 19 23

2. a=2 a=3 a=4 a=1 a=1 a=2 a=1 a=2 a=5 a=5 a=4 a=1 a=2 a=4
3.0 2.2 3.0 3.1 2.8 3.3 3.1 3.4 3.7 3.4 2.9 2.5 2.9 3.3
3. 2 2 1 2 1 2 1 2 2 2 1 1 1 2
4. Mooreland, Woodward, Guymon, Owasso(2), Miami, Oklahoma City, Enid, Durant, McAlester, Bartlesville, Blackwell, Hugo
5. 4 1 2 1 2 3 3 2 2 2 1 3 1 1
6. 9 10 10 9 9 9 9 9 9 10 9 9 9 9
7. 5 3 3 4 3 5 5 4 5 3 4 4 5 5
8. 1=1 1=1 1=1 1=2 1=2 1=1 1=2 1=1 1=1 1=1 1=2 1=2 1=2 1=1
2=1 2=1 2=1 2=1 2=1 2=1 2=1 2=1 2=1 2=1 2=1 2=1 2=2 2=2

9. a=1 a=2 a=1 a=1 a=1 a=1 a=1 a=1 a=1 a=1 a=1 a=1 a=1 a=1
1=2,2 1=0 1=2,1 1=4,0 1=3,1 1=4,4 1=3,1 1=2,1 1=3,2 1=4,3 1=3,1 1=5,3 1=6,3 1=4,2
2=2,2 2=0 2=2,0 2=3,0 2=2,1 2=3,1 2=2,1 2=4,2 2=3,1 2=2,1 2=3,1 2=3,1 2=3,0
b=1 b=2 b=2 b=1 b=2 b=1 b=1 b=2 b=1 b=1 b=1 b=1 b=1 b=2
1=1 1=0 1=0 1=1,0 1=0 1=2,0 1=2,0 1=0 =1=2,2 1=2,1 1=2,0 1=1,1 1=0
2=1 2=0 2=0 2=0 2=0 2=3,0 2=1,0 2=0 2=2,2 2=0 2=0 2=1,0 2=1,0 2=0
c
1=0 1=0 1=0 1=2 1=0 1=0 1=0 1=0 1=0 1=0 1=0 1=0 1=0 1=0
2=0 2=0 2=0 2=0 2=0 2=0 2=0 2=0 2=0 2=0 2=0 2=0 2=0 2=0
10. a=0 a=0 a=0 a=1,2 a=0 a=1,2 a=0 a=1,2 a=1,2 a=1 a=0 a=0 a=0 a=1,2
b=0 b=0 b=1 b=1 b=1,2 b=1,2 b=1,2 b=1,2 b=1 b=1,2 b=1,2 b=1,2 b=1 b=1,2
c=0 c=1,2 c=1 c=1,2 c=1 c=1,2 c=1 c=1,2 c=1,2 c=1,2 c=1,2 c=1 c=1,2 c=1,2
d=0 d=2 d=1,2 d=1 d=1,2 d=1 d=1,2 d=1,2 d=1,2 d=1,2 d=1,2 d=1,2 d=1,2 d=1,2
e=2 e=0 e=1,2 e=1 e=1,2 e=1,2 e=1,2 e=1,2 e=1,2 e=1,2 e=1 e=1,2 e=1,2 e=1,2
f=1,2 f=0 f=1 f=1 f=1 f=1,2 f=1,2 f=0 f=1 f=0 f=0 f=1,2 f=1,2 f=1,2
g=0 g=0 g=0 g=0 g=0 g=0 g=0 g=0 g=0 g=0 g=0 g=0 g=0 g=0
h=0 h=0 h=0 h=0 h=0 h=0 h=0 h=0 h=0 h=0 h=0 h=0 h=0 h=0
i=0 i=0 i=0 i=0 i=0 i=0 i=0 i=0 i=0 i=0 i=0 i=0 i=0 i=0
j=0 j=0 j=0 j=0 j=0 j=1,2 j=1,2 j=1 j=1 j=0 j=1,2 j=1,2 j=0
k=0 k=0 k=0 k=0 k=0 k=0 k=0 k=0 k=0 k=0 k=0 k=0 k=0 k=0
11. a=0 a=0 a=0 a=0 a=0 a=0 a=0 a=0 a=0 a=0 a=0 a=0 a=0 a=0
b=0 b=0 b=0 b=0 b=0 b=0 b=1,2 b=2,2 b=1,0 b=0 b=2,1 b=0 b=2,2
c=1,2 c=0 c=1,2 c=3,0 c=0 c=0 c=8,4 c=4,3 c=10,5 c=4,3 c=4,5 c=8,5 c=7,7 c=12,10
d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0
12. 1=2 1=2 1=1 1=1 1=1 1=1 1=1 1=2 1=2 1=1 1=1 1=2 1=1 1=1
2=2 2=2 2=2 2=1 2=2 2=1 2=2 2=2 2=2 2=1 2=1 2=2 2=2 2=1
13. 2 2 2 1 2 1 2 2 2 1 1 2 2 2
1=0 1=0 1=0 1=1 1=0 1=1 1=0 1=0 1=0 1=1 1=1 1=0 1=0 1=0
2=0 2=0 2=2 2=1 2=2 2=1 2=2 2=0 2=0 2=1 2=1 2=2 2=2 2=1

Questions 14-20 did not apply to this group

21. a=0 a=2 a=2 a=1 a=1 a=1,2 a=1,2 a=1,2 a=1,2 a=2 a=1,2
a=0 a=1,2 a=1,2
b=0 b=0 b=0 b=0 b=0 b=0 b=0 b=0 b=0 b=0 b=0 b=0 b=0 b=0
c=0 c=0 c=0 c=0 c=0 c=0 c=0 c=0 c=0 c=0 c=0 c=0 c=0 c=0
d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0 d=0

22. 14 13 13 13 12 14 14 13 12 13 13 13 14 14

24. 1 1 1 1 1 1 1 1 1 1 1 1 1 1

25-28. See summary sheet

Appendix E-2

Personal Attitudes and Opinions,

Raw Data

PERSONAL ATTITUDES AND OPINIONS RAW DATA

GROUP	SEX	EXT	OPEN	INT	REAL	EXT	OPEN
		(t scores)			(raw scores)		
1	1	61.0	52.5	17	14	121	107
1	1	69.0	72.0	12	26	132	144
1	1	54.5	65.0	12	26	109	133
1	1	65.0	52.5	12	32	128	112
1	1	56.0	33.0	13	26	112	130
1	1	75.0	52.0	12	27	144	111
1	2	51.0	46.5	30	24	98	99
1	2	75.0	58.0	13	27	144	121
1	2	75.0	49.5	14	24	141	107
1	2	55.0	49.0	11	21	108	109
1	2	63.0	50.0	14	29	121	110
1	2	61.0	46.0	11	20	118	104
1	2	75.0	55.5	13	27	140	121
1	2	75.0	55.0	11	19	146	120
2	1	54.5	65.0	13	26	109	133
2	1	65.0	52.0	9	25	128	111
2	1	56.0	46.5	13	35	112	102
2	1	65.0	52.5	13	34	128	112
2	1	61.0	51.5	11	17	121	110
2	1	60.0	51.5	11	18	120	110
2	2	75.0	59.0	16	43	148	128
2	2	75.0	58.0	14	29	140	121
2	2	75.0	59.0	13	27	146	126
2	2	65.0	45.0	16	13	124	101
2	2	75.0	52.0	17	23	140	114
2	2	75.0	49.5	68	77	141	107
2	2	75.0	52.0	8	29	142	114
2	2	52.0	49.0	11	11	106	109
2	2	75.0	55.5	11	18	146	121
3	1	55.5	75.0	17	39	106	152
3	1	59.0	48.5	17	33	107	105
3	1	59.0	49.5	20	16	107	107
3	1	54.5	63.5	21	17	109	130
3	1	54.0	54.0	25	23	108	114
3	2	69.0	75.0	10	37	131	160
3	2	59.5	63.5	11	36	116	135
3	2	52.0	45.0	18	21	104	102
3	2	48.0	43.0	30	21	98	98
3	2	54.0	49.0	23	11	107	109
3	2	54.5	44.5	20	16	108	101
3	2	55.0	54.0	16	23	109	118
3	2	53.0	44.5	21	25	106	101
4	1	59.0	49.0	17	30	107	106
4	1	54.0	52.0	14	29	126	111
4	1	55.0	55.0	9	25	128	133
4	1	44.0	46.0	27	30	90	101
4	1	58.0	65.0	14	29	115	133
4	1	46.5	58.0	17	13	96	121

4	1	39.0	44.0	30	44	81	98
4	2	67.0	71.0	14	39	128	148
4	2	42.0	45.0	21	20	88	102
4	2	49.0	52.0	20	34	99	114
4	2	55.5	61.0	22	29	111	131
4	2	45.5	44.0	19	11	94	100
4	2	45.0	45.5	20	29	93	103
4	2	42.0	44.0	29	40	88	100

APPENDIX F

SELECTED STATISTICAL ANALYSES

APPENDIX F

SELECTED STATISTICAL ANALYSES

Explanatory Note

Appendix F contains selected statistical analyses for all subjects for both measures.

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Appendix F-1

Selected T tests

```
INDEPENDENT SAMPLES T-TEST ON     GROUP      GROUPED BY       SEX

      GROUP          N      MEAN              SD
      GROUP          N      MEAN              SD
        1.000       24         2.542          1.179
        1.000       24         2.542          1.179
        2.000       32         2.438          1.105
        2.000       32         2.438          1.105

SEPARATE VARIANCES T =          .336 DF =   47.9 PROB = .738
SEPARATE VARIANCES T =          .336 DF =   47.9 PROB = .738
  POOLED VARIANCES T =          .339 DF =     54 PROB = .736
  POOLED VARIANCES T =          .339 DF =     54 PROB = .736
>use datat
VARIABLES IN SYSTAT FILE ARE:
     GROUP              SEX              EXT              OPEN
```

INDEPENDENT SAMPLES T-TEST ON OPEN GROUPED BY SEX

GROUP	N	MEAN	SD
1.000	24	54.396	9.324
2.000	32	52.172	7.891

SEPARATE VARIANCES T = .942 DF = 44.8 PROB = .351

POOLED VARIANCES T = .965 DF = 54 PROB = .339

INDEPENDENT SAMPLES T-TEST ON EXT GROUPED BY SEX

GROUP	N	MEAN	SD
1.000	24	57.479	7.680
2.000	32	61.344	11.812

SEPARATE VARIANCES T = 1.480 DF = 53.1 PROB = .145

POOLED VARIANCES T = 1.395 DF = 54 PROB = .169

Appendix F-2

Selected Analyses of Variance

THE FOLLOWING RESULTS ARE FOR:

GROUP = 2.000

TOTAL OBSERVATIONS: 15

	EXT	OPEN
N OF CASES	15	15
MEAN	66.900	53.200
STANDARD DEV	8.648	5.271

THE FOLLOWING RESULTS ARE FOR:

GROUP = 3.000

TOTAL OBSERVATIONS: 13

	EXT	OPEN
N OF CASES	13	13
MEAN	55.923	54.538
STANDARD DEV	5.016	11.243

THE FOLLOWING RESULTS ARE FOR:

GROUP = 4.000

TOTAL OBSERVATIONS: 14

	EXT	OPEN
N OF CASES	14	14
MEAN	50.107	52.250
STANDARD DEV	8.079	8.697

SUMMARY STATISTICS FOR EXT

BARTLETT TEST FOR HOMOGENEITY OF GROUP VARIANCES

CHI-SQUARE = 4.292 DF= 3 PROBABILITY = .232

ANALYSIS OF VARIANCE

SOURCE	SUM OF SQUARES	DF	MEAN SQUARE	F	PROBABILITY
BETWEEN GROUPS	2649.937	3	883.312	14.190	.000
WITHIN GROUPS	3236.845	52	62.247		

TUKEY HSD TEST AT ALPHA = .050

CRITICAL RANGE FOR PAIRS OF MEANS = 7.917

THIS TEST ASSUMES THE COUNTS PER GROUP ARE EQUAL

SUMMARY STATISTICS FOR OPEN

BARTLETT TEST FOR HOMOGENEITY OF GROUP VARIANCES

CHI-SQUARE = 6.880 DF= 3 PROBABILITY = .076

ANALYSIS OF VARIANCE

SOURCE	SUM OF SQUARES	DF	MEAN SQUARE	F	PROBABILITY
BETWEEN GROUPS	40.530	3	13.510	.178	.911
WITHIN GROUPS	3957.095	52	76.098		

TUKEY HSD TEST AT ALPHA = .050

CRITICAL RANGE FOR PAIRS OF MEANS = 8.754

THIS TEST ASSUMES THE COUNTS PER GROUP ARE EQUAL

THE FOLLOWING RESULTS ARE FOR:

GROUP = 1.000

TOTAL OBSERVATIONS: 14

	GROUP	SEX	EXT	OPEN
N OF CASES	14	14	14	14
MINIMUM	1.000	1.000	51.000	33.000
MAXIMUM	1.000	2.000	75.000	72.000
MEAN	1.000	1.571	65.036	52.607
STANDARD DEV	0.000	0.514	8.941	9.064

THE FOLLOWING RESULTS ARE FOR:

GROUP = 2.000

TOTAL OBSERVATIONS: 15

	GROUP	SEX	EXT	OPEN
N OF CASES	15	15	15	15
MINIMUM	2.000	1.000	52.000	45.000
MAXIMUM	2.000	2.000	75.000	65.000
MEAN	2.000	1.600	66.900	53.200
STANDARD DEV	0.000	0.507	8.648	5.271

THE FOLLOWING RESULTS ARE FOR:

GROUP = 3.000

TOTAL OBSERVATIONS: 13

	GROUP	SEX	EXT	OPEN
N OF CASES	13	13	13	13
MINIMUM	3.000	1.000	48.000	43.000
MAXIMUM	3.000	2.000	69.000	75.000
MEAN	3.000	1.615	55.923	54.538
STANDARD DEV	0.000	0.506	5.016	11.243

THE FOLLOWING RESULTS ARE FOR:

GROUP = 4.000

TOTAL OBSERVATIONS: 14

	GROUP	SEX	EXT	OPEN
N OF CASES	14	14	14	14
MINIMUM	4.000	1.000	39.000	44.000
MAXIMUM	4.000	2.000	67.000	71.000
MEAN	4.000	1.500	50.107	52.250
STANDARD DEV	0.000	0.519	8.079	8.697

ONE OR MORE OF YOUR GROUPS HAS NO VARIANCE.

SUMMARY STATISTICS FOR SEX

BARTLETT TEST FOR HOMOGENEITY OF GROUP VARIANCES

CHI-SQUARE = .010 DF= 3 PROBABILITY = 1.000

ANALYSIS OF VARIANCE

SOURCE	SUM OF SQUARES	DF	MEAN SQUARE	F	PROBABILITY
BETWEEN GROUPS	0.109	3	0.036	.139	.936
WITHIN GROUPS	13.605	52	0.262		

SUMMARY STATISTICS FOR EXT

BARTLETT TEST FOR HOMOGENEITY OF GROUP VARIANCES

CHI-SQUARE = 4.292 DF= 3 PROBABILITY = .232

ANALYSIS OF VARIANCE

SOURCE	SUM OF SQUARES	DF	MEAN SQUARE	F	PROBABILITY
BETWEEN GROUPS	2649.937	3	883.312	14.190	.000
WITHIN GROUPS	3236.845	52	62.247		

SUMMARY STATISTICS FOR OPEN

BARTLETT TEST FOR HOMOGENEITY OF GROUP VARIANCES

CHI-SQUARE = 6.880 DF= 3 PROBABILITY = .076

ANALYSIS OF VARIANCE

SOURCE	SUM OF SQUARES	DF	MEAN SQUARE	F	PROBABILITY
BETWEEN GROUPS	40.530	3	13.510	.178	.911
WITHIN GROUPS	3957.095	52	76.098		

THE FOLLOWING RESULTS ARE FOR:

GROUP = 1.000

TOTAL OBSERVATIONS: 14

	EXT	OPEN
N OF CASES	14	14
MEAN	65.036	52.607
STANDARD DEV	8.941	9.064

THE FOLLOWING RESULTS ARE FOR:

GROUP = 1.000

TOTAL OBSERVATIONS: 14

N OF CASES	14	14	14	14
MEAN	125.857	116.286	13.929	24.429
STANDARD DEV	15.728	12.572	4.891	4.603

THE FOLLOWING RESULTS ARE FOR:

GROUP = 2.000

TOTAL OBSERVATIONS: 15

	NEOR(1)	NEOR(2)	CPIR(1)	CPIR(2)
N OF CASES	15	15	15	15
MEAN	127.733	114.200	13.133	24.867
STANDARD DEV	15.224	9.821	3.335	8.651

THE FOLLOWING RESULTS ARE FOR:

GROUP = 3.000

TOTAL OBSERVATIONS: 13

	NEOR(1)	NEOR(2)	CPIR(1)	CPIR(2)
MEAN	107.538	117.769	19.769	25.615
STANDARD DEV	9.640	20.429	6.016	10.029

THE FOLLOWING RESULTS ARE FOR:

GROUP = 4.000

TOTAL OBSERVATIONS: 13

	NEOR(1)	NEOR(2)	CPIR(1)	CPIR(2)
N OF CASES	13	13	13	13
MEAN	104.308	115.462	18.769	27.846
STANDARD DEV	16.085	16.195	5.644	9.182

SUMMARY STATISTICS FOR NEOR(1)

BARTLETT TEST FOR HOMOGENEITY OF GROUP VARIANCES

CHI-SQUARE = 3.513 DF= 3 PROBABILITY = .319

ANALYSIS OF VARIANCE

SOURCE	SUM OF SQUARES	DF	MEAN SQUARE	F	PROBABILITY
BETWEEN GROUPS	6084.189	3	2028.063	9.684	.000
WITHIN GROUPS	10680.648	51	209.424		

TUKEY HSD TEST AT ALPHA = .050

CRITICAL RANGE FOR PAIRS OF MEANS = 14.662

THIS TEST ASSUMES THE COUNTS PER GROUP ARE EQUAL

SUMMARY STATISTICS FOR NEOR(2)

BARTLETT TEST FOR HOMOGENEITY OF GROUP VARIANCES

CHI-SQUARE = 7.334 DF= 3 PROBABILITY = .062

ANALYSIS OF VARIANCE

SOURCE	SUM OF SQUARES	DF	MEAN SQUARE	F	PROBABILITY
BETWEEN GROUPS	93.313	3	31.104	.137	.937
WITHIN GROUPS	11560.796	51	226.682		

TUKEY HSD TEST AT ALPHA = .050

CRITICAL RANGE FOR PAIRS OF MEANS = 15.254

THIS TEST ASSUMES THE COUNTS PER GROUP ARE EQUAL

SUMMARY STATISTICS FOR CPIR(1)

BARTLETT TEST FOR HOMOGENEITY OF GROUP VARIANCES

CHI-SQUARE = 4.738 DF= 3 PROBABILITY = .192

ANALYSIS OF VARIANCE

SOURCE	SUM OF SQUARES	DF	MEAN SQUARE	F	PROBABILITY
BETWEEN GROUPS	464.650	3	154.883	6.155	.001
WITHIN GROUPS	1283.277	51	25.162		

TUKEY HSD TEST AT ALPHA = .050

CRITICAL RANGE FOR PAIRS OF MEANS = 5.082

THIS TEST ASSUMES THE COUNTS PER GROUP ARE EQUAL

SUMMARY STATISTICS FOR CPIR(2)

BARTLETT TEST FOR HOMOGENEITY OF GROUP VARIANCES

CHI-SQUARE = 7.374 DF= 3 PROBABILITY = .061

ANALYSIS OF VARIANCE

SOURCE	SUM OF SQUARES	DF	MEAN SQUARE	F	PROBABILITY
BETWEEN GROUPS	92.796	3	30.932	.445	.722
WITHIN GROUPS	3541.931	51	69.450		

TUKEY HSD TEST AT ALPHA = .050

CRITICAL RANGE FOR PAIRS OF MEANS = 8.443

THIS TEST ASSUMES THE COUNTS PER GROUP ARE EQUAL

THE FOLLOWING RESULTS ARE FOR:

GROUP = 1.000

TOTAL OBSERVATIONS: 14

	CPIR(1)	CPIR(2)	NEOR(1)	NEOR(2)
N OF CASES	14	14	14	14
MEAN	13.929	24.429	125.857	116.286
STANDARD DEV	4.891	4.603	15.728	12.572

THE FOLLOWING RESULTS ARE FOR:

GROUP = 2.000

TOTAL OBSERVATIONS: 15

	CPIR(1)	CPIR(2)	NEOR(1)	NEOR(2)
N OF CASES	15	15	15	15
MEAN	16.267	28.333	130.067	114.600
STANDARD DEV	14.533	16.003	14.310	9.356

THE FOLLOWING RESULTS ARE FOR:

GROUP = 3.000

TOTAL OBSERVATIONS: 13

	CPIR(1)	CPIR(2)	NEOR(1)	NEOR(2)
N OF CASES	13	13	13	13
MEAN	19.154	24.462	108.923	117.846
STANDARD DEV	5.367	9.052	7.697	20.359

THE FOLLOWING RESULTS ARE FOR:

GROUP = 4.000

TOTAL OBSERVATIONS: 14

	CPIR(1)	CPIR(2)	NEOR(1)	NEOR(2)
N OF CASES	14	14	14	14
MEAN	19.500	28.714	103.143	114.357
STANDARD DEV	6.073	9.401	16.057	16.099

SUMMARY STATISTICS FOR CPIR(1)

BARTLETT TEST FOR HOMOGENEITY OF GROUP VARIANCES

CHI-SQUARE = 22.848 DF= 3 PROBABILITY = .000

ANALYSIS OF VARIANCE

SOURCE	SUM OF SQUARES	DF	MEAN SQUARE	F	PROBABILITY
BETWEEN GROUPS	286.499	3	95.500	1.213	.314
WITHIN GROUPS	4093.054	52	78.713		

TUKEY HSD TEST AT ALPHA = .050

CRITICAL RANGE FOR PAIRS OF MEANS = 8.903

THIS TEST ASSUMES THE COUNTS PER GROUP ARE EQUAL

SUMMARY STATISTICS FOR CPIR(2)

BARTLETT TEST FOR HOMOGENEITY OF GROUP VARIANCES

CHI-SQUARE = 17.812 DF= 3 PROBABILITY = .000

ANALYSIS OF VARIANCE

SOURCE	SUM OF SQUARES	DF	MEAN SQUARE	F	PROBABILITY
BETWEEN GROUPS	232.989	3	77.663	.674	.572
WITHIN GROUPS	5992.850	52	115.247		

TUKEY HSD TEST AT ALPHA = .050

CRITICAL RANGE FOR PAIRS OF MEANS = 10.773

THIS TEST ASSUMES THE COUNTS PER GROUP ARE EQUAL

SUMMARY STATISTICS FOR NEOR(1)

BARTLETT TEST FOR HOMOGENEITY OF GROUP VARIANCES

CHI-SQUARE = 6.700 DF= 3 PROBABILITY = .082

ANALYSIS OF VARIANCE

SOURCE	SUM OF SQUARES	DF	MEAN SQUARE	F	PROBABILITY
BETWEEN GROUPS	7187.840	3	2395.947	12.281	.000
WITHIN GROUPS	10145.285	52	195.102		

TUKEY HSD TEST AT ALPHA = .050

CRITICAL RANGE FOR PAIRS OF MEANS = 14.017

THIS TEST ASSUMES THE COUNTS PER GROUP ARE EQUAL

SUMMARY STATISTICS FOR NEOR(2)

BARTLETT TEST FOR HOMOGENEITY OF GROUP VARIANCES

CHI-SQUARE = 8.037 DF= 3 PROBABILITY = .045

ANALYSIS OF VARIANCE

SOURCE	SUM OF SQUARES	DF	MEAN SQUARE	F	PROBABILITY
BETWEEN GROUPS	108.065	3	36.022	.161	.922
WITHIN GROUPS	11623.364	52	223.526		

TUKEY HSD TEST AT ALPHA = .050

CRITICAL RANGE FOR PAIRS OF MEANS = 15.003

THIS TEST ASSUMES THE COUNTS PER GROUP ARE EQUAL

NUMBER OF CASES PROCESSED: 56

DEPENDENT VARIABLE MEANS

NEOT(1)	NEOT(2)
59.688	53.125

UNIVARIATE AND MULTIVARIATE REPEATED MEASURES ANALYSIS

****
* BETWEEN SUBJECTS EFFECTS *
****

TEST FOR EFFECT CALLED:

GROUP

TEST OF HYPOTHESIS

SOURCE	SS	DF	MS	F	P
HYPOTHESIS	1216.529	3	405.510	3.923	0.014
ERROR	4961.752	48	103.370		

TEST FOR EFFECT CALLED:

SEX

TEST OF HYPOTHESIS

SOURCE	SS	DF	MS	F	P
HYPOTHESIS	1.390	1	1.390	0.013	0.908
ERROR	4961.752	48	103.370		

TEST FOR EFFECT CALLED:

GROUP

BY

SEX

TEST OF HYPOTHESIS

SOURCE	SS	DF	MS	F	P
HYPOTHESIS	295.255	3	98.418	0.952	0.423
ERROR	4961.752	48	103.370		

****

* WITHIN SUBJECTS EFFECTS *

****

TEST FOR EFFECT CALLED:

CONSTANT

TEST OF HYPOTHESIS

SOURCE	SS	DF	MS	F	P
HYPOTHESIS	916.100	1	916.100	27.305	0.000
ERROR	1610.432	48	33.551		

TEST FOR EFFECT CALLED:

GROUP

TEST OF HYPOTHESIS

SOURCE	SS	DF	MS	F	P
HYPOTHESIS	1189.506	3	396.502	11.818	0.000
ERROR	1610.432	48	33.551		

TEST FOR EFFECT CALLED:

SEX

TEST OF HYPOTHESIS

SOURCE	SS	DF	MS	F	P
HYPOTHESIS	200.562	1	200.562	5.978	0.018
ERROR	1610.432	48	33.551		

TEST FOR EFFECT CALLED:

GROUP

BY

SEX

TEST OF HYPOTHESIS

SOURCE	SS	DF	MS	F	P
HYPOTHESIS	117.590	3	39.197	1.168	0.332
ERROR	1610.432	48	33.551		

NUMBER OF CASES PROCESSED: 56

DEPENDENT VARIABLE MEANS

NEOR(1)	NEOR(2)
117.375	115.714

UNIVARIATE AND MULTIVARIATE REPEATED MEASURES ANALYSIS

* BETWEEN SUBJECTS EFFECTS *

****

TEST FOR EFFECT CALLED:

GROUP

TEST OF HYPOTHESIS

SOURCE	SS	DF	MS	F	P
HYPOTHESIS	3214.943	3	1071.648	3.404	0.025
ERROR	15109.815	48	314.788		

TEST FOR EFFECT CALLED:

SEX

TEST OF HYPOTHESIS

SOURCE	SS	DF	MS	F	P
HYPOTHESIS	0.320	1	0.320	0.001	0.975
ERROR	15109.815	48	314.788		

TEST FOR EFFECT CALLED:

GROUP

BY

SEX

TEST OF HYPOTHESIS

SOURCE	SS	DF	MS	F	P
HYPOTHESIS	949.705	3	316.568	1.006	0.398
ERROR	15109.815	48	314.788		

****

* WITHIN SUBJECTS EFFECTS *

****

TEST FOR EFFECT CALLED:

CONSTANT

TEST OF HYPOTHESIS

SOURCE	SS	DF	MS	F	P
HYPOTHESIS	3.493	1	3.493	0.035	0.853

TEST FOR EFFECT CALLED:

GROUP

TEST OF HYPOTHESIS

SOURCE	SS	DF	MS	F	P
HYPOTHESIS	3384.204	3	1128.068	11.243	0.000
ERROR	4815.977	48	100.333		

TEST FOR EFFECT CALLED:

SEX

TEST OF HYPOTHESIS

SOURCE	SS	DF	MS	F	P
HYPOTHESIS	436.038	1	436.038	4.346	0.042
ERROR	4815.977	48	100.333		

BY

SEX

TEST OF HYPOTHESIS

SOURCE	SS	DF	MS	F	P
HYPOTHESIS	453.711	3	151.237	1.507	0.225
ERROR	4815.977	48	100.333		

NUMBER OF CASES PROCESSED: 56

DEPENDENT VARIABLE MEANS

CPIR(1)	CPIR(2)
17.161	26.554

UNIVARIATE AND MULTIVARIATE REPEATED MEASURES ANALYSIS

****
* BETWEEN SUBJECTS EFFECTS *
****

TEST FOR EFFECT CALLED:

GROUP

TEST OF HYPOTHESIS

SOURCE	SS	DF	MS	F	P

TEST FOR EFFECT CALLED:

SEX

TEST OF HYPOTHESIS

SOURCE	SS	DF	MS	F	P
HYPOTHESIS	57.561	1	57.561	0.373	0.544
ERROR	7409.990	48	154.375		

TEST FOR EFFECT CALLED:

GROUP

BY

SEX

TEST OF HYPOTHESIS

SOURCE	SS	DF	MS	F	P
HYPOTHESIS	212.169	3	70.723	0.458	0.713
ERROR	7409.990	48	154.375		

****

* WITHIN SUBJECTS EFFECTS *

****

TEST FOR EFFECT CALLED:

CONSTANT

TEST OF HYPOTHESIS

SOURCE	SS	DF	MS	F	P
HYPOTHESIS	2408.870	1	2408.870	49.207	0.000
ERROR	2349.764	48	48.953		

TEST FOR EFFECT CALLED:

GROUP

TEST OF HYPOTHESIS

SOURCE	SS	DF	MS	F	P
HYPOTHESIS	177.058	3	59.019	1.206	0.318
ERROR	2349.764	48	48.953		

TEST FOR EFFECT CALLED:

SEX

TEST OF HYPOTHESIS

SOURCE	SS	DF	MS	F	P
HYPOTHESIS	34.581	1	34.581	0.706	0.405
ERROR	2349.764	48	48.953		

TEST FOR EFFECT CALLED:

GROUP

BY

SEX

TEST OF HYPOTHESIS

SOURCE	SS	DF	MS	F	P
HYPOTHESIS	8.409	3	2.803	0.057	0.982
ERROR	2349.764	48	48.953		

NUMBER OF CASES PROCESSED: 55

DEPENDENT VARIABLE MEANS

CPIR(1)	CPIR(2)	NEOR(1)	NEOR(2)
16.236	25.636	116.945	115.873

UNIVARIATE AND MULTIVARIATE REPEATED MEASURES ANALYSIS

****
* BETWEEN SUBJECTS EFFECTS *
****

TEST FOR EFFECT CALLED:

GROUP

TEST OF HYPOTHESIS

SOURCE	SS	DF	MS	F	P

TEST FOR EFFECT CALLED:

SEX

TEST OF HYPOTHESIS

SOURCE	SS	DF	MS	F	P
HYPOTHESIS	0.414	1	0.414	0.002	0.963
ERROR	8770.056	47	186.597		

TEST FOR EFFECT CALLED:

GROUP

BY

SEX

TEST OF HYPOTHESIS

SOURCE	SS	DF	MS	F	P
HYPOTHESIS	337.503	3	112.501	0.603	0.616
ERROR	8770.056	47	186.597		

****

* WITHIN SUBJECTS EFFECTS *

****

TEST FOR EFFECT CALLED:

CONSTANT

SINGLE DEGREE-OF-FREEDOM POLYNOMIAL CONTRASTS

DEGREE	SS	DF	MS	F	P
1	404342.029	1	404342.029	1966.007	0.000
ERROR	9666.333	47	205.667		
2	1090.284	1	1090.284	16.291	0.000
ERROR	3145.556	47	66.927		
3	77386.637	1	77386.637	885.271	0.000
ERROR	4108.541	47	87.416		

UNIVARIATE REPEATED MEASURES F-TEST

SOURCE	SS	DF	MS	F	P
HYPOTHESIS	482818.950	3	160939.650	1341.130	0.000
ERROR	16920.430	141	120.003		

MULTIVARIATE TEST STATISTICS

F-STATISTIC = 789.715 DF = 3, 45 PROB = 0.000

PILLAI TRACE = 0.981

F-STATISTIC = 789.715 DF = 3, 45 PROB = 0.000

HOTELLING-LAWLEY TRACE = 52.648

F-STATISTIC = 789.715 DF = 3, 45 PROB = 0.000

TEST FOR EFFECT CALLED:

GROUP

SINGLE DEGREE-OF-FREEDOM POLYNOMIAL CONTRASTS

DEGREE	SS	DF	MS	F	P
1	902.536	3	300.845	1.463	0.237
ERROR	9666.333	47	205.667		
2	2258.705	3	752.902	11.250	0.000
ERROR	3145.556	47	66.927		
3	2631.227	3	877.076	10.033	0.000
ERROR	4108.541	47	87.416		

UNIVARIATE REPEATED MEASURES F-TEST

HYPOTHESIS	5792.468	9	643.608	5.363	0.000
ERROR	16920.430	141	120.003		

MULTIVARIATE TEST STATISTICS

WILKS' LAMBDA = 0.496

F-STATISTIC = 4.067 DF = 9, 109 PROB = 0.000

PILLAI TRACE = 0.525

F-STATISTIC = 3.326 DF = 9, 141 PROB = 0.001

HOTELLING-LAWLEY TRACE = 0.972

F-STATISTIC = 4.717 DF = 9, 131 PROB = 0.000

THETA = 0.481 S = 3, M = -.5, N = 21.5 PROB = 0.000

TEST FOR EFFECT CALLED:

SEX

SINGLE DEGREE-OF-FREEDOM POLYNOMIAL CONTRASTS

DEGREE	SS	DF	MS	F	P
1	65.157	1	65.157	0.317	0.576

ERROR	3145.556	47	66.927		
3	199.063	1	199.063	2.277	0.138
ERROR	4108.541	47	87.416		

UNIVARIATE REPEATED MEASURES F-TEST

SOURCE	SS	DF	MS	F	P
HYPOTHESIS	325.886	3	108.629	0.905	0.440
ERROR	16920.430	141	120.003		

MULTIVARIATE TEST STATISTICS

WILKS' LAMBDA =	0.935					
F-STATISTIC =	1.048	DF =	3,	45	PROB =	0.380
PILLAI TRACE =	0.065					
F-STATISTIC =	1.048	DF =	3,	45	PROB =	0.380
HOTELLING-LAWLEY TRACE =	0.070					
F-STATISTIC =	1.048	DF =	3,	45	PROB =	0.380

TEST FOR EFFECT CALLED:

GROUP

SINGLE DEGREE-OF-FREEDOM POLYNOMIAL CONTRASTS

DEGREE	SS	DF	MS	F	P
1	233.121	3	77.707	0.378	0.769
ERROR	9666.333	47	205.667		
2	180.894	3	60.298	0.901	0.448
ERROR	3145.556	47	66.927		
3	273.385	3	91.128	1.042	0.383
ERROR	4108.541	47	87.416		

UNIVARIATE REPEATED MEASURES F-TEST

SOURCE	SS	DF	MS	F	P
HYPOTHESIS	687.401	9	76.378	0.636	0.764
ERROR	16920.430	141	120.003		

MULTIVARIATE TEST STATISTICS

WILKS' LAMBDA = 0.881

F-STATISTIC = 0.651 DF = 9, 109 PROB = 0.751

PILLAI TRACE = 0.123

F-STATISTIC = 0.668 DF = 9, 141 PROB = 0.737

F-STATISTIC = 0.634 DF = 9, 131 PROB = 0.766

THETA = 0.074 S = 3, M = -.5, N = 21.5 PROB = 0.715

Appendix F-3

Selected Pearson Correlations

PEARSON CORRELATION MATRIX

	GROUP	SEX	INT	REAL	EXT
GROUP	1.000				
SEX	-0.046	1.000			
INT	0.247	0.146	1.000		
REAL	0.096	0.011	0.524	1.000	
EXT	-0.569	0.150	-0.284	0.160	1.000
OPEN	-0.020	-0.122	-0.339	0.197	0.355

	OPEN
OPEN	1.000

NUMBER OF OBSERVATIONS: 56

PEARSON CORRELATION MATRIX

	GROUP	SEX	EXT	OPEN
GROUP	1.000			
SEX	-0.046	1.000		
EXT	-0.611	0.187	1.000	
OPEN	0.002	-0.130	0.347	1.000

NUMBER OF OBSERVATIONS: 56

PEARSON CORRELATION MATRIX

	GROUP	SEX	CPIR(1)	CPIR(2)	NEOR(1)
GROUP	1.000				
SEX	-0.069	1.000			
CPIR(1)	0.419	0.089	1.000		
CPIR(2)	0.149	-0.084	0.050	1.000	
NEOR(1)	-0.541	0.132	-0.683	0.058	1.000
NEOR(2)	0.009	-0.113	-0.439	0.328	0.378

	NEOR(2)
NEOR(2)	1.000

NUMBER OF OBSERVATIONS: 55

Appendix F-4

Selected Chi-square Analyses

TABLE OF GROUP (ROWS) BY SCORE (COLUMNS)

FREQUENCIES

	1	2	TOTAL
1	22	7	29
2	2	25	27
TOTAL	24	32	56

TEST STATISTIC	VALUE	DF	PROB
PEARSON CHI-SQUARE	26.754	1	.000
LIKELIHOOD RATIO CHI-SQUARE	30.172	1	.000
MCNEMAR SYMMETRY CHI-SQUARE	2.778	1	.096
YATES CORRECTED CHI-SQUARE	24.032	1	.000

COEFFICIENT	VALUE	ASYMPTOTIC STD ERROR
PHI	.6912	
CONTINGENCY	.5686	
GOODMAN-KRUSKAL GAMMA	.9504	.04132
KENDALL TAU-B	.6912	.09189
STUART TAU-C	.6837	.09421
YULE Q	.9504	.04132
YULE Y	.7248	.10127
COHEN KAPPA	.6802	.09613
SPEARMAN RHO	.6912	.09189
SOMERS D (COLUMN DEPENDENT)	.6845	.09410
LAMBDA (COLUMN DEPENDENT)	.6250	.13741

TABLE OF GROUP (ROWS) BY SCORE (COLUMNS)

FREQUENCIES

	1	2	TOTAL
1	12	17	29
2	0	27	27
TOTAL	12	44	56

TEST STATISTIC	VALUE	DF	PROB
PEARSON CHI-SQUARE	14.219	1	.000
LIKELIHOOD RATIO CHI-SQUARE	18.857	1	.000
MCNEMAR SYMMETRY CHI-SQUARE	17.000	1	.000
YATES CORRECTED CHI-SQUARE	11.868	1	.001

COEFFICIENT	VALUE	ASYMPTOTIC STD ERROR
PHI	.5039	
CONTINGENCY	.4500	

STUART TAU-C		.4133	.09143
YULE Q		1.0000	.00000
YULE Y		1.0000	.00000
COHEN KAPPA		.4050	.09679
SPEARMAN RHO		.5039	.07550
SOMERS D	(COLUMN DEPENDENT)	.4138	.09146
LAMBDA	(COLUMN DEPENDENT)	.0000	.00000
UNCERTAINTY	(COLUMN DEPENDENT)	.3240	.06301

TABLE OF GROUP (ROWS) BY SIZE (COLUMNS)

FREQUENCIES

	1	2	3	TOTAL
1	5	33	4	42
2	6	8	0	14
TOTAL	11	41	4	56

WARNING: MORE THAN ONE-FIFTH OF FITTED CELLS ARE SPARSE (FREQUENCY < 5)

SIGNIFICANCE TESTS ARE SUSPECT

TEST STATISTIC	VALUE	DF	PROB
PEARSON CHI-SQUARE	7.113	2	.029
LIKELIHOOD RATIO CHI-SQUARE	7.351	2	.025

COEFFICIENT	VALUE	ASYMPTOTIC STD ERROR

CONTINGENCY	.3357	
GOODMAN-KRUSKAL GAMMA	-.7279	.15829
KENDALL TAU-B	-.3438	.11982
STUART TAU-C	-.2730	.10855
SPEARMAN RHO	-.3525	.12309
SOMERS D (COLUMN DEPENDENT)	-.3639	.13340
LAMBDA (COLUMN DEPENDENT)	.0000	.00000
UNCERTAINTY (COLUMN DEPENDENT)	.0891	.05521

TABLE OF GROUP (ROWS) BY PROJECT (COLUMNS)

FREQUENCIES

	1	2	TOTAL
1	9	20	29
2	27	0	27
TOTAL	36	20	56

TEST STATISTIC	VALUE	DF	PROB
PEARSON CHI-SQUARE	28.966	1	.000
LIKELIHOOD RATIO CHI-SQUARE	37.073	1	.000
MCNEMAR SYMMETRY CHI-SQUARE	1.043	1	.307
YATES CORRECTED CHI-SQUARE	26.040	1	.000

COEFFICIENT	VALUE	ASYMPTOTIC STD ERROR
PHI	-.7192	
CONTINGENCY	.5839	

STUART TAU-C		-.6888	.08605
YULE Q		-1.0000	.00000
YULE Y		-1.0000	.00000
COHEN KAPPA		-.6959	.08632
SPEARMAN RHO		-.7192	.07371
SOMERS D	(COLUMN DEPENDENT)	-.6897	.08591
LAMBDA	(COLUMN DEPENDENT)	.5500	.18062
UNCERTAINTY	(COLUMN DEPENDENT)	.5079	.08581

VITA

Sheila Harris Forbes

Candidate for the Degree of

Doctor of Philosophy

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