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A Multivariate Analysis of Two Types of Conformity Behaviors

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A MULTIVARIATE ANALYSIS OF TWO TYPES OF CONFORMITY BEHAVIORS

by

Charles Lee Alcorn

B. A., Carson-Newman College, 1955

M. A., MacMurray College, 1956

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A Thesis Submitted in Partial Fulfillment of
The Requirements for the Degree of
Doctor of Philosophy
Walden University
July, 1972

DISSERTATION OUTLINE

AUTHOR: Charles L. Alcorn, Supervising School Psychologist,
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TITLE: A Multivariate Analysis of Two Types of Conforming Behavior

PROBLEM: What variables constitute the personality pattern of those persons who "conform" to either expert or group pressure?

METHOD: PHASE I

Utilizing seventeen (17) variables, 118 subjects shall be placed in an "Asch-type" or "Crutchfield-type" situation, utilizing a modified Tuddenham apparatus. "Discriminant weights" shall be derived via use of the Step-wise Multiple Discriminant Function Analysis. All data shall be processed via IBM 1401, with FORTRAN FOUR language.

PHASE II

These data shall be then used to predict the behaviors of 217 subjects in identical conformity-situations, thus validating the discriminant weights and their predictive efficacy. Chi Square data analysis is indicated.

A narrative description, quantified and validated, shall be written to describe the personality patterns of persons who "conform" both to group and to expert pressure, and of persons who "do not conform" to these types of pressure.

STATUS: Data has been collected, statistically analyzed, and the writing process (Turabian's Manual) is underway.

SUBMITTED: 3-2-71

(Signed) Charles L. Alcorn

Charles L. Alcorn

CLA:pn

ABSTRACT

A Multivariate Analysis Of Two Types Of Conformity Behaviors

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Charles Lee Alcorn

Walden University

1972

ABSTRACT

A review of research concerning conformity behaviors revealed a need for large sample, multivariate approaches.

To that end, seventeen variables were utilized (birth order, chronological age, sex, race, IQ, socioeconomic status, geographic area of residence, religion, anxiety, dogmatism, rigidity, acquiescence, ego strength, confidence, extroversion/introversion, impulsivity, and neuroticism) to describe the behaviors of 104 subjects in a Tuddenham-type setting wherein the subjects were randomly assigned to either "Asch-type" (group pressure) or "Crutchfield-type" (expert pressure) treatment conditions.

Utilizing a stepwise multiple discriminant function analysis, discriminant weights were derived. The variable of rigidity was not found to be a valid predictor.

With the discriminant weights and the sixteen predictive second-order variables, 218 subjects were randomly assigned to treatment conditions and their "conforming" or "not-conforming" behaviors were predicted. The data of eleven subjects who correctly perceived the contrived nature of the experiment were not included.

Of the 123 subjects subjected to "expert pressure," 85 were not-conformers. Chi-Square analysis of the "expert pressure" data yields a significant difference at the .20 Level of Confidence. Of the 95 subjects subjected to "group pressure," 45 were conformers and 50 were not-conformers. Chi-Square was not significant.

Conformers to "expert pressure" were correctly identified 74 per cent of the time; conformers to "group pressure" were correctly identified 62 per cent of the time. Thus, it appears that conforming behaviors are predictable providing a multivariate method is used conjointly with a discriminant function analysis of the data.

The most difficult behavior to correctly predict is not-conforming to "expert pressure," with but 32 per cent correct. Too, but 40 per cent of the not-conforming to "group pressure" was correctly predicted.

Conformers to "expert pressure" were seen as typically being first-born, 20.8 year old Caucasian males or females with an IQ of 114. Their parents were high school graduates or above, and were either professional persons, business proprietors, or managers, et cetera. Their geographic area of residence was Rural East North Central United States, but this finding may be due to sampling error. Protestants were more frequently observed (n = 54) than Roman Catholics (n = 28). The conformers were slightly above average in anxiety and dogmatism. Average acquiescence, ego strength, and confidence were noted. Low impulsivity was seen, and they were slightly extroverted. As a group, they were more neurotic than an average subject.

Not-conformers to "expert pressure" were seen as first-born 21.5 year old Caucasian males with an IQ of 119. No clear socioeconomic status was noted due to extreme scatter. The geographic area of residence was Rural East North Central United States. They were predominantly Protestant subjects.

They were less anxious than conformers, less dogmatic, and less acquiescent. They did not differ significantly in ego strength, confidence or impulsivity. However, they were more introverted and decidedly less neurotic than their conformer counterpart.

Conformers to "group pressure" were equally likely to be either a first or second-born 21 year old male or female Caucasian Protestant with an IQ of 116.

They were more anxious than an average subject. Dogmatism, acquiescence, ego strength, neuroticism, and extroversion/introversion were average. As a group, they were slightly more confident.

Subjects who were not-conformers to "group pressure" were seen as second-born 21.5 year old females with an IQ of 116. Two-thirds of these subjects were Protestant; one-third were Roman Catholic. No obvious socioeconomic status could be ascertained. They were less anxious than conformers to "group pressure." No significant differences were noted in dogmatism, acquiescence, ego strength, confidence, impulsivity or extroversion/introversion. They were less neurotic than their conformer counterpart.

ACKNOWLEDGMENTS

The author wishes to acknowledge the interest, encouragement, and helpful efforts of Dr. Ralph Marty, Professor of Education and Chairman of the Division of Teacher Preparation, McKendree College. Too, the yeoman work of Mr. and Mrs. Jerry Clark and Mr. Alan Fisher in the task of gathering much of the data is recognized. And, obviously, the sustained interest of a supportive family was an irreplaceable asset.

Charles Lee Alcorn
July, 1972

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ABSTRACT

A multidimensional descriptive study of the personality patterns of subjects typified by two types of conforming behavior and two types of not-conforming behavior. A technique for predicting such behaviors is developed by use of the multiple discriminant function analysis, using seventeen organismic variables. The description of the "conforming personality types" is of special concern.

CHAPTER I

INTRODUCTION

Rationale

In modern society one can observe multitudinous instances of human behaviors being molded, altered, and irrevocably affected by varied influences. Of particular concern to many is the effect of "social pressure" and "expert opinion." Needless to say, "conforming behavior" greatly transcends any human parameter.

What, we might ask, characterizes those who "go along with the crowd" as opposed to those who do not? What ipsative or idiographic variables contribute to "giving in," to "yielding," to "believing," et cetera?

If those in the professions of education and social science could ascertain, via rigorous scientific methodology, specific variables that could be manipulated to permit mankind to resist "pressure" and to think for himself with independent logic, might not a better world possibly ensue?

As a behavioral phenomenon, "social pressure" has received increasing attention over the past three decades. From the classic works of Sherif (1935), Asch (1951, 1956), and Crutchfield (1955) have come extensively researched theories regarding the qualities, effects and types of social pressure. Sherif (1935, 1948) was concerned with the effects of social factors "coming from without" such as suggestion and group pressure, and of such internal

factors as motivation and attitudes, as they might affect a person's perception in the "autokinetic phenomenon" situation. Asch (1951, 1956) investigated the effects of group pressure upon one's judgment, and in his studies, typically, a single subject was influenced by the judgments of a unanimous majority. Crutchfield (1955) utilized another methodology wherein a number of subjects could be tested simultaneously via an electrical apparatus, thus permitting standardized situations for each subject. There appear to be numerous factors that contribute to social pressure, including broad areas such as interpersonal relationships, personality variables, and the very nature of the social pressure situation itself. (Chipman, 1966)

Hollander and Willis (1967) commented on the use of value judgments by the behavioral scientist and on the somewhat restricted approaches in conformity studies. In their opinion behavioral scientists should not make value judgments about the desirability or lack of desirability of conformity in human behavior. They also recommend that research in this general area should be characterized by a broad, multidimensional investigation which would not attempt to isolate narrow, segmented aspects of the conforming personality. Rather, multivariate research is advised in an attempt to ascertain the global construction of the conformer personality pattern. To that end, this research would center itself around the question of ascertaining exactly what the variables and pattern of variables are that

describe the person who will conform to social pressure.

A review of the considerable literature involving conformity behavior points to two basic unresolved problems. First, the problem of trying to determine precisely which personality trait is present when conformity occurs has resulted in many small studies dealing with but one or two independent variables. This further has resulted in contradictory findings, and there are many differing statements as to which variables do, in fact, relate to conformity. Secondly, there have been numerous investigations described as "Asch-type," where a subject is influenced by group opinion, as well as "Crutchfield-type" studies in which subjects are manipulated by the use of simulated influences. There apparently has not been an investigation of the specific personality patterns of subjects in both of these unique experimental conditions done by the same researcher. It would appear that there is, in fact, <u>not</u> a single entity known as a conformer, and that the behavior manifested in an "Asch-type" situation might very well not be seen in the same subject when he is placed in a "Crutchfield-type" experiment.

It is the aim of this research to ascertain the specific personality characteristics of those people who do indeed conform or not conform when influenced by "group pressure" or by "expert pressure." "Group pressure" is an experimentally-contrived situation wherein the independent

judgment of a naive subject is "placed under pressure" by the uniformly false answers of other subjects (Crutchfield, 1955), and "expert pressure" is a similar situation except that another person serves as an "expert" and is known to be "apt" at the experimental task. (Luchins, 1961) It is anticipated that, in fact, there is more than one conformer personality pattern, and the exact type of situation in which one finds himself will also determine whether one does not conform.

Factors Affecting Conformity

Among the interpersonal factors investigated previously are such variables as the size of the group, the subject's status, the effect of peer group versus non-peer group, and the public nature of the commitment involved in stating a conforming opinion, et cetera. Personality factors have provided perhaps the majority of research works and also the most contradictory results.

Demographic Variables

Personality dynamics. The studies by Breger (1963), Hoffman (1953), and Mussen and Kagan (1958) have identified the central role of repressive ego-defenses in the conforming individual. According to Breger's research (1963), "Conformity is conceptualized as part of an ego-defensive process centered around the repression of hostility," and he points to "the usefulness of conceptualizing acquiescence to group pressure in terms which incorporate the portion of psychoanalytic theory concerned with defensive processes."

Covert hostility (Breger, 1963) is said to correlate with conformity. Asch's (1962) observations that the conforming subjects tend to block from awareness and distort the pressure in the group situation and in their own conforming responses emphasize defenses as central to the personality of the conformer.

The phenomenon of anxiety has been a fruitful research area. The findings, however, vary from study to study. Walters (1960) and Meyers (1962) indicate a positive relationship between conformity and high anxiety levels. The conditions under which the behavior did or did not occur were not standarized, however. Meyers and Hohle (1962), using a simulated group procedure, report a small but significant correlation between conformity and anxiety as assessed by the Sarason-Mandler TAQ. Walters, Marshall, and Shooter (1960) tested adolescent youths with the autokinetic apparatus and found that those who reported themselves as "anxious" on a "scale" adapted from Schacter were more susceptible to social influence. Mangan (1959, 1960) and Holder (1958) report that high anxiety is characterized not by more, but indeed by less conformity. Holder (1958) correlated the "conformity scores" on his Inventory of Value Integration with the Welch Anxiety Index on the MMPI and found that low conformers had the lowest anxiety mean. With subjects in a Crutchfield-type apparatus, DiVesta and Cox (1960) found a significant correlation of .17 between anxiety scores on the Manifest Anxiety Scale

and conformity. Mangan, Quartermain and Vaughan (1960) utilized an Asch-type setting and found that "under strong pressure conditions" those subjects who had high scores on the Taylor Scale of Manifest Anxiety conformed less than subjects with low anxiety scores.

There does not appear to have been a definitive experiment to resolve these conflicting findings.

Smith (1961) found that one's ego strength was related to one's perceived competence, and that those subjects with high ego strength yielded less under pressure. Weiner's (1958) results would seem to corroborate this, for he found that subjects with a high "Certainty Scale Score" were more certain of their judgment of ten mimeographed ambiguous designs and did not change their judgments as frequently as those subjects with a low "Certainty Scale Score."

Social Factors

Subjects described as being of "indefinite status" insofar as their popularity was concerned were found to yield more than either the "popular" or "unpopular" subjects (Wilson, 1966). Strickland (1962) found that conformity under simulated group pressure conditions was a result of the subject's need for social approval. Feldman and Goldfried (1962), using a modified Asch-type situation, classified subjects on the basis of an "independent score" that was pre-determined by the subject's agreement or non-agreement with an "incorrect" majority response. "High independent subjects" tended to make significantly more

independent choices, while the "Low independent" group tended to go along with the majority. Gross (1959) indicates that "differential social pressure" will result in different amounts of conformity in subjects described as "insecure." He defines "strong pressure" as the subject having to make a public judgment before his influencing peers, "intermediate pressure" as a not-public judgment being made before the influencing peers, and "weak pressure" as a private judgment being made without peer influence. "Strong pressure" was found to produce the largest number of conforming responses in a guessing task.

Dogmatism

Harvey (1963) utilized a multivariate approach, wherein he varied the type of influence as well as the stimulus magnitude. In his opinion, "conformity is a complex adjustment to both situational and personality factors." In a simulated group situation, he found that "high dogmatism" on the Rokeach Dogmatism Scale conformed more than did the "low dogmatics." Lefcourt (1962), in assessing readiness for therapy in narcotic addicts, did indeed find that those subjects considered to have the greatest "potential for change" had the lowest scores on Rokeach's Dogmatism Scale (1954).

Authoritarian personality

Unfortunately, research with this variable has yielded contradictory findings. Youniss (1958) reports finding no correlation between authoritarian characteristics and

conforming behavior. Vidulich (1961) indicates that subjects described as "high authoritarian" persons agree more with high status sources, indicating that the source of the information is a relevant variable. Steiner (1963) points out that an authoritarian personality does not necessarily conform in a situation; rather, he may be a non-conformer when his associates are not unanimous in their opinions.

Rigidity

The personality characteristic of rigidity, implying a lack of flexibility in behavior and attitude, has apparently not been included in previous multivariate research concerning conformity.

Sex of subject

As a determining variable in conformity behavior research, the sex of the subject has received considerable attention. Numerous studies (Tuddenham, 1958; DiVesta, 1960; Patel, 1960; Allen, 1963; Peterson, 1963) have yielded the general finding that females are more susceptible to influence and do conform more than males.

IQ

Intelligence, when considered as a predictor variable, has yielded somewhat less than consistent findings. Youniss (1958) found that in a group situation there was no correlation between IQ and conformity. Other works (Ratcliffe, 1956; DiVesta, 1960; Peterson, 1963; Smith, 1964) indicate generally that there is an inverse relationship between conformity and intelligence. In a

study dealing with bright and dull children, Lucito (1964) also reported such an inverse relationship.

Age of subject

This factor has not been as frequent a topic for research as one might expect. However, DiVesta (1960) reports a negative correlation between conformity and subject's age.

Birth order

Conflicting results are seen from studies utilizing birth order as a predictor of behavior. Becker (1966) found a differential manner of response in certain subjects, in that first-born subjects were more responsive to normative, group influence than were later-born subjects. These later-born were found to be more responsive to informational influences. Thorne (1963) indicated that birth order did not influence conformity behavior.

Experimental Situation Variables

The conditions under which conformity behavior has been produced vary considerably in type. They have ranged from the classic studies of Asch (1951, 1956) wherein a single subject was influenced by a unanimous group of supposed peers, to the work of Crutchfield (1955) and his machine-manipulation of groups of subjects. Peer and/or group influence, "expert opinion," the amount of personal commitment, et cetera, have all been used as experimental variables in attempting to predict conforming behaviors.

Reward and punishment as independent variables have yielded diverse results. French (1960) indicates that coercive power and punishment cause conformity. Gorfein (1960) reports, however, that reward does not affect the amount of yielding behavior. Endler (1965) utilized a methodology wherein one group of subjects received conformity reinforcement every time they agreed with a contrived consensus, and another group was similarly reinforced every time they disagreed with a contrived group consensus. The results seemed to indicate that reinforcement for conforming behavior increased such behavior, and, likewise, reinforcement for disagreeing decreased conformity responses.

CHAPTER II

PROBLEMS

It appears that the marked inconsistency of findings concerning those personality traits contributing to conformity behavior points to an obvious need for further and more definitive investigation. In addition, the majority of previous researches have consisted of unidimensional approaches. Even though we have a great many traits purportedly predictive of conformity, because they are described in mainly univariate studies there is no means that will allow us to predict which is singularly most important.

The problem thus seems to consist of four aspects: First, there is a need to determine whether there is, or is not, a conformer personality pattern generic to each type pressure situation described as "group" or "expert" pressure; second, if such personality patterns exist, can a prediction equation be constructed; third, if a predictive equation can be constructed, it will give an answer to the relative importance of the variables previously found to be related to conformity behavior; fourth, if a prediction equation is derived, it should be validated, thus permitting a definitive statement to be made as to the precise personality pattern that leads to conformity behavior in different pressure situations.

CHAPTER III

METHOD

PHASE I

This research attempted to discover the relationships, if any, between specific predictor variables and the criteria of conformity behaviors under conditions of "group" or "expert" pressure.

The first order predictor variables whose effects were to be investigated were as follows:

1. Birth order
2. Chronological age of subject
3. Sex of subject
4. Race
5. Intelligence, using the California Test of Mental Maturity, Short Form, (1958 Ed.)
6. Socioeconomic status of subject
7. Geographic areas of residence
8. Religion
9. Anxiety, using the IPAT Anxiety Scale Questionnaire, Form A (1957)
10. Dogmatism, using the Rokeach Dogmatism Scale (1954)
11. Rigidity, using the Gough-Sanford Rigidity Scale, as abstracted from the California Personality Inventory, (1956) by special permission of the author.
12. Acquiescence, using the 70 item scale of the "Yeasayers and Naysayers Agreeing Response Set" high and low mean scale. (Couch, Kenniston 1960)

13. Ego Strength, using the IPAT Anxiety Scale Questionnaire, Form A (1957).
14. Confidence, using the Saunders Self-Sufficiency Scale, as abstracted from the IPAT 16 P.F., Form A (1957).
15. Extroversion/Introversion, using the Eysenck Personality Inventory, Form A (1968).
16. Impulsivity, using the Barratt Impulsivity Scale, by special permission of the author.
17. Neuroticism, using the Eysenck Personality Inventory, Form A (1968).

These assessments and measurement techniques were utilized because of their accepted use in previous conformity research (Harvey, 1963; Rokeach, 1954; Youniss, 1958; Tuddenham, 1958; DiVesta, 1960; Peterson, 1963; Becker, 1966; Thome, 1963; Walters, 1960; Meyers, 1962) as well as for the customary criteria of validity and reliability.

Their $\bar{X}$s, S.D., and other measures of distribution are noted in Table I.

TABLE I

SCORE DISTRIBUTION ON ASSESSMENT INSTRUMENTS

VARIABLE	INSTRUMENTS	DISTRIBUTIONS
Anxiety	IPAT Anxiety Scale Questionnaire	Stens; all Ss were scored by sex and education $\bar{X}$ = 5.5
Dogmatism	Rokeach Dogmatism Scale	$\bar{X}$ = 23
Acquiescence	Couch-Keniston Acquiescence Scale, using the 70 item scale of the "Yeasayers and Naysayers Agreeing Response Set" high and low mean scale.	70 items Range: 0-70; high score = high "agreeing response set;" low score = low "agreeing response set; $\bar{X}$ = 33
Ego Strength	IPAT 16 P.F., "Ego Weakness:" subtest, Form A	Stens; all Ss were scored by sex and education $\bar{X}$ = 5.5
Confidence	IPAT 16 P.F., Q2,Q3, Q4 of Form A, B, and C. (Formerly used as Saunder's Self-Sufficiency Scale)	Range: 0-99; $\bar{X}$ = 33.5
Extroversion/ Introversion	Eysenck Personality Inventory, Form A	Raw Score of 11-12= 42 to 52 per cent of college students. $\bar{X}$ = 13.1, S.D.=4.1
Impulsivity	Barratt Impulsivity Scale (by special permission of the author)	85 items; high score= high "impulsivity;" low score = low "impulsivity."
Neuroticism	Eysenck Personality Inventory, Form A	Raw Score of 9-10= 48 to 55 per cent of college students; $\bar{X}$ = 10.9, S.D.=4.7
Rigidity	Abstracted from California Personality Inventory (by special permission of the author)	Range 0 to 21; high "True" score equate with high "rigidity."

The "geographic area" of each subject was ascertained by utilizing the nomenclature of the United States Bureau of the Census' 1960 publication. The United States was divided into nine major areas, and further subdivided into the three classifications of "Urban," "Borderline," and "Rural," as noted in Table II.

The subject's socioeconomic status, or "SES," was evaluated on the basis of the father's occupation and his number of years of education. The subjects were rated on a linear continuum (numerical scale) of 2 to 24. The numerical score was based upon the numerical values obtained from the dichotomization indicated in Table III. (Warner, Meeker, Eells, 1960)

TABLE II

GEOGRAPHIC AREA OF SUBJECT

New England	Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut
Middle Atlantic	New York, New Jersey, Delaware, Pennsylvania
South Atlantic	Maryland, Virginia, District of Columbia, North Carolina, South Carolina, Georgia, Florida
East North Central	Michigan, Ohio, Indiana, Illinois, Wisconsin
East South Central	West Virginia, Kentucky, Tennessee, Alabama, Mississippi
West North Central	Minnesota, Iowa, North Dakota, South Dakota, Nebraska
West South Central	Missouri, Arkansas, Louisiana, Kansas, Oklahoma, Texas
Mountain	Montana, Wyoming, Colorado, New Mexico, Idaho, Utah, Arizona, Nevada
Pacific	Washington, Oregon, California, Alaska, Hawaii

Urban - Population over 100,000

Borderline - Population 25,000 to 100,000

Rural - Population below 25,000

1 New England - Urban

2 New England - Borderline

3 New England - Rural

TABLE II (continued)

4	Middle Atlantic - Urban
5	Middle Atlantic - Borderline
6	Middle Atlantic - Rural
7	South Atlantic - Urban
8	South Atlantic - Borderline
9	South Atlantic - Rural
10	East North Central - Urban
11	East North Central - Borderline
12	East North Central - Rural
13	East South Central - Urban
14	East South Central - Borderline
15	East South Central - Rural
16	West North Central - Urban
17	West North Central - Borderline
18	West North Central - Rural
19	West South Central - Urban
20	West South Central - Borderline
21	West South Central - Rural
22	Mountain - Urban
23	Mountain - Borderline
24	Mountain - Rural
25	Pacific - Urban
26	Pacific - Borderline
27	Pacific - Rural

TABLE III

SCALE FOR RATING SOCIOECONOMIC STATUS OF SUBJECT

Rating	Professionals	Proprietors and Managers	Business Men	Clerks and Kindred Workers, etc.	Manual Workers	Protective and Service Workers	Farmers
1	Lawyers, doctors, dentists, engineers, judges, high-school superintendents, veterinarians, ministers (graduated from a divinity school) chemists, etc. with post-graduate training, architects	Businesses valued at $75,000 and over	Regional and divisional managers of large financial and industrial enterprises	Certified Public Accountants			Gentleman farmers
2	High-school teachers, trained nurses, chiropodists, chiropractors, undertakers, ministers (some training), newspaper editors, librarians (graduate)	Businesses valued at $20,000 to $75,000	Assistant managers and office and department managers of large businesses, assistants to executives, etc.	Accountants, salesmen of real estate or insurance, post masters			Large farm owners, farm owners
3	Social workers, grade-school teachers, optometrists, librarians (not graduate), undertaker's assistants, ministers no training	Businesses valued at $5,000 to $20,000	All minor officials of businesses	Auto salesmen, bank clerks and cashiers, postal clerks, secretaries to executives, supervisors of railroad, telephone, etc., justices of the peace	Contractors		
4		Businesses valued at $2,000 to $5,000		Stenographers, bookkeepers, rural mail clerks, railroad ticket agents, sales people in dry goods store, etc.	Factory foreman, electricians)-own plumbers)-business carpenters)-ness watchmakers)	Dry cleaners, butchers, sheriffs, railroad engineers, and conductors	
5		Businesses valued at less than $500		Drug store clerks, hardware salesmen, beauty operators, telephone operators	Carpenters, plumbers, electricians (apprentice), timekeepers, linemen, telephone or telegraph, radio repairmen, medium-skill workers	Barbers, firemen, butcher's apprentices, practical nurses, policemen, seamstresses, cooks in restaurant, bartenders	Tenant farmers
6					Moulders, semi-skilled workers, assistant to carpenter, etc.	Baggage men, night policemen and watchmen, taxi drivers, gas station attendents, waitresses in restaurant	Small tenant farmers
7					Heavy labor, migrant work, odd-job men, miners	Janitors, scrubwomen, newsboys	Migrant farm laborers

FOLLOWING RATING WAS USED FOR EDUCATION:

8	Professional or graduate school
9	College education 1 to 4 years
10	High school graduate
11	One to three years of high school
12	Grammar school graduate (finished 8th grade)
13	Four to seven years of school
14	Zero to three years of school

PHASE I

Subjects

104 randomly selected undergraduate students at a private, Methodist-affiliated Midwestern liberal arts college were evaluated on the basis of the 17 aforementioned predictor variables.

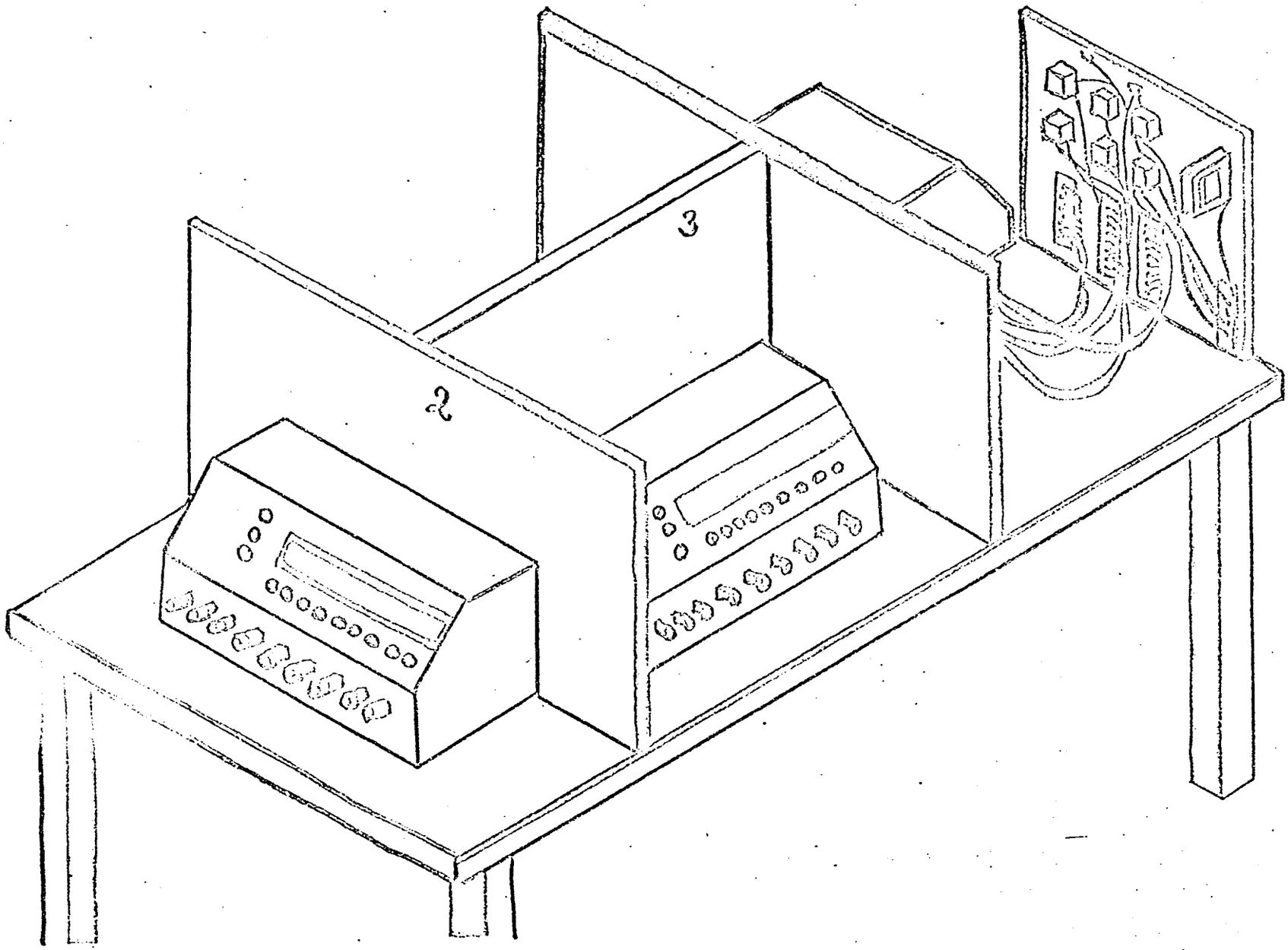
Apparatus

The apparatus used in this study is functionally related to the equipment used by Tuddenham (1960) to study conformity in group situations.

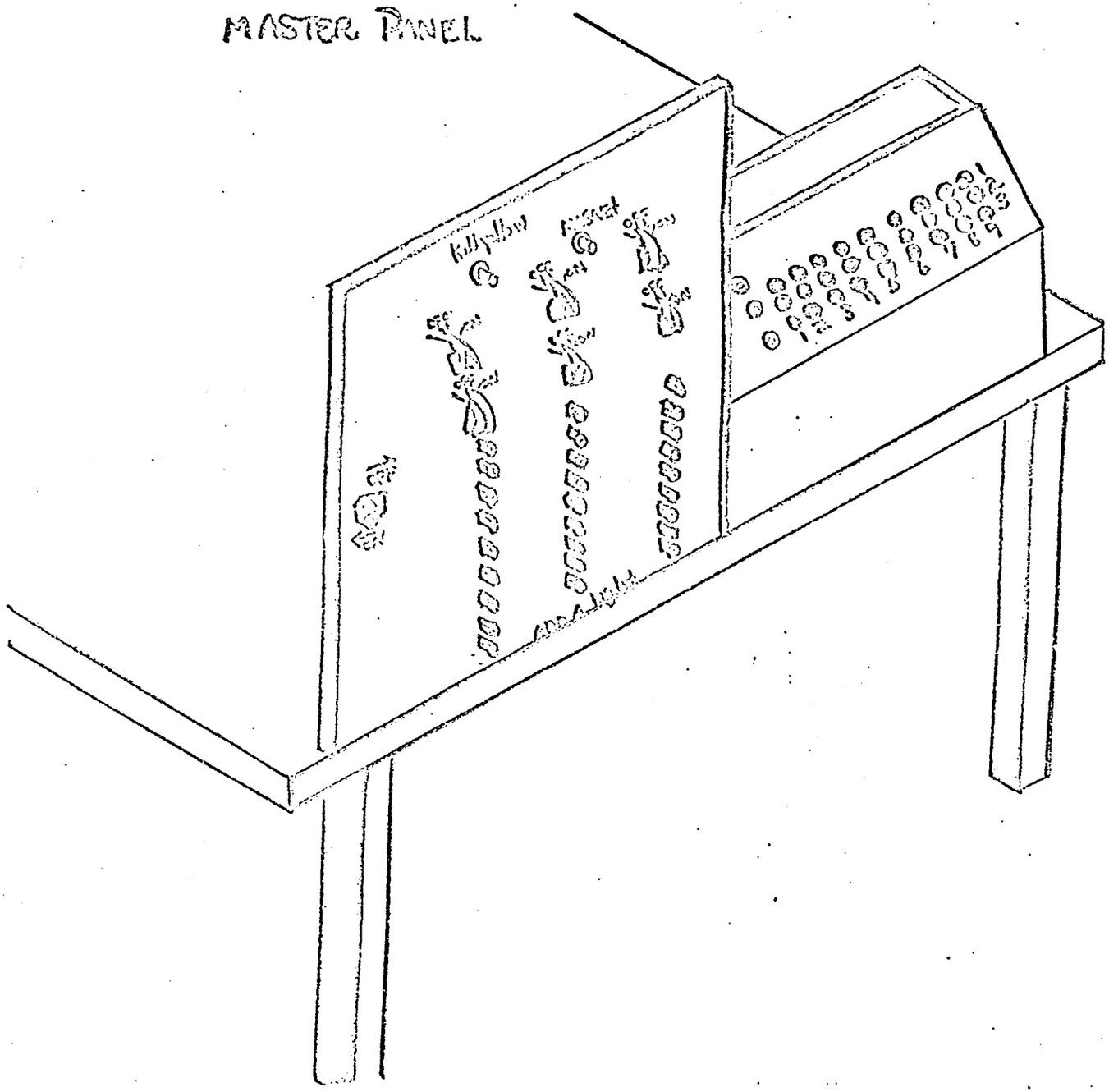
Drawings of the apparatus are contained in Illustrations I and II.

A modification of Tuddenham's standardized items was employed. (See appendix P) Each S had a panel upon which he could indicate an answer choice among nine or less possible answers by pulling the appropriate switch. Whenever the Ss activated a switch their responses were seen as a light on the E's panel; however, S's choices were irrelevant as the situation was a contrived one.

TESTING AREA



MASTER PANEL



The Ss were tested in separate compartments, making it possible to run simulated groups as well as Ss and an "expert." E's panel was so wired that he could communicate with each S. Each S's panel contained an amber, a green, and a red light under the control of the E. The amber light was used to indicate to S that they must make a new decision and either change or affirm their previous response. The green and red light indicated that their initial answer was "in agreement" or "not in agreement" in each choice situation. S's new decision was indicated by their use of the appropriate switch.

As aforementioned, the various psychological assessments utilized were those, in the main, that had been previously utilized in conformity problems research. Obviously, other measurements could have been utilized. Too, the question of the diverse variabilities and reliabilities of the assessments is acknowledged; however, it is not the purview of this investigation to deal with these concepts specifically.

Birth Order, Chronological Age, Sex, SES, Geographic Area, and Religion were obtained from a questionnaire each S completed.

TABLE IV

QUESTIONNAIRE

1. Your Name: _____
2. Sex: Male _____ Female _____
3. Birth Order: Only Child _____ First-Born _____
   Second-Born _____ Third-Born _____
   Adopted _____ Other _____
4. Were you reared by your natural parents? Yes _____
   No _____
5. Chronological Age: (In Years) _____
6. Is your father living? Yes _____ No _____
7. If your father is living, what is his level of education?
   _____ Thru grade school _____ Thru 8th grade
   _____ Thru high school _____ Some college
   _____ 4 years college _____ M.S. _____ Ph.D.
   _____ other
   (If "Other," please be specific.) _____
8. If your father is living, what is his occupation?
   _____
9. In what city and state do you permanently reside?
   _____
10. To what religious denomination do you belong?
    _____

Procedure

The 104 Ss were randomly assigned to either a "Type G: Group Pressure" group or a "Type E: Expert Pressure" group. All Ss were tested in separate compartments, making it possible to compose simulated groups. E's panel was so wired as to make it possible to simulate "group opinion" and "expert opinion" for each S, and the E controlled all simulated responses.

All Ss were presented samples of Tuddenham's thirty conformity problems, each of which has nine alternative answers. For each problem, the Ss chose an answer and signaled it to the E. The Ss were then in return signaled that they were either "in agreement" or "not in agreement" according to the "group" or "expert." Then each S was given an opportunity to change or affirm his answer and to signal his final decision.

For all problems except 1, 2, 3, 7, 13, 23, and 27 the S's response was followed by a signal from the E indicating that the S was "not in agreement" according to the "group" or "expert." Problems 1, 2, 3, 7, 13, 23, and 27 were signaled as "in agreement" responses.

The coincidence of answers to problems 1, 2, 3, et cetera, was to minimize S insight into the purpose of the study.

"Conforming behavior" is defined as the S's changing their response more than fifty percent of the time. In a

two-choice situation the probability of a single response being made is precisely "even," fifty-fifty, or one of two chances. Hence, if a subject shows a significantly higher number of conforming responses, the variables of "group" and "expert" pressure have had a significant effect.

This procedure yielded four groups of Ss:

"Type G_1 : conformity to group pressure"

"Type G_2 : not-conformity to group pressure"

"Type E_1 : conformity to expert pressure"

"Type E_2 : not-conformity to expert pressure"

The term "not-conformity" was used to specifically avoid the problems germane to the use of the term, "non-conformist." It should be noted that no statements are offered to describe, operationally, a "non-conformist."

Results

A "Stepwise Multiple Discriminant Function Analysis" computer program to investigate the existence of characteristics which would distinguish the four groups of Ss produced by the conformity situation was used. Regression equations for the prediction of each type of "conformity" and "not-conformity" were computed.

TABLE V

STEPWISE MULTIPLE DISCRIMINANT FUNCTION

ANALYSIS PROGRAM

(FORTRAN 4 Language)

```
ZZJOB
ZZFORX
          Dimension C(18,4),X(17),NG(2),SS(4),NFRQ(4)
          READ 1, (( C(I,J),J=1,4)I=1,18)
 1        FORMAT (5X,4F10.8)
          DO 5 J=1,4
 5        NFRQ(j)-0
10        READ 2,N,X
 2        FORMAT (I4,5X,F2.0,Fe.0,2F2.0,F4.0,F2.0,F3.0,
          F2.0,9F3.0)
          IF(N)20,20,30
20        PUNCH 3, NFRQ
 3        FORMAT (//2H E219, 10X2H G, 219///)
          CALL EXIT
30        DO 100 IX=1,2
          DO 50 JX-1,2
          J=JX+2*(IX-1)
          S=C(18,J)
          DO 40 I-1,17
40        S=S+C(I,J)*X(I)
50        SS(J)=S
          J=(IX-1)*2+1
          IF(SS(J)-SS(J+1))70,60,60
```

TABLE V (continued)

```
60          NG(IX)=1
            GO TO 80
70          NG(IX)=2
80          J=NG(IX)=2*(IX-1)
            NFRQ(J)=NFRQ(J)+1
100         CONTINUE
            PUNCH 4,N,NG(1),SS(1),SS(2),NG(2),SS(3),SS(4)
 4          FORMAT (15X1HE 12,2F10.4,5X1HG 12,2F10.4)
            GO TO 10
            END
```

The data were processed via an IBM 1401 computer at the Southern Illinois University-Edwardsville Branch, at Edwardsville, Illinois. FORTRAN 4 language was utilized. This program is quite similar to "Multiple R" in that it ascertains which specific variable to eliminate initially, to wit, the one that accounts for the least amount of variance. Then, "discriminant weights" were computed for each variable.

Table VI indicates the discriminant weights at the .04 level of confidence for the E_1 and E_2 group. The G_1 and G_2 weights are significant at the .01 level of confidence.

Data analysis indicates that there were, indeed, different variables contributing to the various conforming or not-conforming behaviors. Perusal of the data "print-out" yielded the following findings:

For the Type G_1 and Type G_2 S's, deletion of the variable "Impulsivity" yielded an R^2 of .40, F = 1.35, P = .16; deletion of "Rigidity" yielded an R^2 of .40, F = 1.48, P = .10; deletion of "Neuroticism" yielded an R^2 of .40, F = 1.62, P = .06; and deletion of "Religion" yielded an R^2 of .40, F = 1.76, P = .03. Deletion of these variables yields significance at the .03 Level of Confidence.

For the Type E_1 and E_2 S's, deletion of the variable "Ego Strength" yielded an R^2 of .36, F = 1.15, P = .32; deletion of "Dogmatism" yielded an R^2 of .36, F = 1.25, P = .23; deletion of "Chronological Age" yielded an R^2 of .36, F = 1.35, P = .15; and deletion of "Rigidity" yielded an R^2 of .36, F = 1.50, P = .08 Level of Confidence.

TABLE VI

PHASE I DISCRIMINANT FUNCTION WEIGHTS

(First Order Variables)

	Groups			
Variable	E_1*	E_2*	G_1**	G_2**
1	-.0162003	-.0146869	-.0565002	-.0578750
2	---	---	.0406039	.0426022
3	.3402595	.3220530	.1662263	.1814081
4	1.4592789	1.4130924	.7921080	.7765087
5	.0312626	.0300566	.0195960	.0201118
6	.0118051	.0143494	.0358316	.0388259
7	.0037942	.0005346	.0698959	.0687720
8	.3424812	.3263638	---	---
9	.0964744	.0837088	-.0364962	-.0274398
10	---	---	.0684519	.0641278
11	---	---	---	---
12	.0229030	.0215116	.0147106	.0172709
13	---	---	.0494433	.0436472
14	-.0023913	-.0014989	.0349193	.0336275
15	.0159433	.0144541	.0379806	.0386756
16	.0122429	.0134652	---	---
17	-.0064478	-.0028945	---	---

* Significant at the .04 Level of Confidence

** Significant at the .01 Level of Confidence

Further data analysis yielded the following Phase I descriptive data:

TABLE VII

PHASE I DESCRIPTIVE DATA

Conformers to expert pressure Group E_1 n = 35				Not-conformers to expert pressure Group E_2 n = 17			
	Variable	$\bar{X}$	S.D.		Variable	$\bar{X}$	S.D.
2	CA	20.9	4.8	2	CA	20.7	2.3
5	IQ	116.1	12.6	5	IQ	112.7	12.9
6	SES	6.6	2.5	6	SES	7.4	2.3
9	Anxiety	5.8	2.1	9	Anxiety	4.7	2.2
10	Dogmatism	24.1	3.7	10	Dogmatism	23.1	4.2
11	Rigidity	9.2	3.0	11	Rigidity	10.0	3.7
12	Acquiescence	34.6	5.9	12	Acquiescence	31.9	3.5
13	Ego Strength	5.4	1.9	13	Ego Strength	4.7	2.6
14	Confidence	32.0	7.0	14	Confidence	30.9	7.6
15	Extro/Intro	14.5	4.6	15	Extro/Intro	13.5	3.5
16	Impulsivity	30.1	6.5	16	Impulsivity	29.7	3.4
17	Neuroticism	9.8	4.8	17	Neuroticism	10.2	5.1

TABLE VII (continued)

Conformers to group pressure				Not-conformers to group pressure			
Group G_1 n = 25				Group G_2 n = 27			
Variable		$\bar{X}$	S.D.	Variable		$\bar{X}$	S.D.
2	CA	22.5	3.5	2	CA	23.6	9.9
5	IQ	111.6	16.7	5	IQ	121.0	13.6
6	SES	6.0	3.4	6	SES	4.9	2.8
9	Anxiety	5.8	2.2	9	Anxiety	5.6	2.9
10	Dogmatism	23.6	4.2	10	Dogmatism	19.0	6.3
11	Rigidity	10.4	3.7	11	Rigidity	10.9	4.8
12	Acquiescence	31.5	5.4	12	Acquiescence	29.9	9.3
13	Ego Strength	5.7	2.3	13	Ego Strength	4.9	2.8
14	Confidence	33.8	5.2	14	Confidence	30.4	9.8
15	Extro/Intro	12.4	3.9	15	Extro/Intro	11.5	5.7
16	Impulsivity	27.1	5.9	16	Impulsivity	25.2	9.1
17	Neuroticism	10.9	4.8	17	Neuroticism	8.6	5.5

As anticipated, these data, and the resultant discriminant function weights, enabled E to predict the specific behavior that a S would demonstrate when subjected to a conformity situation by utilizing the "second-order" variables.

PHASE II

Subjects

The appropriate predictor instruments were given to 218 randomly selected students attending the same private, Methodist-affiliated Midwestern liberal arts college and were evaluated using the discriminating second order variables found in Phase I. On the basis of their scores on the predictor instruments, their performance under "Type E" and "Type G" pressure was predicted.

Apparatus

The apparatus was the same as used in Phase I.

Procedure

218 Ss were randomly assigned to either "Type E" or "Type G" condition. The procedure was the same as used in Phase I and the criterion for determining "conformity behavior" was the same as used in Phase I.

At the conclusion of the procedure, each S was asked, "What do you think was the purpose of this study?" Those Ss correctly perceiving the purpose were excluded as their data would not be pertinent; a total of 11 Ss were thus excluded.

TABLE VIII

PHASE II RESULTS

PHASE II DESCRIPTIVE DATA

Group E_1 n = 85 Conformers to expert pressure				Group E_2 n = 38 Not-conformers to expert pressure			
	Variable	$\bar{X}$	S.D.		Variable	$\bar{X}$	S.D.
2	CA	20.8	9.2	2	CA	23.6	9.3
5	IQ	114.2	12.1	5	IQ	119.0	10.3
6	SES	5.2	2.3	6	SES	6.4	2.6
9	Anxiety	6.5	2.1	9	Anxiety	5.9	2.2
10	Dogmatism	24.2	4.2	10	Dogmatism	23.2	6.0
12	Acquiescence	33.3	5.5	12	Acquiescence	32.9	4.2
13	Ego Strength	6.5	2.4	13	Ego Strength	6.4	2.2
14	Confidence	33.5	6.0	14	Confidence	32.8	6.6
15	Extro/Intro	13.1	3.9	15	Extro/Intro	11.8	3.8
16	Impulsivity	28.3	5.1	16	Impulsivity	27.9	5.0
17	Neuroticism	12.1	4.9	17	Neuroticism	9.9	4.5
	Group G_1 n = 45				Group G_2 n = 50		
2	CA	21.0	10.8	2	CA	21.5	8.0
5	IQ	116.0	13.4	5	IQ	116.2	11.4
6	SES	5.9	2.4	6	SES	5.9	2.7
9	Anxiety	6.6	1.7	9	Anxiety	6.0	1.9
10	Dogmatism	23.5	3.7	10	Dogmatism	23.2	4.2
12	Acquiescence	32.9	5.1	12	Acquiescence	33.7	5.5
13	Ego Strength	5.9	2.3	13	Ego Strength	5.4	2.3

TABLE VIII (continued)

	Group G_1 n = 45				Group G_2 n = 50		
14	Confidence	34.7	5.2	14	Confidence	34.8	7.0
15	Extro/Intro	12.9	3.6	15	Extro/Intro	12.3	4.2
16	Impulsivity	28.4	5.3	16	Impulsivity	28.5	5.2
17	Neuroticism	11.4	4.5	17	Neuroticism	10.9	5.4

TABLE VIII

PHASE II DESCRIPTIVE DATA

GEOGRAPHIC AREA

Group E_1 n = 85

Areas	Frequency
4	3
5	1
7	2
10	8
11	6
12	64
6	1

Group E_2 n = 38

Areas	Frequency
4	3
10	4
11	2
12	24
18	1
19	2
25	1
26	1

Group G_1 n = 45

Areas	Frequency
4	2
7	1
10	4
11	4
12	33
20	1

Group G_2 n = 50

Areas	Frequency
7	2
10	4
11	7
12	30
13	1
19	4
21	1
25	1

TABLE VIII

PHASE II DESCRIPTIVE DATA

SOCIAL ECONOMIC STATUS

Range 2 to 14

Group E_1 n = 85	
2	13
3	8
4	10
5	22
6	10
8	4
9	2
10	3
11	1
12	1

Group E_2 n = 38	
2	1
3	4
4	7
5	6
6	0
8	4
9	4
10	4
11	2

Group G_1 n = 45	
2	4
3	6
4	3
5	10
6	3
7	6
8	7
9	3
10	2
11	1

Group G_2 n = 50	
2	5
3	7
4	6
5	6
6	6
7	5
8	7
9	3
10	1
11	3
12	1

TABLE VIII

PHASE II DESCRIPTIVE DATA

RACE-RELIGION-SEX

Group E_1 n = 85

Variable					
3	Sex	45 Males	40 Females		
4	Race	81 White	4 Blacks		
8	Religion	54 Protestant	28 Catholic	0 Jewish	1 Agnostic

Group E_2 n = 38

Variable					
3	Sex	22 Males	16 Females		
4	Race	36 White	2 Blacks		
8	Religion	26 Protestant	7 Catholic	0 Jewish	5 Agnostic

Group G_1 n = 45

Variable					
3	Sex	23 Males	22 Females		
4	Race	44 White	1 Black		
8	Religion	38 Protestant	7 Catholic	0 Jewish	0 Agnostic

Group G_2 n = 50

Variable					
3	Sex	24 Males	26 Females		
4	Race	45 White	5 Blacks		
8	Religion	36 Protestant	13 Catholic	0 Jewish	1 Agnostic

TABLE VIII

PHASE II DESCRIPTIVE DATA

BIRTH ORDER

	Group E_1 n = 85			Group E_2 n = 38	
1	1st born	47	1	1st born	21
2	2nd born	21	2	2nd born	6
3	3rd born	10	3	3rd born	5
4	4th born	5	4	4th born	3
5	5th born	1	5	5th born	3
6	6th born	1	6	6th born	0
	Group G_1 n = 45			Group G_2 n = 50	
1	1st born	19	1	1st born	15
2	2nd born	13	2	2nd born	21
3	3rd born	8	3	3rd born	8
4	4th born	1	4	4th born	2
5	5th born	3	5	5th born	3
6	6th born	1	9	9th born	1

A total of 123 subjects were placed in the expert pressure situation and 95 subjects were placed in the group pressure situation. Analysis of these data by Chi-Square yielded results as follows:

Chi-Square Analysis

$E_o = 73$ $G_o = 47$ $E_e = 61.5$ $G_e = 41.7$

$\text{Chi-Square}_E = 1.9$

Significant at the .20 Level of Confidence

$\text{Chi-Square}_G = 0$ not significant

From these data the question of which specific type behavior is most efficiently predicted can be answered when we note that those subjects predicted to be conformers to expert pressure were correctly identified 74 per cent of the time. Further, those subjects who were predicted to conform to group pressure were predicted correctly 62 per cent of the time. Thus, we may conclude that it is obviously a facile task to identify the Ss who are conformers in either pressure type situations.

Further, the question might be asked as to which specific type behavior, of the four possible, is most difficult to predict. We note that those subjects who were predicted to not conform to expert pressure were correctly identified only 32 per cent of the time. Those subjects that were predicted to not conform to group pressure were correctly identified only 40 per cent of the time. Thus, the not-conformer to expert pressure is the most difficult behavior to predict. The largest

sources of error appear to be found when, first, predicting the expert pressure "not-conformer," and, second, when predicting the group pressure "not-conformer."

The over-all correct prediction rate is ascertained at 56 per cent of the time. While occurring at an "above chance" level, it is opined that by utilizing the second order variables and the assessments previously described, this prediction rate is not sufficiently high to warrant a highly certain or dogmatic description of the personality constellations of any type subject.

It is interesting to note that of the total number of subjects utilized, 60 per cent of them conformed at all times regardless of the types of pressure. This indicates that when the subject was predicted to be a not-conformer, 60 to 68 per cent nevertheless, did conform.

Further analysis of the data indicates that of those subjects subjected to expert pressure, 69 per cent conformed and of those subjects subjected to group pressure only 41 per cent conformed.

It is offered by way of possible explanation of why so few of the E_2 subjects were correctly predicted that the low n in the pilot phase of the study may have led to ineffective discriminant weights being computed. It is obvious that an increase in the total n would increase the "power" of the predictive equation.

CHAPTER IV

ANALYSIS OF DATA

Statistical Description of the conformer and not-conformer to expert pressure.

The Conformer to Expert Pressure

According to the data gathered in Phase II, the conformer to expert pressure is typically seen as follows:

They are, most frequently, a first-born, 20.8 year old individual.

They are, as a group (n = 85), equally divided between males and females. They are, as a group, members of the Caucasian race with an approximate IQ of 114.

The socioeconomic status of the subjects was found to range within the 2 to 7 classification (according to Warner) with the largest single group of subjects achieving a rating of 5. This would point to parents who were high school graduates or above and who were either professional persons, business proprietors, or managers, et cetera.

As a group, their geographic area of residence was mostly seen as that of the Rural East North Central United States which would indicate they came from cities with populations below 25,000 within the states of either Michigan, Ohio, Indiana, Illinois or Wisconsin. It must be noted, however, that this finding is very probably spurious and is germane to the restrictive nature of the population choice involved. No fruitful attempt could be made to obtain a

genuinely selective-representative sample according to the national distribution of the population. Hence, the findings are not considered to be relevant or valid for predictive purposes. Their religion was, on an almost two-to-one basis, Protestant (n = 54) as opposed to Roman Catholic (n = 28).

Anxiety

They were found to have only "slightly above average anxiety" with a stanine of 6.5 on the IPAT Anxiety Scale Questionnaire, Form A, (1957) which is only slightly above an average score. An average score on this assessment is considered to be within a 4 to 6 stanine range.

Dogmatism

Insofar as dogmatism is concerned, they were found to be, again, only "slightly above average" in dogmatism with a score of 24.2 on the Rokeach Dogmatism Scale (1954) compared with a $\bar{X}$ of 23 reported by Rokeach (1954) in his research.

Acquiescence

The amount of acquiescence they demonstrated was found to be certainly within "average" limits. As we note, according to the authors of the test, a $\bar{X}$ of 33 indicates an average "agreeing response set." The subjects in the E_1 group achieved an $\bar{X}$ of 33.3.

Ego Strength

In ego strength they were found to be relatively "average" with a stanine of 6.5 on the IPAT Anxiety Scale

Questionnaire, Form A, (1957) which would indicate that a subject in this group is not typified by "ego weakness."

Confidence

They were found to be of "average" confidence, obtaining a $\bar{X}$ of 33.5 on the Saunders Self-Sufficiency Scale, which is considered to be identical to the $\bar{X}$ described by the test author (1957).

Extroversion/Introversion

They were found to be, when compared with college students in the Eysenck standardization sample for the Eysenck Personality Inventory, Form A, (1968), slightly extroverted with a $\bar{X}$ of 13.1 which is identical to the standardization sample $\bar{X}$.

Impulsivity

They were not found to be "exceptionally" impulsive, having obtained a $\bar{X}$ of 28.3 on the Barratt Impulsivity Scale; this may be considered to be an indication of "low impulsivity."

Neuroticism

They were found, however, to be relatively "more neurotic" than the sample of college students obtained by Eysenck for the Eysenck Personality Inventory (1968). In his standardization sample, he obtained a $\bar{X}$ of 10.9 to comprise 48 to 55 per cent of college students; the conformer to expert pressure obtained a mean neuroticism score of 12.1 which would indicate they are, as a group, slightly more neurotic than the average college student.

The Not-Conformer to Expert Pressure

It should be noted that the relatively small number of 38 subjects must be carefully kept in mind as description of the not-conformer to expert pressure is attempted. The author is cognizant of the hazards involved in small sample research, and thus the data are interpreted but tentatively and with caution.

These subjects were found to be, in the great majority of cases, first-born individuals with an average age of 21.5. Insofar as the sex of the subjects was concerned, there were slightly more males in the group than females (22 males, 16 females) and they were, by far in the majority, members of the white race.

They were found to be slightly more intelligent than the conformer to expert pressure, having a $\bar{X}$ IQ of 119 as opposed to a conformer $\bar{X}$ IQ of 114. It may thus be hypothesized that the not-conformer to expert pressure is a more intelligent individual with an IQ approaching the upper limits of the "bright normal" range.

The social status evaluation of these subjects was characterized by an extreme amount of scatter with no singularly identifiable group having a clear-cut majority. They were, as a rule, of lower SES than the subjects who were identified as conformers.

Their geographic area of origin was found to be the same as that of the conformer which would possibly indicate that the geographic area from which the subjects originated

was not a particularly strong (contributing to, or accounting for the variance) variable insofar as this group of subjects was concerned.

Anxiety

As a group (n = 38) they were somewhat less anxious than the conformer. The conformer mean anxiety score on the IPAT Anxiety Scale Questionnaire, Form A, (1957) was 6.5, and the not-conformer mean anxiety score was 5.9.

Dogmatism

Also, they were slightly (not significantly) less dogmatic with a mean of 23.2 as contrasted with a conformer mean of 24.2 on the Rokeach Dogmatism Scale (1954). Less in possession of an "agreeing response set," they had a mean of 32.9 as compared to 33.9 for the conformer group on the California Personality Inventory (1956).

They were found to be basically the same in ego strength with a mean of 6.4 as compared with a mean of 6.5 on the IPAT Anxiety Scale Questionnaire, Form A, (1957).

Insofar as confidence is concerned, they had a mean of 32.8 compared to a mean of 33.5 on the Saunders Self-Sufficiency Scale (1957).

They were, however, more introverted than the conformer. It was noted that the conformer group obtained a mean score of 13.5 while the not-conformer group obtained a mean score of 11.8 on the Eysenck Personality Inventory, Form A, (1968).

There would seem to be no significant difference between the subjects on the variable of impulsivity as the not-conformer group obtained a mean of 27.9 compared to a conformer group mean of 28.3 on the Barratt Impulsivity Scale.

However, it should be noted that the not-conformer was decidedly less neurotic than the conformer, with the conformer obtaining an Eysenck Personality Inventory, Form A, (1968) mean neuroticism score of 12.1 and the not-conformer obtaining a mean score of 9.9, which is strikingly lower than the mean neuroticism score obtained by Eysenck for college students.

Statistical Description of the conformers and not-conformers to group pressure.

The Conformer to Group Pressure

Those subjects who conformed to group pressure are seen as being either a first-born (n = 19) or second-born (n = 13) individual of 21 years of age. They were equally divided between male and female sex and were almost all members of the white race. They obtained a mean IQ of 116 and yielded no clear-cut socioeconomic status. They were, in the majority, within the SES range of 2 to 8 with the largest single group (n = 10) in the 5 classification, closely followed by (n = 7) 8 and (n = 6) 7 and 3. They originated, insofar as geographic area is concerned, from the Rural East North Central United States area and were predominantely Protestant subjects.

Anxiety

Their anxiety score $\bar{X}$ of 6.6 on the IPAT Anxiety Scale Questionnaire, Form A, (1957) indicates that they are slightly "more anxious" than the average subject.

Dogmatism

They were not found to be "dogmatic" subjects, $\bar{X}$ = 23.5, as their score was not significantly different from the mean obtained by Rokeach in the Rokeach Dogmatism Scale (1954) standardization.

Acquiescence

Their acquiescence or "agreeing response set" was not significantly below the mean reported in the California

Personality Inventory (1956) and may be considered to be "average."

Ego Strength

They certainly would seem to indicate average ego strength with a $\bar{X}$ of 5.9 on the IPAT Anxiety Scale Questionnaire, Form A, (1957), although it might be noted that on this variable they are (not significantly) somewhat lower in ego strength than those subjects in the group described as conformers to expert pressure.

Confidence

They are slightly (not significantly) more confident than the average; we note Saunders citing a $\bar{X}$ of 33.5, whereas this group of subjects obtained a $\bar{X}$ score of 34.7.

Impulsivity

They are considered not to be highly impulsive with a $\bar{X}$ of 28.4 on the Barratt Impulsivity Scale.

Neuroticism

They were within normal limits insofar as neuroticism was concerned with a $\bar{X}$ of 11.4 which is not significantly different from Eysenck's reported collegiate $\bar{X}$ of 10.9 on the Eysenck Personality Inventory, Form A, (1968).

Not-Conformers to Group Pressure

The next group, those subjects described as "not-conformers" to group pressure, were as a group more typically the second-born child (n = 21) or possibly first-born (n = 15) and in some cases third-born (n = 8).

However, the group in which we note the majority of the subjects were second-born individuals.

They were, on the average, 21.5 years of age and were, as a group, more typically female than male. Thus, we see initially that the not-conformer to group pressure is seen to be more typically a second-born female.

The subject, too, was more typically a member of the white race. Insofar as intelligence is concerned, there is no apparent significant difference between the conforming subject to group pressure, for, in this group a $\bar{X}$ IQ of 116.2 was obtained. There was no obvious difference insofar as socioeconomic status is concerned in that, for this group, they were extremely evenly divided between groups 2 through 8 and were again most commonly from Rural East North Central United States. Concerning the variable of religion, two-thirds of these subjects were Protestant and one-third were Roman Catholic. Thus, it appears that this group of subjects is characterized as being second-born females with slightly more subjects belonging to the Roman Catholic faith than other groups.

Anxiety

The mean anxiety score of 6.0 is slightly indicative of less anxiety within this group as compared with the conformer to group pressure $\bar{X}$ of 6.6 on the IPAT Anxiety Scale Questionnaire, Form A, (1957).

Dogmatism

There is no significant difference insofar as dogmatism is concerned with a group $\bar{X}$ of 23.2 compared to a conformer $\bar{X}$ of 23.5 on the Rokeach Dogmatism Scale (1954).

Acquiescence

Concerning acquiescence, they obtained a $\bar{X}$ of 33.7 on the California Personality Inventory (1956) as contrasted to a $\bar{X}$ of 32.9 by the conformer group.

Ego Strength

They were of "average" ego strength with a $\bar{X}$ of 5.4, which is not significantly different from the conformer $\bar{X}$ of 5.9 on the IPAT Anxiety Scale Questionnaire, Form A (1957).

Confidence

They were almost identical in confidence, $\bar{X}$ = 34.8, with members of the conformers to group pressure group, whose $\bar{X}$ was 34.7 on the Saunders Self-Sufficiency Scale (1957).

Extroversion/Introversion

They are within normal limits insofar as extroversion and introversion is concerned with a $\bar{X}$ of 12.3 on the Eysenck Personality Inventory, Form A (1968).

Impulsivity

Almost identical to the conformer to group pressure, in impulsivity they obtained a $\bar{X}$ of 28.5 compared with a $\bar{X}$ of 28.4 on the Barratt Impulsivity Scale.

Neuroticism

They are not as neurotic as the conformer to group pressure, obtaining a $\bar{X}$ of 10.9 on the Eysenck Personality Inventory, Form A (1968); this is considered to be identical to Eysenck's standardization sample mean.

Interpretation of discriminant weights

It has been noted in review of the literature that various authors had ascertained, via small sample studies which utilized at the most 2 or 3 predictor variables, that specific variables were considered the critical ones in predicting various types of conforming behavior. Examination of the data gathered in this investigation does not corroborate some of the previous findings and does indeed, corroborate others.

However, examination of the data yields an important finding in that the various variables utilized are found to have different predictive values for the specific type of behavior in question. Further, it is noted that these variables are extremely diverse in predictive efficiency. In some types of behavior they are found to be of positive value and in others to be of negative value, and in some behaviors to be of no value whatsoever.

Relevance of Variables as Predictors of Conformity Behavior

Birth Order

Becker (1966) found that first-born subjects were more responsive to group influence and that later-born subjects were more responsive to informational influence. Thorne (1963) indicated that birth order did not influence conforming behavior.

In this research, it was found that a negative discriminant weight was derived for the variable of birth order across each type of conformity situation.

Predictive Discriminant Weights and Birth Order Rank

E_1 (n = 85)		E_2 (n = 38)		G_1 (n = 45)		G_2 (n = 50)	
-.0162003		-.0146869		-.0565002		-.0578750	
1	47	1	21	1	19	1	15
2	21	2	6	2	13	2	21
3	10	3	5	3	8	3	8
4	5	4	3	4	1	4	2
5	1	5	3	5	3	5	3
6	1			6	1	9	1

Age of Subject

DiVesta (1960) reported a negative correlation between conformity and the subject's age.

In this investigation, it was found that the variable of the subject's age does not yield a predictive discriminant weight whatsoever for any type of expert pressure situation and that, in fact, the group pressure subject is the only type subject for which we find a predictive discriminant weight.

Suffice it to say then that the age of the subject is a critical variable in predicting behavior in a group situation, but that it is an irrelevant variable insofar as the expert pressure situation is concerned. By inspection, we note that the not-conformer to expert pressure has the highest chronological age, $\bar{X}$ = 23.6. Conjointly, not-conformers appear slightly older than conformers.

Predictive Discriminant Weights and

$\bar{X}$ Chronological Age

E_1 (n = 85)	E_2 (n = 38)	G_1 (n = 45)	G_2 (n = 50)
-0-	-0-	.0406039	.0426022
$\bar{X}$ CA = 20.8	$\bar{X}$ CA = 23.6	$\bar{X}$ CA = 21.0	$\bar{X}$ CA = 21.5

Sex of Subject

Tuddenham (1958), DiVesta (1960), Patel (1960), Allen (1963), and Peterson (1963) would appear to concur in the finding that females are more susceptible to influence and do conform more than males.

This variable yielded a predictive discriminant weight for each type of conformity situation; however, the relative size of the weights obtained would indicate that the sex of the subject has more predictive value in an expert pressure situation than it has in a group pressure situation. Nevertheless, the variable does appear to be relevant to all types of conformity situations.

Predictive Discriminant Weights and Sex of Subject

E_1 (n = 85)	E_2 (n = 38)	G_1 (n = 45)	G_2 (n = 50)
.3402595	.3220530	.1662263	.1814081
Male.....45	Male.....22	Male.....23	Male.....24
Female...40	Female...16	Female...22	Female...26

Race of the Subject

It is perhaps difficult to understand why the race of the subject has not previously been included as a predictive variable in conformity research. Perusal of previous studies did not reveal pertinent investigation in the area.

It should be parenthetically noted that in this research the relative size of the sample that was obtained among subjects of the Negro race may well be a contributing factor to the size of the discriminant weight obtained. It is felt that the size of the sample of Negro subjects is too small (n = 12) to be of any genuine, valid predictive value.

However, examination of the data indicates that the race of the subject is of predictive value in either type conformity situation, and on the basis of the discriminant weights, the race of the subject is of singular importance in predicting the conforming or not-conforming subject in expert pressure situations.

Moreover, it is also felt that the disproportionate size of the sample of subjects described as belonging to the white race (n = 206) may be, in fact, the governing factor. The obtained discriminant weight may not, perhaps, be completely valid.

Predictive Discriminant Weights and

Race of Subject

E_1 (n = 85)	E_2 (n = 38)	G_1 (n = 45)	G_2 (n = 50)
1.4592789	1.4130924	.7921080	.7765087
Negro.....4	Negro.....2	Negro.....1	Negro.....5
White....81	White....36	White....44	White....45

Intelligence

Intelligence as a predictive variable has yielded somewhat less than consistent findings. Youniss (1958) had found that in a group situation there was no correlation between IQ and conforming. Other authors (Ratcliffe, 1956; DiVesta, 1960; Peterson, 1963; Smith, 1964) generally indicated that there was an inverse relationship between conformity and intelligence. Lucito (1964) also reported an inverse relationship between bright and dull children and their conformity situations.

In this research the variable of intelligence, defined as a California Test of Mental Maturity, Short Form, (1958 Ed.) IQ, was found to be a discriminating one and to be relevant to each type conformity situation.

Predictive Discriminant Weights and Intelligence

E_1 (n = 85)	E_2 (n = 38)	G_1 (n = 45)	G_2 (n = 50)
$\bar{X}$ IQ = 114.2	$\bar{X}$ IQ = 119.0	$\bar{X}$ IQ = 116.0	$\bar{X}$ IQ = 116.2
S.D. = 12.1	S.D. = 10.3	S.D. = 13.4	S.D. = 11.4

Examination of these data indicate that the not-conformers have, collectively, higher IQ's than do conformers.

Socioeconomic Status

Again the literature is typified by a marked paucity of research dealing with the variable of the socioeconomic status of the subject in conformity research.

Wilson (1966) found that subjects who were of "indefinite status," insofar as their popularity was concerned, were found to yield more than either the "popular" or "unpopular" subject. Further, Strickland (1962) found that conforming under simulated group pressure conditions was the result of the subjects' need for social approval. While these researches might indeed be relevant, it must nevertheless be noted that in no previous research cited was an attempt made specifically to assess the effect of SES.

Discriminant weights were found to be present for each type conforming situation.

Predictive Discriminant Weights and

SES of Subject

E_1 (n = 85)	E_2 (n = 38)	G_1 (n = 45)	G_2 (n = 50)
.0118051	.0143494	.0358316	.0388259
2.....13	2.....1	2.....4	2.....5
3.....8	3.....4	3.....6	3.....7
4.....10	4.....7	4.....3	4.....6
5.....22	5.....6	5.....10	5.....6
6.....10	6.....0	6.....3	6.....6
7.....11	7.....6	7.....6	7.....5
8.....4	8.....4	8.....7	8.....7
9.....2	9.....4	9.....3	9.....3
10.....3	10.....4	10.....2	10.....1
11.....1	11.....2	11.....1	11.....3
12.....1			12.....1

Geographic Area of Residence

The review of the literature does not indicate, apparently, any definitive statement as to the predictive efficiency of the subject's geographic area of residence as it pertains to conformity research.

However, it does appear this variable is of predictive efficiency. Noting the discriminant weights obtained, it is seen that the geographic area is of more predictive value in a group situation than it is in an expert situation.

Predictive Discriminant Weights and

Geographic Area of Subjects

Residence

E_1 (n = 85)	E_2 (n = 38)	G_1 (n = 45)	G_2 (n = 50)
.0037942	.0005346	.0698959	.0687720
4.....3	4.....3	4.....2	7.....2
5.....1	10.....4	7.....1	10.....4
7.....2	11.....2	10.....4	11.....7
10.....8	12.....24	11.....4	12.....30
11.....6	18.....1	12.....33	13.....1
12.....24	19.....2	20.....1	19.....4
16.....1	25.....1		21.....1
	26.....1		25.....1

It may be observed that, as an entity, the not-conforming groups are typified by more subjects who are from the "13" to "26" classification. Thus, the not-conformers show a higher ratio of urban, non-Midwestern residence. Conversely, the conformers as a group show a decided tendency to be rural, Midwestern residents.

Religion

The religion of the subject has seemingly not been researched as frequently as one might anticipate. McClelland (1967) does emphasize the religion of the subject.

However, on the basis of the data obtained, we note that the religion of the subject is found to be a discriminate variable only among those subjects in expert pressure situations.

It does not appear that the religion of the subject has any predictive efficiency in group pressure situations.

Predictive Discriminant Weights and

Religion of Subject

G_1 (n = 85)	E_2 (n = 38)	G_1 (n = 45)	G_2 (n = 50)
.3424812	.3263638	-0-	-0-
Protestant..54	Protestant..26	Protestant..38	Protestant..36
Catholic....28	Catholic.....7	Catholic.....7	Catholic....13
Jewish.....0	Jewish.....0	Jewish.....0	Jewish.....0
Agnostic.....3	Agnostic.....3	Agnostic.....0	Agnostic.....1

Examination of these data indicate that the Catholic subjects conform to expert opinion four times as frequently as they not-conform; Protestant subjects conform slightly over two times as frequently as they not-conform.

However, in a group pressure situation, the Catholic subjects yield only half as frequently as they do not yield; the Protestant subjects yield but slightly more

frequently than they do not yield. The variable of Agnosticism is seemingly of no predictive value.

Anxiety

Findings of research concerning the field of anxiety varied greatly. Walters (1960) and Meyers (1962) indicated a positive relationship between conformity and high anxiety levels. The conditions under which the behavior did or did not occur were not standardized; however, Meyers and Hohle (1962), using a simulated group pressure, reported a small but significant relation between conformity and anxiety on the Sarason-Mandler Test Anxiety Questionnaire. Walters, Marshall and Shooter (1962) tested adolescents, using the autokinetic apparatus, and found those who reported themselves as "anxious" on Schachter's scale were more susceptible to social influence. Mangan (1959, and 1960) and Holder (1958) reported that high anxiety was characterized not by more, but indeed by less conformity. With subjects in a Crutchfield apparatus, DiVesta and Cox (1968) found a significant correlation of .17 between anxiety scores and conformity. Mangan, Quartermain and Vaughan (1960), utilizing an Asch-type setting, found that under strong pressure conditions those subjects who had high scores on the Taylor Scale of Manifest Anxiety conformed less than subjects with low anxiety scores.

There apparently has not been a definitive investigation to resolve these conflicting findings.

However, in multivariate research data it must be noted that the variable of anxiety yields a positive discriminant weight in the expert pressure situation and that it yields a negative discriminant weight in the group pressure situations. This may well be the means to resolve conflicting results as noted in the literature previously, which is to say that the factor of anxiety has a positive predictive value in expert situations and that it has a negative predictive value in the group pressure situations.

Predictive Discriminant Weights

and Anxiety

E_1 (n = 85)	E_2 (n = 38)	G_1 (n = 45)	G_2 (n = 50)
.0964744	.0837088	-.0364962	-.0274398
$\bar{X}$.....6.5	$\bar{X}$.....5.9	$\bar{X}$.....6.6	$\bar{X}$.....6.0
S.D.....2.1	S.D.....2.2	S.D.....1.7	S.D.....1.9

(Standardization sten $\bar{X}$ = 5.5)

The data indicate that those subjects who are conformers, regardless of the type pressure experienced, are, collectively, more anxious than not-conformers. These subjects, it may be noted, are also more anxious than the average college student as noted in Cattell's standardization sample. (Cattell, 1957)

Dogmatism

Previous multivariate research by Harvey (1963) resulted in the opinion that "conformity is a complex adjustment to both situational and personality factors."

In a simulated group situation, he found that the "high dogmatic" on the Rokeach Dogmatism Scale (1954) conformed more than did the "low dogmatic." Lefcourt (1962), in assessing readiness for therapy in narcotic addicts, found that those subjects considered to have the greatest "potential for change" had the lowest scores on the Rokeach Dogmatism Scale (1954).

In this research, it was found that the variable of dogmatism yields no discriminant weight in the expert pressure situation and that it does yield a discriminant weight in the group pressure situation. To that end, it may be hypothesized that dogmatism played no factor in the matter of predicting expert pressure response and that it is a predictive factor in group pressure situations.

Predictive Discriminant Weights

and Dogmatism

E_1 (n = 85)	E_2 (n = 38)	G_1 (n = 45)	G_2 (n = 50)
-0-	-0-	.0684519	.0641278
$\bar{X}$ = 24.2	$\bar{X}$ = 23.2	$\bar{X}$ = 23.5	$\bar{X}$ = 23.2
S.D. 4.2	S.D. 6.0	S.D. 3.7	S.D. 4.2

(Standardization $\bar{X}$ = 23)

Of the four groups, only the E_1 Ss indicate a slight tendency to be more dogmatic than an average S. Suffice it to say that dogmatism is efficacious as a predictor variable, nevertheless, but only in group pressure situations.

Rigidity

The personality dynamic identified as rigidity, which would indicate that the subject's personality is characterized by not-yielding and by not-conforming behaviors, has not been previously noted in the research literature. Examination of the data indicates that the variable does not yield a discriminant weight for any pressure type situation and that, in fact, the variable of rigidity may not be a predictive one. Hence, the variable was not utilized in Phase II research.

It may well be, however, that the validity and predictive efficiency of the instrument as utilized was insufficiently high to be of value in multivariate research. On the basis of the data obtained, however, it appears that rigidity, as a personality factor, is not a predictor variable in conformity research.

Acquiescence

The Couch-Kenniston Acquiescence Scale purports to assess the presence of an "agreeing response set." A high score is considered to be indicative of a high "agreeing response set," and a low score is to be equated with a low "agreeing response set," and a standardization $\bar{X}$ of 33 is reported.

It is noted that, on the basis of the data, the variable of acquiescence is a predictor in each type conformity situation.

Predictive Discriminant Weights and Acquiescence

E_1 (n = 85)	E_2 (n = 38)	G_1 (n = 45)	G_2 (n = 50)
.0229030	.0215116	.0147106	.0172709
$\bar{X}$.....33.5	$\bar{X}$.....32.9	$\bar{X}$.....32.9	$\bar{X}$.....33.7
S.D.....5.5	S.D.....4.2	S.D.....5.1	S.D.....5.5

(Standardization $\bar{X}$ = 33.0)

Ego Strength

Smith (1961) found that one's ego strength was related to one's perceived competence and that those subjects with high ego strength yielded less under pressure. Weiner's (1958) results would seem to have corroborated this, for he found that those subjects with a high "certainty scale score" were more certain of their judgments and did not change their judgments as frequently as those subjects with a low "certainty scale score."

The data indicate that, in fact, the variable of ego strength yielded a discriminant weight only in the matter of group pressure situations and that it may well not be a predictor variable in expert pressure situations.

Predictive Discriminant Weights and Ego Strength

E_1 (n = 85)	E_2 (n = 38)	G_1 (n = 45)	G_2 (n = 50)
-0-	-0-	.0494433	.0436472
$\bar{X}$.....6.5	$\bar{X}$.....6.4	$\bar{X}$.....5.9	$\bar{X}$.....5.4
S.D.....2.4	S.D.....2.2	S.D.....2.3	S.D.....2.3

(Standardization sten $\bar{X}$ = 5.5)

Confidence

Confidence, as assessed by the Saunders Self-Sufficiency Scale was obtained by utilizing the IPAT 16 P.F. Test Form A (1957) with special permission of the author.

It was found that this variable yields a negative discriminant weight in the expert pressure situation and a positive discriminant weight in the group pressure situation. It may well be that high scores and "high confidence" is a predictor variable in group pressure situations and that low scores and "low confidence" are predictors in expert pressure situations.

Predictive Discriminant Weights

and Confidence

E_1 (n = 85)	E_2 (n = 38)	G_1 (n = 45)	G_2 (n = 50)
-.0023913	-.0014989	.0349193	.0336275
$\bar{X}$.....33.5	$\bar{X}$.....11.8	$\bar{X}$.....12.9	$\bar{X}$.....12.3
S.D.....6.0	S.D.....6.6	S.D.....5.2	S.D.....7.0

(Standardization $\bar{X}$ = 33.5)

Inspection of the data indicate that the group showing the lowest "confidence," E_2, $\bar{X}$ = 32.8, was a not-conforming group. These data appear to contradict the constructs upon which the test is predicated.

Extroversion/Introversion

The literature has previously not indicated the predictive value of the extroversion/introversion continuum. Analysis of the data indicates that, in fact, the variable does yield discriminant weights across all types of conformity situations.

Predictive Discriminant Weights and Extroversion/Introversion

E_1 (n = 85)	E_2 (n = 38)	G_1 (n = 45)	G_2 (n = 50)
.0159433	.0144541	.0379806	.0386756
$\bar{X}$.....13.1	$\bar{X}$.....11.8	$\bar{X}$.....12.9	$\bar{X}$.....12.3
S.D.....3.9	S.D.....3.8	S.D.....3.6	S.D.....4.2

(Standardization $\bar{X}$ = 13.1, S.D. = 4.1)

On the basis of these data, it appears that the group of subjects who did not conform to expert pressure are slightly more introverted than the group who conformed to expert pressure.

Both not-conforming groups were more introverted than the average subject.

Impulsivity

Impulsivity was assessed by the Barratt Impulsivity Scale and was used by special permission of the author. A high score on this test, with a range of 0 to 85, is said to indicate a high "impulsivity" and a low score is said to indicate a low "impulsivity." To that end, it is noted that the Barratt Impulsivity Scale yielded discriminant weights in the expert pressure situation only, with no discriminant weight being found predictive in the group pressure situation.

Predictive Discriminant Weights and Impulsivity

E_1 (n = 85)	E_2 (n = 38)	G_1 (n = 45)	G_2 (n = 50)
.0122429	.0134652	-0-	-0-
$\bar{X}$.....28.3	$\bar{X}$.....27.9	$\bar{X}$.....28.4	$\bar{X}$.....28.5
S.D.....5.1	S.D.....5.0	S.D.....5.3	S.D.....5.2

It would appear that, as groups, all Ss demonstrated "low impulsivity."

Neuroticism

Neuroticism as a predictor variable has not been examined in isolation. Studies by Breger (1963), Hoffman (1953), and Mussen and Kagan (1958) have identified the central role of repressive ego defenses in conforming individuals. According to Breger (1963), "conformity is conceptualized as part of an ego defensive process centered around the repression of hostility," and he points to the usefulness of conceptualizing acquiescence in group pressure in terms which incorporate the portion of psychoanalytic theory concerned with the defensive process. The variable of neuroticism, as assessed by the Eysenck Personality Inventory, Form A, (1968) reveals a negative discriminant weight in the matter of expert pressure situations and no discriminant weight in group pressure situations.

Predictive Discriminant Weights and Neuroticism

E_1 (n = 85)	E_2 (n = 38)	G_1 (n = 45)	G_2 (n = 50)
-.0064478	-.0028945	-0-	-0-
$\bar{X}$.....12.1	$\bar{X}$.....9.9	$\bar{X}$.....11.4	$\bar{X}$.....10.9
S.D.....4.9	S.D.....4.5	S.D.....4.5	S.D.....5.4

(Standardization $\bar{X}$ = 10.9, S.D. = 4.7)

On the basis of these data, those Ss who yield to expert pressure are more neurotic than the average person, while the not-conformer to expert pressure is less neurotic than the average person. All Ss who were conformers obtained higher than average neuroticism scores.

CHAPTER V

SUMMARY

A review of the literature relevant to researches concerning the phenomena of conformity behaviors yields the need for large sample, multivariate methodology, which will assess the pertinent variables contributing to "conforming to group pressure" and "conforming to expert pressure."

To that end, seventeen variables were utilized (birth order, chronological age, sex, race, IQ, socioeconomic status, geographic area of residence, religion, anxiety, dogmatism, rigidity, acquiescence, ego strength, confidence, extroversion/introversion, impulsivity, and neuroticism) to describe the behaviors of 104 subjects in a Tuddenham-type setting wherein the subjects were randomly assigned to either "Asch-type" (group pressure) or "Crutchfield-type" (expert pressure) treatment conditions.

Utilizing a stepwise multiple discriminant function analysis, discriminant weights were derived. The variable of rigidity was not found to be a valid predictor.

With the discriminant weights and the sixteen predictive second-order variables, 218 subjects were randomly assigned to treatment conditions and their "conforming" or "not-conforming" behaviors were predicted. The data of eleven subjects who correctly perceived the contrived nature of the experiment were not included.

Of the 123 subjects subjected to "expert pressure," 85 were not-conformers. Chi-Square analysis of the "expert pressure" data yields a significant difference at the .20 Level of Confidence. Of the 95 subjects subjected to "group pressure," 45 were conformers and 50 were not-conformers. Chi-Square was not significant.

Conformers to "expert pressure" were correctly identified 74 per cent of the time; conformers to "group pressure" were correctly identified 62 per cent of the time. Thus, it appears that conforming behaviors are predictable providing a multivariate method is used conjointly with a discriminant function analysis of the data.

The most difficult behavior to correctly predict is not-conforming to "expert pressure," with but 32 per cent correct. Too, but 40 per cent of the not-conforming to "group pressure" was correctly predicted.

Conformers to "expert pressure" were seen as typically being first-born, 20.8 year old Caucasian males or females with an IQ of 114. Their parents were high school graduates or above, and were either professional persons, business proprietors, or managers, et cetera. Their geographic area of residence was Rural East North Central United States, but this finding may be due to sampling error. Protestants were more frequently observed (n = 54) than Roman Catholics (n = 28). The conformers were slightly above average in anxiety and dogmatism. Average acquiescence,

ego strength, and confidence were noted. Low impulsivity was seen, and they were slightly extroverted. As a group, they were more neurotic than an average subject.

Not-conformers to "expert pressure" were seen as first-born 21.5 year old Caucasian males with an IQ of 119. No clear socioeconomic status was noted due to extreme scatter. The geographic area of residence was Rural East North Central United States. They were predominantly Protestant subjects.

They were less anxious than conformers, less dogmatic, and less acquiescent. They did not differ significantly in ego strength, confidence or impulsivity. However, they were more introverted and decidedly less neurotic than their conformer counterpart.

Conformers to "group pressure" were equally likely to be either a first or second-born 21 year old male or female Caucasian Protestant with an IQ of 116.

They were more anxious than an average subject. Dogmatism, acquiescence, ego strength, neuroticism, and extroversion/introversion were average. As a group, they were slightly more confident.

Subjects who were not-conformers to "group pressure" were seen as second-born 21.5 year old females with an IQ of 116. Two-thirds of these subjects were Protestant; one-third were Roman Catholic. No obvious socioeconomic status could be ascertained. They were less anxious than

conformers to "group pressure." No significant differences were noted in dogmatism, acquiescence, ego strength, confidence, impulsivity or extroversion/introversion. They were less neurotic than their conformer counterpart.

With an over-all correct prediction rate of but 56 per cent, however, it would appear that caution must indeed be utilized in assigning critical discriminatory properties to the various personality constellations. Further large sample multivariate research is indicated.

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APPENDIX

EYSENCK PERSONALITY INVENTORY

FORM A

By H. J. Eysenck
and Sybil B. G. Eysenck

Name _____ Age _____ Sex _____

Grade or Occupation _____ Date _____

School or Firm _____ Marital Status _____

INSTRUCTIONS

Here are some questions regarding the way you behave, feel and act. After each question is a space for answering "Yes," or "No."

Try and decide whether "Yes," or "No" represents your usual way of acting or feeling. Then blacken in the space under the column headed "Yes" or "No."

Section of Answer Column Correctly Marked

Yes	No
▮	⁞
Yes	No
⁞	▮

Work quickly, and don't spend too much time over any question, we want your first reaction, not a long drawn out thought process. The whole questionnaire shouldn't take more than a few minutes. Be sure not to omit any questions. Now turn the page over and go ahead. Work quickly, and remember to answer every question. There are no right or wrong answers, and this isn't a test of intelligence or ability, but simply a measure of the way you behave.

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X N L

1. Do you often long for excitement? ..... Yes No
2. Do you often need understanding friends to cheer you up? ..... Yes No
3. Are you usually carefree? ..... Yes No
4. Do you find it very hard to take no for an answer? ... Yes No
5. Do you stop and think things over before doing anything? ..... Yes No
6. If you say you will do something do you always keep your promise, no matter how inconvenient it might be to do so? ..... Yes No
7. Does your mood often go up and down? ..... Yes No
8. Do you generally do and say things quickly without stopping to think? ..... Yes No
9. Do you ever feel "just miserable" for no good reason? Yes No
10. Would you do almost anything for a dare? ..... Yes No
11. Do you suddenly feel shy when you want to talk to an attractive stranger? ..... Yes No
12. Once in a while do you lose your temper and get angry? ..... Yes No
13. Do you often do things on the spur of the moment? ... Yes No
14. Do you often worry about things you should not have done or said? ..... Yes No
15. Generally do you prefer reading to meeting people? .. Yes No
16. Are your feelings rather easily hurt? ..... Yes No
17. Do you like going out a lot? ..... Yes No
18. Do you occasionally have thoughts and ideas that you would not like other people to know about? ..... Yes No
19. Are you sometimes bubbling over with energy and sometimes very sluggish? ..... Yes No
20. Do you prefer to have few but special friends? ..... Yes No
21. Do you daydream a lot? ..... Yes No
22. When people shout at you, do you shout back? ..... Yes No
23. Are you often troubled about feelings of guilt? ..... Yes No
24. Are all your habits good and desirable ones? ..... Yes No
25. Can you usually let yourself go and enjoy yourself a lot at a gay party? ..... Yes No
26. Would you call yourself tense or "highly-strung"? ... Yes No
27. Do other people think of you as being very lively? ... Yes No
28. After you have done something important do you often come away feeling you could have done better? ..... Yes No
29. Are you mostly quiet when you are with other people? Yes No
30. Do you sometimes gossip? ..... Yes No
31. Do ideas run through your head so that you cannot sleep? ..... Yes No
32. If there is something you want to know about, would you rather look it up in a book than talk to someone about it? ..... Yes No
33. Do you get palpitations or thumping in your heart? ... Yes No
34. Do you like the kind of work that you need to pay close attention to? ..... Yes No
35. Do you get attacks of shaking or trembling? ..... Yes No
36. Would you always declare everything at the customs, even if you knew that you could never be found out? .. Yes No
37. Do you hate being with a crowd who play jokes on one another? ..... Yes No
38. Are you an irritable person? ..... Yes No
39. Do you like doing things in which you have to act quickly? ..... Yes No
40. Do you worry about awful things that might happen? .. Yes No
41. Are you slow and unhurried in the way you move? ... Yes No
42. Have you ever been late for an appointment or work? . Yes No
43. Do you have many nightmares? ..... Yes No
44. Do you like talking to people so much that you would never miss a chance of talking to a stranger? ..... Yes No
45. Are you troubled by aches and pains? ..... Yes No
46. Would you be very unhappy if you could not see lots of people most of the time? ..... Yes No
47. Would you call yourself a nervous person? ..... Yes No
48. Of all the people you know are there some whom you definitely do not like? ..... Yes No
49. Would you say you were fairly self-confident? ..... Yes No
50. Are you easily hurt when people find fault with you or your work? ..... Yes No
51. Do you find it hard to really enjoy yourself at a lively party? ..... Yes No
52. Are you troubled with feelings of inferiority? ..... Yes No
53. Can you easily get some life into a rather dull party? Yes No
54. Do you sometimes talk about things you know nothing about? ..... Yes No
55. Do you worry about your health? ..... Yes No
56. Do you like playing pranks on others? ..... Yes No
57. Do you suffer from sleeplessness? ..... Yes No

PLEASE CHECK TO SEE THAT YOU HAVE ANSWERED ALL THE QUESTIONS.

GOUGH Fx SCALE

Circle T if you agree with the statement or circle F if you disagree. Answer each one.

ANSWERS

T	F	1.	I often wish people would be more definite about things.
T	F	2.	It is annoying to listen to a lecturer who cannot seem to make up his mind as to what he really believes.
T	F	3.	I find that a well-ordered mode of life with regular hours is congenial to my temperament.
T	F	4.	It is hard for me to sympathize with someone who is always doubting and unsure about things.
T	F	5.	Our thinking would be a lot better off if we would just forget about words like "probably", "approximately", and "perhaps."
T	F	6.	I never make judgments about people until I am sure of the facts.
T	F	7.	A strong person will be able to make up his mind even on the most difficult questions.
T	F	8.	For most questions there is just one right answer, once a person is able to get all the facts.
T	F	9.	I like to have a place for everything and everything in its place.
T	F	10.	I don't like to work on a problem unless there is the possibility of coming out with a clear-cut and unambiguous answer.
T	F	11.	It bothers me when something unexpected interrupts my daily routine.
T	F	12.	Most of the arguments or quarrels I get into are over matters of principle.
T	F	13.	I am known as a hard and steady worker.
T	F	14.	I don't like things to be uncertain and unpredictable.
T	F	15.	Once I have my mind made up I seldom change it.
T	F	16.	I think I am stricter about right and wrong than most people.
T	F	17.	I am in favor of a very strict enforcement of all laws, no matter what the consequences.
T	F	18.	I always see to it that my work is carefully planned and organized.
T	F	19.	The trouble with many people is that they don't take things seriously enough.
T	F	20.	I set high standards for myself and I feel others should do the same.
T	F	21.	People who seem unsure and uncertain about things make me feel uncomfortable.

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SRS/ch

16 P F

WHAT TO DO: Inside this booklet are some questions to see what attitudes and interests you have. There are no "right" and "wrong" answers because everyone has the right to his own views. To be able to get the best advice from your results, you will want to answer them exactly and truly.

Write your name and other particulars at the top of your test sheet.

First, you should answer the four sample questions below so that you can see whether you need to ask anything before starting. Although you are to read the questions in this test, record also your answers at the side of your test sheet in the column designated "Answers". Circle the appropriate answer.

EXAMPLES:

		ANSWERS
1. I like to watch team games.	(a) yes, (b) occasionally, (c) no.	a b c
2. I prefer people who: (a) are reserved, (b) (are) in between, (c) make friends easily.		a b c
3. Money cannot bring happiness.	(a) yes (true), (b) in between, (c) false.	a b c
4. Woman is to child as cat is to:	(a) kitten, (b) dog, (c) boy.	a b c

In number four there is a right answer—kitten. But there are very few such reasoning items among the questions.

Ask now if anything is not clear. The examiner will tell you in a moment to turn the page and start.

When you answer, keep these four points in mind:

1. You are asked not to spend time pondering. Give the first, natural answer as it comes to you. Of course, the questions are too short to give you all the particulars you would sometimes like to have. For instance, the above question asks you about "team games" and you might be fonder of football than basketball. But you are to reply "for the average game," or to strike an average in situations of this kind stated. Give the best answer you can at a rate not slower than five or six a minute. You should finish in a short time.

TURN TO NEXT PAGE

2. Try NOT to fall back on the middle, "uncertain" answers except when the answer at either end is really IMPOSSIBLE for you——perhaps once every two or three questions.

3. Be sure not to skip anything, BUT ANSWER EVERY QUESTION, SOMEHOW. Some may not apply to you very well, but give your best guess. Some may seem personal; but remember that the answers are kept confidential and cannot be scored without a special stencil key. Answers to particular questions are not inspected.

4. Answer as honestly as possible what is true of YOU. Do not merely make what seems "the right thing to say," to impress the examiner.

DO NOT TURN THE PAGE UNTIL TOLD TO DO SO

ANSWERS

1. In constructing something I would rather work: (a) with a committee, (b) uncertain, (c) on my own. — a / b / c

2. I find myself counting things, for no particular purpose: (a) often, (b) occasionally, (c) never — a / b / c

3. When talking I like: (a) to say things, just as they occur to me, (b) in between, (c) to get my thoughts well organized first. — a / b / c

4. I never feel the urge to doodle and fidget when kept sitting still at a meeting: (a) true, (b) uncertain, (c) false. — a / b / c

5. As a teenager, I joined in school sports: (a) occasionally, (b) fairly often, (c) a great deal. — a / b / c

6. I would rather stop in the street to watch an artist painting than listen to some people having a quarrel. (a) true, (b) uncertain, (c) false. — a / b / c

7. I sometimes get in a state of tension and turmoil as I think of the day's happenings. (a) Yes, (b) in between, (c) no — a / b / c

8. I sometimes doubt whether people I am talking to are really interested in what I am saying. (a) Yes (b) in between (c) No — a / b / c

9. I prefer to marry someone who can: (a) keep the family interested in its own activities, (b) in between, (c) make the family a part of the social life of the neighborhood. — a / b / c

10. I would rather enjoy life quietly in my own way than be admired for my achievements. (a) true, (b) uncertain (c) false. — a / b / c

11. I can work carefully on most things without being bothered by people making a lot of noise around me. (a) yes, (b) in between, (c) no. — a / b / c

12. I feel that on one or two occasions recently I have been blamed more than I really deserve. (a) yes, (b) in between, (c) No. — a / b / c

ANSWERS

13. I am always able to keep the expressions of my feelings under exact control. (a) yes, (b) in between, (c) no. — a / b / c

14. At fifteen or sixteen I went about with the opposite sex. (a) a lot, (b) as much as most people, (c) less than most people — a / b / c

15. I like to take an active part in social affairs, committee work, etc. (a) yes, (b) in between, (c) no. — a / b / c

16. The idea that sickness comes as much from mental as physical causes is much exaggerated. (a) yes, (b) in between, (c) no. — a / b / c

17. Quite small setbacks occasionally irritate me too much. (a) yes, (b) in between, (c) no. — a / b / c

18. I very rarely blurt out annoying remarks that hurt people's feelings. (a) true, (b) uncertain, (c) false. — a / b / c

19. It bothers me if people think I am being too unconventional or odd. (a. a lot, (b) somewhat, (c) not at all — a / b / c

20. Most people would be happier if they lived more with their fellows and did the same things as others. (a) yes, (b) in between, (c) no — a / b / c

21. I like to go my own way instead of acting on approved rules. (a) true, (b) uncertain, (c) false. — a / b / c

22. Often I get angry with people too quickly. (a) yes, (b) in between, (c) No. — a / b / c

23. When something upsets me, I generally calm again quite quickly. (a) yes, (b) in between, (c) no. — a / b / c

24. I like to do my planning alone, without interruptions and suggestions from others. (a) yes, (b) in between, (c) no. — a / b / c

25. I sometimes let my actions get swayed by feelings of jealousy. (a) yes, (b) in between, (c) no. — a / b / c

ANSWERS

26. I believe firmly "the boss may not always be right, but he always has the right to boss." (a) yes, (b) uncertain, (c) no. — a b c

27. I tend to tremble or perspire when I think of a difficult task ahead. (a) generally, (b) occasionally, (c) never. — a b c

28. If people shout suggestions when I'm playing a game, it does not upset me. (a) true, (b) uncertain, (c) false. — a b c

29. I learn better by. (a) reading a well-written book, (b) in between, (c) joining a group discussion. — c b a

30. I have periods when it's hard to stop a mood of self-pity. (a) often, (b) occasionally, (c) never. — a b c

31. I like to wait till I am sure that what I am saying is correct, before I put forth an argument. (a) always, (b) generally, (c) only if it's practicable. — a b c

32. Small things sometimes "get on my nerves" unbearably though I realize them to be trivial. (a) yes, (b) in between, (c) no. — a b c

33. I don't often say things on the spur of the moment that I greatly regret. (a) true, (b) uncertain, (c) false. — a b c

SYSTEMS SCALE

DIRECTIONS:

The following is a study of what the general public thinks and feels about a number of important social and personal questions. We have tried to cover many different and opposing points of view; you may find yourself agreeing strongly with some of the statements, disagreeing just as strongly with others, and perhaps uncertain about others; whether you agree or disagree with any statement, you can be sure that many people feel the same as you do.

Mark each statement in the left margin according to how much you agree or disagree with it. Please mark every one.

Write +1, +2, +3, or -1, -2, -3, depending on how you feel in each case.

+1 I agree a little
+2 I agree on the whole
+3 I agree very much

-1 I disagree a little
-2 I disagree on the whole
-3 I disagree very much

MICHIGAN STATE UNIVERSITY EAST LANSING • MICHIGAN 48823

DEPARTMENT OF PSYCHOLOGY • OLDS HALL

November 4, 1968

Dr. Charles L. Alcorn
Department of Psychology
McKendree College
Lebanon, Illinois 62254

Dear Dr. Alcorn:

You certainly have my permission to use the Dogmatism Scale for research purposes. All you have to do is mimeograph it yourself with the instructions from The Open and Closed Mind (New York: Basic Books, 404 Park Avenue South, New York, New York 10016). May I suggest, however, that you mix up the items well and, if possible, pad them with a few items from any other scale that you care to choose. It doesn't matter how you mix them up and it doesn't matter what items you use to pad them with.

I certainly hope that you will furnish me with a copy of the results of your research.

Sincerely yours,

Milton Rokeach

Milton Rokeach
Professor

MR/mlh

SYSTEMS SCALE

ANSWERS

1. The United States and Russia have just about nothing in common.
2. Communism and Catholicism have nothing in common.
3. The principles I have come to believe in are quite different from those believed in by most people.
4. In a heated discussion people have a way of bringing up irrelevant issues rather than sticking to the main issue.
5. The highest form of government is a democracy and the highest form of a democracy is a government run by those who are most intelligent.
6. Even though freedom of speech for all groups is a worthwhile goal, it is unfortunately necessary to restrict the freedom of certain political groups.
7. While the use of force is wrong by and large, it is sometimes the only way possible to advance a noble ideal.
8. Even though I have a lot of faith in the intelligence and wisdom of the common man I must say that the masses behave stupidly at times.
9. It is only natural that a person would have a much better acquaintance with ideas he believes in than with ideas he opposes.
10. There are certain "isms" which are really the same even though those who believe in these "isms" try to tell you they are different.
11. Man on his own is a helpless and miserable creature.
12. Fundamentally, the world we live in is a pretty lonesome place.
13. Most people just don't give a "damn" for others.
14. I'd like it if I could find someone who would tell me how to solve my personal problems.
15. It is only natural for a person to be rather fearful of the future.
16. There is so much to be done and so little time to do it in.
17. Once I get wound up in a heated discussion I just can't stop.
18. In a discussion I often find it necessary to repeat myself several times to make sure I am being understood.

ANSWERS

19. In a heated discussion I generally become so absorbed in what I am going to say that I forget to listen to what others are saying.
20. In a discussion I sometimes interrupt others too much in my eagerness to put across my own point of view.
21. It is better to be a dead hero than a live coward.
22. My hardest battles are with myself.
23. At times I think I am no good at all.
24. I am afraid of people who want to find out what I'm really like for fear they'll be disappointed in me.
25. While I don't like to admit this even to myself, my secret ambition is to become a great man, like Einstein, or Beethoven, or Shakespeare.
26. The main thing in life is for a person to want to do something important.
27. If given the chance I would do something of great benefit for the world.
28. If I had to choose between happiness and greatness, I'd choose greatness.
29. It's all too true that people just won't practice what they preach.
30. Most people are failures and it is the system which is responsible for this.
31. I have often felt that strangers were looking at me critically.
32. It is only natural for a person to have a guilty conscience.
33. People say insulting and vulgar things about me.
34. I am sure I am being talked about.
35. In the history of mankind there have probably been just a handful of really great thinkers.
36. There are a number of people I have come to hate because of the things they stand for.
37. A man who does not believe in some great cause has not really lived.
38. It is only when a person devotes himself to an ideal or cause that life becomes meaningful.

39. Of all the different philosophies which exist in this world there is probably only one which is correct.

40. A person who gets enthusiastic about too many causes is likely to be a pretty "wishy-washy" sort of person.

41. To compromise with our political opponents is dangerous because it usually leads to the betrayal of our own side.

42. When it comes to differences of opinion in religion we must be careful not to compromise with those who believe differently from the way we do.

43. In times like these, a person must be pretty selfish if he considers primarily his own happiness.

44. To compromise with our political opponents is to be guilty of appeasement.

45. The worst crime a person could commit is to attack publicly the people who believe in the same thing he does.

46. In times like these it is often necessary to be more on guard against ideas put out by people or groups in one's own camp than by those in the opposing camp.

47. A group which tolerates too much differences of opinion among its own members cannot exist for long.

48. There are two kinds of people in this world: those who are for the truth and those who are against the truth.

49. My blood boils whenever a person stubbornly refuses to admit he's wrong.

50. A person who thinks primarily of his own happiness is beneath contempt.

51. Most of the ideas which get printed nowadays aren't worth the paper they are printed on.

52. I sometimes have a tendency to be too critical of the ideas of others.

53. In this complicated world of ours the only way we can know what's going on is to rely on leaders or experts who can be trusted.

54. It is often desirable to reserve judgment about what's going on until one has had a chance to hear the opinions of those one respects.

55. In the long run the best way to live is to pick friends and associates whose tastes and beliefs are the same as one's own.

ANSWERS

56. There's no use wasting your money on newspapers which you know in advance are just plain propaganda.

57. Young people should not have easy access to books which are likely to confuse them.

58. The present is all too often full of unhappiness. It is only the future that counts.

59. It is by returning to our glorious and forgotten past that real social progress can be achieved.

60. To achieve the happiness of mankind in the future it is sometimes necessary to put up with injustices in the present.

RESPONSE SET

Read the statement and decide whether or not it is true as it applies to you. In the left hand column mark True or False for each statement.

True	False		
x		1.	There are days when one awakes from sleep without a care in the world, full of zest and eagerness for whatever lies ahead of him.
	x	2.	Beneath the polite and smiling surface of man's nature is a bottomless pit of evil.
x		3.	The real substance of life consists of a procession of disillusionments, with but few goals that are worth the effort spent in reaching them.
	x	4.	You will certainly be left behind if you stop too often or too long to give a helping hand to other people.
x		5.	Most satisfying is the knowledge that one is an indispensable and appreciated member of a purposeful and effective group (team or institution).
	x	6.	Very few people can be trusted.
	x	7.	If a man is to fulfill his destiny he can expend no more than a small fraction of his supply of energy in the service of others.
	x	8.	The prospect is pretty hopeless: it looks as if the Nations were heading for their doom—one final, fateful, suicidal, global war.
x		9.	The world is teeming with opportunities and promises of success for anyone with sufficient imagination to perceive them.
	x	10.	There is little chance of ever finding real happiness.
x		11.	The vast majority of men are truthful and dependable.
	x	12.	There are always plenty of people who are eager to extend a helping hand.
x		13.	Nice as it may be to have faith in the majority of your fellowmen, it does not pay off.
	x	14.	If you have faith in your friends, they will seldom disappoint you.
	x	15.	In this era of spies and counter-spies, accusations and counter-accusations, a man should keep his feelings and opinions strictly to himself.
	x	16.	The future looks black as pitch, with little in view to justify a core of hope or faith.
	x	17.	The way to get the most out of life is to seize every opportunity to enjoy it.
	x	18.	Most people you meet are friendly and obliging, more disposed to aid you than to refuse aid.
	x	19.	For anyone with an average amount of energy, self-confidence and talent the chances of success in life are excellent.
x		20.	You can be certain that beyond every obstacle you encounter your chosen path is blocked by a succession of further obstacles—some of which are insurmountable.

True	False		
x		21.	Every person should have complete faith in some supernatural power whose decisions he obeys without question.
x		22.	Christianity and all other religions are, at best, only partly true.
x		23.	A man should be his own harshest judge.
x		24.	All development of personality begins with a frank admission of one's deficiencies and limitations.
x		25.	Shower your friends with gifts; that is the way to a full life.
x		26.	The first law is: know and accept thyself without distortions or equivocations.
x		27.	There is no desire that cannot at least be considered.
x		28.	A benefic at being watches over us and protects us from harm.
x		29.	Don't encourage fears and anxieties by dwelling on them.
x		30.	The only reason for being "moral" is that you usually get caught if you aren't.
x		31.	Questions of "right" and "wrong" seldom concern me.
x		32.	Modern literature is overly introspective, personal, and subjective.
x		33.	Time is money—only the man who can save will ever sit in the seats of the mighty.
x		34.	I like advice before making decisions.
x		35.	I seldom need the advice of others about anything.
x		36.	It has always been hard for me to get used to new places.
x		37.	I often get into extremely difficult positions with people in authority.
x		38.	I get along well with people.
x		39.	I couldn't care less what others think of me.
x		40.	I need neither help nor praise nor sympathy.
x		41.	Most known relationships reduce, in the last analysis, to a question of who is going to be boss and who is going to obey.
x		42.	My study habits are rather erratic.
x		43.	I ask for nothing and expect less.
x		44.	I've had a number of different ideas about what I will eventually become.
x		45.	I seldom look at my watch.
x		46.	I can always reread part in passages in books or poems with enjoyment.
x		47.	I cannot escape the conviction that fate somehow has it in for me.
x		48.	I respond to a work of art with my feelings, not with my intellect.
x		49.	I like nothing better than having breakfast in bed.
x		50.	I persist in the face of difficulties.
x		51.	I eagerly take in all that goes on around me.
x		52.	No one is of great continual importance to me.
x		53.	I like to think things out ahead of time.
x		54.	All life is to be seized upon and made part of oneself.
x		55.	I am very sensitive to criticism.
x		56.	I am afraid if I lend money I won't get it back.
x		57.	I prefer work that can be done—finished and put away—to work that stretches out over a long time.
x		58.	Most people are pretty cold.
x		59.	I sometimes feel that I'm the plaything of forces beyond my control.
x		60.	Man's state is one of isolation--there is no possibility of genuine communication with others.
x		61.	Most unhappy people could improve their lot if they only tried.
x		62.	Most people are not nearly as efficient as they could be if they were trained to use all of their time.
x		63.	It is misery to be born, pain to live, grief to die.
x		64.	I feel that most people like me.
x		65.	Happiness is one of the primary goals of life.
x		66.	I can be pretty sarcastic at times.
x		67.	I am continually trying to integrate my impulses, impulses, and experiences with the demands of external reality.
x		68.	Hope only brings disappointment.
x		69.	I get annoyed at people who take a long time to get to the point.
x		70.	I usually think of what I should have said long after the time to say it has passed.

PERSONAL PREFERENCES NO. 2

This inventory measures personal preferences or opinions. There are no right and wrong answers. You merely indicate whether each statement is true or false as it applies to you. If a statement is true, mark the space in the "T" column; if a statement is false, mark the space in the "F" column. Remember, the answers should indicate your preferences or opinions. Since the statements reflect clear-cut preferences, you will be able to response to each statement quickly. Do not linger over any statement.

If you have questions, ask them before you start indicating your preferences.

Mark only on the answer sheet.

1. I'm scared of spiders.
2. I hate people.
3. I like to take a chance just for the excitement.
4. In the morning I usually bound out of bed energetically.
5. People like me.
6. I go to church often.
7. I read at least three novels a year.
8. I spend little of my leisure time out of doors.
9. I usually think before I act.
10. I like mathematics.
11. I answer questions quickly.
12. I enjoy children.
13. I like to work crossword puzzles.
14. I like classical music.
15. I often change my plans.
16. I like to walk on grass in my barefoot.
17. I like detailed work.
18. My health is poor.
19. I am very religious.
20. I make up my mind quickly.
21. As a youngster I rarely took part in risky stunts.
22. I seldom forget things.
23. It's always time.
24. I like to solve complex problems.
25. I love my father.
26. I let myself "go" at a party.
27. I consider myself always careful.
28. I change my plans often.
29. I like crowds of people.
30. People expect too much of me.
31. I often make people laugh.
32. I like prompt people.
33. I usually notice the furniture arrangements in a strange house.
34. I seldom have a ready answer.
35. I like rainy weather.
36. Trying on clothes annoys me.
37. Bugs both me.
38. I don't like to wait for traffic lights to change.

39. I frequently feel on "top of the world."
40. I have many nose bleeds.
41. I dream in technicolor.
42. I like red-heads.
43. I like work requiring patience and carefulness.
44. Tuesday is my best day.
45. Bright lights bother me.
46. I like work involving competition.
47. I have difficulty remembering names of people.
48. I easily become impatient with people.
49. I like horror movies.
50. Green is my favorite color.
51. In watching games, I often yell along with the others.
52. I don't like having my plans changed.
53. I like to work with slow people
54. I don't like to eat outdoors.
55. I don't enjoy meeting relatives at family reunions.
56. I'm always on time for social events.
57. I make up my mind easily
58. I'd like to own a sports car.
59. I don't like to dress up for formal occasions.
60. I like work in which I must change often from one task to another.
61. I keep a daily regularly.
62. I scan newspapers rather than read them carefully.
63. I like work that has lots of excitement.
64. I'm a chain smoker.
65. I find it hard to keep friends.
66. I attend basketball games regularly.
67. I like new situations.
68. It is easy for me to concentrate on my work.
69. When I see a train or plane I wish I were on it.
70. I like to play chess.
71. Laws are absolute.
72. My interests tend to change quickly.
73. I like to solve problems than read a story.
74. The color red reminds me of blood.
75. I like to do things on the spur of the moment.
76. People are after me.
77. I don't like changes.
78. My friends consider me to be happy-go-lucky.
79. I prefer a play to going to an amusement park.
80. I don't like to ride in elevators.
81. I like a great deal of variety in my work.
82. I prefer modern furniture to traditional.
83. My skin itches when I have to speak in public.
84. I like being where there is something going on all the time.
85. I like to watch fires.

ANSWER SHEET

	T	F		T	F		T	F
1.	=	=	36.	=	=	71.	=	=
2.	=	=	37.	=	=	72.	=	=
3.	=	=	38.	=	=	73.	=	=
4.	=	=	39.	=	=	74.	=	=
5.	=	=	40.	=	=	75.	=	=
6.	=	=	41.	=	=	76.	=	=
7.	=	=	42.	=	=	77.	=	=
8.	=	=	43.	=	=	78.	=	=
9.	=	=	44.	=	=	79.	=	=
10.	=	=	45.	=	=	80.	=	=
11.	=	=	46.	=	=	81.	=	=
12.	=	=	47.	=	=	82.	=	=
13.	=	=	48.	=	=	83.	=	=
14.	=	=	49.	=	=	84.	=	=
15.	=	=	50.	=	=	85.	=	=
16.	=	=	51.	=	=			
17.	=	=	52.	=	=			
18.	=	=	53.	=	=			
19.	=	=	54.	=	=			
20.	=	=	55.	=	=			
21.	=	=	56.	=	=			
22.	=	=	57.	=	=			
23.	=	=	58.	=	=			
24.	=	=	59.	=	=			
25.	=	=	60.	=	=			
26.	=	=	61.	=	=			
27.	=	=	62.	=	=			
28.	=	=	63.	=	=			
29.	=	=	64.	=	=			
30.	=	=	65.	=	=			
31.	=	=	66.	=	=			
32.	=	=	67.	=	=			
33.	=	=	68.	=	=			
34.	=	=	69.	=	=			
35.	=	=	70.	=	=			

NAME_____ AGE_____

DATE_____ SEX_____

THE UNIVERSITY OF TEXAS MEDICAL BRANCH
GALVESTON, TEXAS 77550

December 2, 1968

Mr. Charles L. Alcorn
Dept. of Psychology
McKendree College
Lebanon, Illinois 62254

Dear Mr. Alcorn:

I am enclosing a copy of the BIS and a key (26 or 50 items). The two scales are highly correlated. I have found that the 50 item scale tends to be a little more stable over long time periods. I would be pleased to receive the results of the use of the scale and any other material you may have related to impulsiveness.

Sincerely yours,

Ernest S. Barratt, Ph.D.
Research Professor, and
Director, Behavioral Science Lab.
Dept. of Neurology and Psychiatry

ESB:slr

SELF FORM

Name_____Age_____Sex_____

This form contains forty questions, dealing with difficulties that most people experience at one time or another. It will help a lot in self-understanding if you check Yes, No, etc., to each, frankly and truthfully, to describe any problems you may have.

1. I find that my interests, in people and amusements, tend to change fairly rapidly. True In between False
2. If people think poorly of me I can still go on quite serenely in my own mind. True In between False
3. I like to wait till I am sure that what I am saying is correct, before I put forward an argument. Yes In between No
4. I am inclined to let my actions get swayed by feelings of jealousy. Sometimes Seldom Never
5. If I had my life to live over again I would: (a) plan very differently, (b) want it the same. A In between B
6. I admire my parents in all important matters Yes In between No
7. I find it hard to "take 'no' for an answer", even when I know what I ask is impossible. True In between False
8. I doubt the honesty of people who are more friendly than I would naturally expect them to be. True In between False
9. In demanding and enforcing obedience my parents (or guardians) were: (A) always very reasonable, (B) often unreasonable. A In between B
10. I need my friends more than they seem to need me. Rarely Sometimes Often
11. I feel sure that I could "pull myself together" to deal with an emergency. Always Often Seldom
12. As a child I was afraid of the dark. Often Sometimes Never
13. People can tell from my voice if I show my excitement in voice and manner too obviously. Yes Uncertain No
14. If people take advantage of my friendliness I: (A) soon forget and forgive, (B) resent it and hold it against them. A In between B
15. I find myself upset rather than helped by the kind of personal criticism that many people make. Often Occasionally Never
16. Often I get angry with people too quickly True In between False
17. I feel restless as if I want something but do not know what. Very Rarely Sometimes Often
18. I sometimes doubt whether people I am talking to are really interested in what I am saying. True In between False
19. I have always been free from any vague feelings of ill-health, such as obscure pains, digestive upsets, awareness of heart action, etc. True In between False
20. In discussion with some people, I get so annoyed that I can hardly trust myself to speak. Sometimes Rarely Never
21. Through getting tense I use up more energy than most people in getting things done. True Uncertain False
22. I make a point of not being absent-minded or forgetful of details. True Uncertain False
23. However difficult and unpleasant the obstacles, I always stick to my original intentions. Yes In between No
24. I tend to get over-excited and "rattled" in upsetting situations. Yes In between No
25. I occasionally have vivid dreams that disturb my sleep. Yes In between No
26. I always have enough energy when faced with difficulties. Yes In between No
27. I sometimes feel compelled to count things for no particular purpose. True Uncertain False
28. Most people are a little queer mentally, though they do not like to admit it. True Uncertain False
29. If I make an awkward social mistake I can soon forget it. Yes In between No
30. I feel grouchy and just do not want to see people: (A) occasionally, (B) rather often. A In between B
31. I am brought almost to tears by having things go wrong. Never Very rarely Sometimes
32. In the midst of social groups I am nevertheless sometimes overcome by feelings of loneliness and worthlessness. Yes In between No

33. I wake in the night and, through worry, have some difficulty in sleeping again. Often Sometimes Never
34. My spirits generally stay high no matter how many troubles I meet. Yes In between No
35. I sometimes get feelings of guilt or remorse over quite small matters. Yes In between No
36. My nerves get on edge so that certain sounds, e.g., a screechy hinge, are unbearable and give me the shivers. Often Sometimes Never
37. If something badly upsets me I generally calm down again quite quickly. True Uncertain False
38. I tend to tremble or perspire when I think of a difficult task ahead. Yes In between No
39. I usually fall asleep quickly, in a few minutes, when I go to bed. Yes In between No
40. I sometimes get in a state of tension or turmoil as I think over my recent concerns and interests. True Uncertain False

```
    2        27.0000     26.0000

CELL MEANS, BLOCKS = C LEVELS.

AR              1           2
    1       30.0000     26.0000
    2       29.0000     28.0000

AR              1           2
    1       28.0000     26.5000
    2       28.5000     25.5000

SUBJECTS PER CELL, BLOCKS = C LEVELS.

AR              1           2
    1        1.0000      2.0000
    2        1.0000      2.0000

AR              1           2
    1        1.0000      2.0000
    2        2.0000      2.0000
```

MULTIPLE DISCRIMINANT ANALYSIS

This statistical technique may be conceptualized as an extension of single-classification analysis of variance to include simultaneously a group of dependent variables. The problem is to determine the extent and manner in which two or more previously defined groups of subjects may be differentiated by a set of dependent variables operating together. With two groups of subjects this separation can be represented only along a single dimension, but with more than two groups the differentiation may be described in terms of multiple independent dimensions. The *maximum* number of these "factors" or reference axes necessary to represent group differences will be the number of groups minus one, or the number of variables, whichever is smaller.

The procedure used in Program DISCRIM is based on the work of Cooley and Lohnes (1962), although certain minor modifications have been made. The direct factoring of $W^{-1}A$ and the internal computation of correlations between original variables and discriminant functions are the responsibility of the author.

The notation of matrix algebra is the most convenient vehicle for describing the computational sequence. For each group of subjects, the matrices P, T, and W are formed in turn from the raw scores (X) by the following methods:

$P_{uv} = X'_{ui}X_{iv}$	raw cross-products
$T_{uv} = X'_{ui}C_{iv}$	raw sums
$W_{uv} = P_{uv} - T_{iu}T_{iv}N^{-1}$	deviation cross-products

where N = the number of subjects in the group
M = the number of variables

These matrices and the total N are accumulated over all groups and the following matrices are developed from them. P, T, W, and N henceforth refer to the accumulated matrices.

$C_{uv} = N^{-1}(P_{uv} - T_{iu}T_{iv}N^{-1})$	covariance matrix
$A_{uv} = NC_{uv} - W_{uv}$	among-groups matrix

Although W^{-1} and A are symmetric matrices, their product is not. The discriminant functions are the eigenvectors of this product matrix $W^{-1}A$, and cannot be extracted with Subroutine SEVS. A subroutine for extracting the roots and vectors of a square by asymmetric matrix follows.

AEVS (NV, NI, C, A, V, E, X, Y, Z, ND)

A subroutine to extract roots and vectors from a square asymmetric matrix.

This subroutine is organized very much like Subroutine SEVS, except that both "right" and "left" eigenvectors are extracted and their outer product is used to deflate the A matrix after extraction of each root. The right (column) vectors are returned by the routine in denormalized form as columns of matrix V. The vector E is returned holding the corresponding roots which are the sums of squares of these column vectors. The deflation technique used here is described by White (1958). It is worth noting that if the input matrix A is symmetric, the right and left vectors are identical and the computational formulas may be reduced to those of Subroutine SEVS. An arbitrary limit of 25 iterations has been imposed on the extraction of each root, which yields more than enough accuracy for most problems in the behavioral sciences (Figure 10-5).

```
      SUBROUTINE AEVS (NV, NI, C, A, V, E, X, Y, Z, ND)
C
C  EXTRACT ROOTS AND DENORMAL VECTORS FROM A NON-SYMMETRIC SQUARE MATRIX.
C  NV = THE ORDER OF A.
C  NI = INPUT AS MAX. NUMBER OF FACTORS TO BE EXTRACTED. OUTPUT AS
C       NUMBER EXTRACTED WHICH EXCEEDED MINIMUM C.
C  C = MINIMUM EIGENVALUE TO BE EXTRACTED.
C  A = SQUARE INPUT MATRIX, DESTROYED IN PROCESSING.
C  V = OUTPUT MATRIX OF COLUMN VECTORS OF LOADINGS.
C  E = OUTPUT VECTOR OF ROOTS.
C  X = OUTPUT VECTOR OF PERCENTAGES OF TRACE FOR FACTORS.
C  Y,Z = TEMPORARY STORAGE VECTORS.
```

```
C  ND = NUMBER OF ROWS DIMENSIONED FOR A AND V IN CALLING PROGRAM.
C
      DIMENSION A(ND,NV), V(ND,NF), E(NF), X(NV), Y(NV), Z(NV)
C  COMPUTE TRACE.
      T = 0.0
      DO 5 I = 1,NV
    5 T = T + A(I,I)
      DO 30 K = 1,NF
C  ROOTS IN E(K) AND EK. VECTORS IN V(.,K) AND Z.
      DO 10 I = 1,NV
      X(I) = 1.0
   10 Y(I) = 1.0
      E(K) = 1.0
      EK = 1.0
      DO 25 M = 1,25
      DO 15 I = 1,NV
      V(I,K) = X(I) / E(K)
   15 Z(I) = Y(I) / EK
      DO 20 I = 1,NV
      X(I) = SCPFIA(A, V, -I, K, NV, ND)
   20 Y(I) = SCPFIA(A, Z, I, 1, NV, ND)
      E2 = SCPFIA(A, V, I, K, NV, ND)
      E(K) = SQRT(ABS(E2))
   25 EK = SQRT(ABS(SCPFIA(A, Z, 1, 1, NV, ND)))
      IF (E2 .LT. C * C) GO TO 35
C  DEFLATE A MATRIX.
      D = E(K) / SCPFIA(V, Z, K, 1, NV, ND)
      DO 33 I = 1,NV
      DO 33 J = 1,NV
   30 A(I,J) = A(I,J) - V(I,K) * Z(J) * D
      GO TO 40
   35 NF = K - 1
C  COMPUTE PERCENTS OF TRACE.
   40 DO 45 I = 1,NF
   45 X(I) = E(I) / T * 100.0
      EV = SCPFIA(X, 1, NF, ND)
      PRINT 50, T, EV, NF
  50 FORMAT (1// 45H PRINCIPAL AXIS ANALYSIS (ASYMMETRIC MATRIX), //
     1 18H TRACE = F10.4 // F7.2, 31H PCT. OF TRACE WAS EXTRACTED BY, I3,
     2 7H ROOTS.)
      RETURN
      END
```

An intuitive approach to understanding the discriminant analysis procedure is suggested by interpreting the $W^{-1}A$ matrix as analogous to an F ratio in single-classification analysis of variance: F is the ratio of terms representing within-group and among-group variation also. If the F ratio can be considered an index of the ability of a dependent variable to discriminate (separate) the predetermined groups of subjects, then the factoring of the $W^{-1}A$ matrix may be construed as the partitioning of the discriminating power of the set of dependent variables into independent components, which may perhaps lead to or support hypotheses about underlying sources of the variation among the groups.

The vectors obtained from $W^{-1}A$ by Subroutine AEVS are also analogous to factor dimensions in that they are independent axes defining a K-fold space. The nature of this space, however, is such that when points representing the groups are located within it, these points are separated from each other to a maximum degree. Points representing each individual

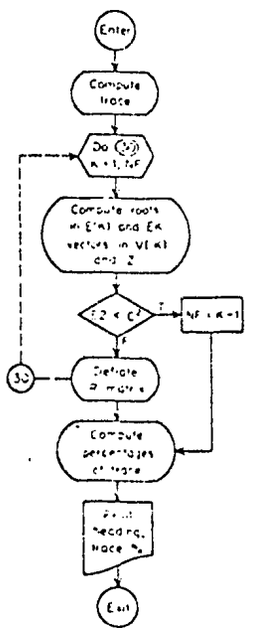

FIGURE 10-5. Subroutine AEVS flow chart.

subject in the sample may also be located within this space. In order to obtain the coordinates for these points, the vectors returned by Subroutine AEVS are normalized and the resulting eigenvectors of $W^{-1}A$ are then multiplied directly by each subject's vector of raw scores on the original variables to obtain a set of discriminant scores. We will use the letter K to indicate the number of discriminant axes and also the number of discriminant scores per subject. The vectors returned by Subroutine AEVS are normalized by:

$$B_{vk} = V_{vk} E_{kk}^{-1/2}$$

Discriminant scores for all subjects are represented by:

$$D_{sk} = X_{sv} B_{vk}$$

Just as individual subjects may be located by sets of discriminant scores,

so also may groups be located at their *centroids* in the discriminant space. The coordinates of these centroids or multivariate means are computed from a matrix H containing the means of each of the L groups on each of the M original variables, using the same eigenvectors:

$$G_{LA} = H_{LM}B_{MA}$$

The coefficients contained in the eigenvectors of $W^{-1}A$ do not necessarily reflect the relationships between the original variables and the discriminant-function variables. To compute correlations between these two sets of dimensions in order to determine the "nature" of the discriminant functions, we could obtain discriminant scores for all subjects and directly compute the correlations we seek. It is more economical from a programming standpoint, however, to use the covariance matrix C as a basis for accomplishing this by the following method:

$$\begin{aligned} S_{JJ} &= C_{JJ}^{1/2} && \text{(sigmas of the original variables)} \\ Q_{JA} &= (B'_{AM}C_{MM}B_{MA})_{JA}^{1/2} && \text{(sigmas of the discriminant variables)} \\ R_{MA} &= S_{JJ}^{-1}C_{MM}B_{MA}Q_{JA}^{-1} \end{aligned}$$

These correlation coefficients may be interpreted in much the same way as factor loadings, to describe the discriminant dimensions in terms of the names of the original variables.

Although the maximum number of discriminant axes (K) are obtained from Subroutine AEVS and are used in all of the previously described computations, they will be successively less important in that they will account for successively less of the differences among the predefined groups of subjects on the original dimensions. A statistical test is available to determine the extent to which the discrimination of the groups obtained would be likely by chance alone, as well as tests for the significance of group separation along each of the discriminant axes. Wilk's Lambda is defined by

$$\prod_{1}^{K} [1/(E+1)]$$

where the symbol Π means the product of all K terms, and is tested with an F ratio (Cooley and Lohnes, 1962, p. 125) which indicates the significance of overall group differentiation. Chi-square tests of the significance of each discriminant function are computed from formulas derived from Rao (1952, p. 373).

When only one discriminant dimension is significant, subject scores and group centroids can be adequately represented at points on a single linear dimension scaled in terms of the discriminant scores. When two functions are significant, a two-dimensional plot (graph) is required, as illustrated in Figure 10-6, where we have plotted the subject points and group centroids for the example problem. The discrimination effected here is artificially

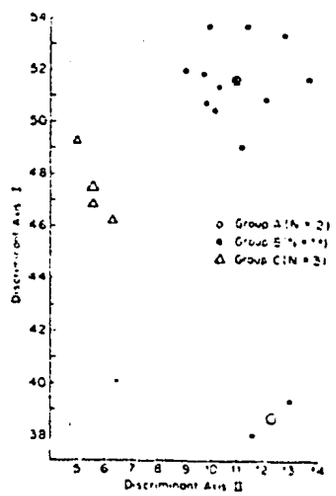

FIGURE 10-6. Group centroids and subject points for example problem

strong, because the grouping of subjects was determined by output from Program HIGROUP (presented in a later chapter) which clusters subjects so as to maximize group differences.

PROGRAM ORGANIZATION

After obtaining parameters and the data-card format from the CCDS Subroutine, the C and W matrices are zeroed, since they will hold raw and deviation cross-products accumulated over groups. As each group of subjects is input from data cards punched in the usual manner (data scores for variables across each subject's cards), the sum of scores on each variable is stored in matrix S and a within-group matrix is computed and added to W. Raw cross-products are added to matrix C. Raw sums of squares are saved in Q for the later univariate analyses, and the covariance, among and within-group matrices are computed. $W^{-1}A$ is computed next and submitted to Subroutine AEVS. Discriminant score weights are computed and output, followed by computation of correlations between original variables and discriminant functions.

Wilks' Lambda is computed and tested for significance, followed by the chi-square tests of each discriminant function. Group centroids are computed next, and then univariate analyses of variance are computed for each

of the original variables for comparison purposes. Finally, discriminant scores are computed for each subject, if optioned (Figure 10-7).

EXAMPLE PROBLEM

This example problem is artificial in that the subjects have been clustered by an analytic routine (Program HGROUP) which maximizes group differences. Most of the subjects compose group B, while two other groups of relatively deviant score-profile types are composed of only two and three subjects respectively. Both of the discriminant functions yield significant chi-square values. Most of the variables load the first discriminant axis, while the second discriminant function appears to be determined largely by variable five. Inspection of the results of the univariate analyses indicates that variables six, seven, and eight do not by themselves separate the groups. Their contributions to the composite discriminant functions, on the other hand, are indicated by their weights in the vectors used to compute the discriminant scores (punched output listing), as well as by their correlations with the discriminant-function variables (printed output).

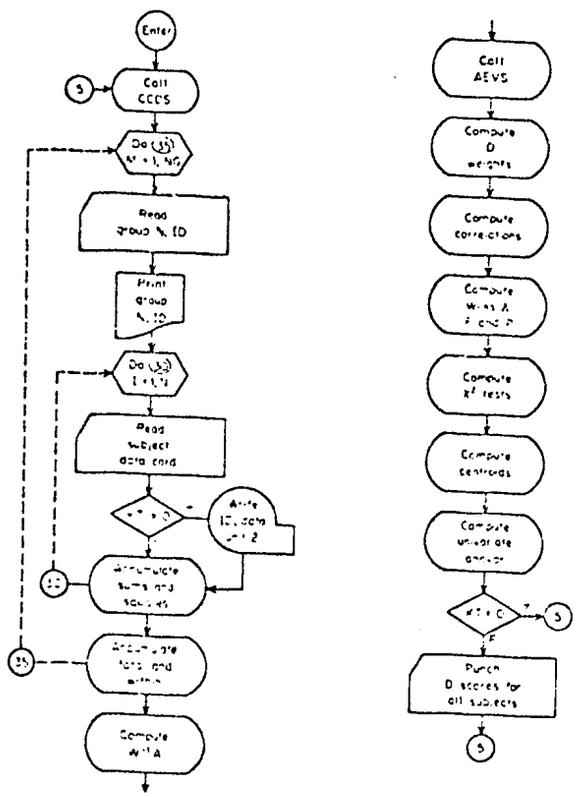

FIGURE 10-7. Program DSCRIM flow chart.


```
C     PROGRAM DSCRIM
C
C  MULTIPLE DISCRIMINANT ANALYSIS CONTROL PROGRAM.
C  PARAMETERS ARE DEFINED BELOW.
C     COL 1-5.  NUMBER OF PREDICTOR VARIABLES.  MAX = 70.
C     COL 6-10. NUMBER OF GROUPS OF SUBJECTS.  MAX = 10.
C     COL 15.  1 = PUNCH DISCRIMINANT FUNCTION WEIGHTS.
C     COL 20.  1 = PUNCH DISCRIMINANT SCORES FOR SUBJECTS.
C  TAPE UNIT 2 IS USED FOR TEMPORARY STORAGE (SCRATCH).
C  FORMAT MUST SPECIFY ID FIELD BEFORE SCORE FIELDS.
C  A GROUP CONTROL CARD IS REQUIRED BEFORE EACH SET OF DATA CARDS.
C     (COL 1-5 = GROUP NO. COL 6-80 = ALPHAMERIC GROUP IDENTIFICATION)
C  SUBROUTINES AND FUNCTIONS REQUIRED ARE
C     SUMF, SCPF, PRMF, CCDS, PAFS, RCDS, SUMS, ATPS, EMVS, AEVS.
C
      DIMENSION A(70,70), W(70,70), C(70,70), S(70,10), T(70),
     1 V(70), X(70), Y(70), Z(70), Q(70), G(10), RF(36), EM(15)
      N1 = 70
      N2 = 10
    5 CALL CCDS (KF, NV, NG, KW, RT, 1)
      DO 10 I = 1,NV
      DO 10 J = 1,NV
      A(I,J) = 0.0
   10 W(I,J) = 0.0
      IF (KT .GT. 0) REWIND 2
C  INPUT DATA, ACCUMULATE SUMS AND CROSS-PRODUCTS.
      DO 35 M = 1,NG
      READ 15, N, EM
   15 FORMAT (I5, 15A5)
      PRINT 20, M, N, EM
   20 FORMAT (/ 6H GROUP, I2, I8, 10H SUBJECTS., 2X, 15A5)
      G(M) = N
      DO 25 I = 1,NV
      S(I,M) = 0.0
      DO 25 J = 1,NV
   25 A(I,J) = 0.0
      DO 30 I = 1,N
      READ KF, ID, (X(J), J = 1,NV)
      IF (KT .GT. 0) WRITE (2) ID, (X(J), J = 1,NV)
      DO 30 J = 1,NV
      S(J,M) = S(J,M) + X(J)
      DO 30 K = J,NV
   30 A(J,K) = A(J,K) + X(J) * X(K)
      DO 35 I = 1,NV
      DO 35 J = 1,NV
      C(I,J) = C(I,J) + A(I,J)
   35 W(I,J) = W(I,J) + (A(I,J) - S(I,M) * S(J,M) / G(M))
      TM = SUMF(G, 1, NG, N2)
```

```
      DO 60 I = 1,NV
        T(I) = SUMF(S, -I, NG, NI) / TN
   60 D(I) = C(I,I)
C  COMPUTE COVARIANCE, AMONG, AND WITHIN MATRICES.
      DO 65 I = 1,NV
      DO 65 J = 1,NV
      C(I,J) = C(I,J) / TN - T(I) * T(J)
      C(J,I) = C(I,J)
      A(I,J) = C(I,J) * TN - W(I,J)
   65 A(J,I) = A(I,J)
C  COMPUTE AND FACTOR W INVERSE A.
      CALL INVS (NV, W, R, Y, Z, NI)
      DO 55 I = 1,NV
      DO 50 J = 1,NV
   50 A(I,J) = W(I,J)
      DO 55 J = 1,NV
   55 W(I,J) = SCPF(X, A, I, J, NV, NI)
      NF = MINDNG - 1, NV)
      CALL AEVS (NV, NF, 0.0, W, A, V, R, Y, Z, NI)
C  COMPUTE AND OUTPUT DISCRIMINANT-SCORE WEIGHTS.
      DO 60 J = 1,NF
      E = 1.0 / SQRT(E(J))
      DO 60 I = 1,NV
   60 A(I,J) = A(I,J) * E
      IF (KH .EQ. 1) CALL PCOS (A, NV, NF, SHD WTS, NI)
C  COMPUTE CORRELATIONS OF DISCRIMINANT AND ORIGINAL VARIABLES.
      DO 65 I = 1,NV
   65 X(I) = SQRT(C(I,I))
      CALL AXBS (C, A, W, NV, NF, NV, NI)
      DO 70 I = 1,NF
   70 Y(I) = SQRT(SCPF(A, W, I, I, NV, NI))
      DO 75 I = 1,NV
      DO 75 J = 1,NF
   75 C(I,J) = W(I,J) / (X(I) * Y(J))
C  COMPUTE WILKS LAMBDA, F-RATIO, AND PROBABILITY.
      TR = SUMF(V, 1, NF, NI)
      XL = 1.0
      DO 80 I = 1,NF
      X(I) = V(I) / TR * 100.0
   80 XL = XL * (1.0 / (1.0 + V(I)))
      VN = NV
      GN = NG
      GM = GN - 1.0
      SS = SQRT((VN**2 * GM**2 - 4.0) / (VN**2 + GM**2 - 5.0))
      YY = XL**(1.0 / SS)
      FA = VN * GM
      FR = (1.0 - YY) * (VN + GN - 2.0) * SS - (VN * GM - 2.0) / 2.0
      F = (FR * (1.0 - YY)) / (YY * FA)
      P = PROB(FA, FR, F)
      PRINT 85, XL, FA, FR, F, P
   85 FORMAT (/// 15H WILKS LAMBDA =, F10.3 // 7H D.F. =, F5.0,
     1 4H AND, F7.0 // 10H F-RATIO =, F8.3, 5X, 3HP =, F7.4)
C  COMPUTE CHI-SQUARE TESTS AND PROBABILITIES.
      DF = VN * GN
      CC = TN - DF / 2.0
      DO 90 I = 1,NF
      CC = CC - ALOG(1.0 + V(I))
      DF = DF - 2.0
      P = PROB(DF, CC, DF, P)
   90 PRINT 95, I, V(I), CC, DF, P
   95 FORMAT (/ 5H0***, I2, F10.2, 14H PCT. VARIANCE //
     1 11H CHI-SQUARE =, F10.3, 5X, 6HD.F. =, F5.0, 5X, 3HP =, F7.4)
C  COMPUTE CENTROIDS.
      DO 100 I = 1,NV
```



```
        T(I) = T(I) * TN
      DO 100 J = 1,NG
  100 S(I,J) = S(I,J) / G(J)
      CALL AXBS (S, A, W, NG, NF, NV, NI)
      CALL PRTS (W, NG, NF, SHCENT, NI)
      CALL PRTS (C, NV, NF, ANCPEL, NI)
C  COMPUTE UNIVARIATE ANALYSES OF VARIANCE.
      DFW = TN - GN
      PRINT 105, GM, DFW
  105 FORMAT (/// 26H UNIVARIATE F-TESTS, DFB =, F3.0,
     1 16H DFW =, F4.0 /// 18H VARIABLE  F-RATIO, 6X, 3HP)
      DO 115 I = 1,NV
      B = 0.0
      DO 110 J = 1,NG
  110 B = B + S(I,J)**2 * G(J)
      CC = T(I)**2 / TN
      F = (B - CC) * DFW / (Q(I) - B) * GM
      P = PROB(GM, DFW, F)
  115 PRINT 120, I, F, P
  120 FORMAT (/ I6, F12.4, F12.4)
      CALL PRTS (S, NV, NG, 6HG MEAN, NI)
      IF (KT .EQ. 2) GO TO 5
C  COMPUTE AND PUNCH DISCRIMINANT SCORES FOR SUBJECTS.
      REWIND 2
      NT = TN
      DO 130 I = 1,NT
      READ (2) ID, (X(J), J = 1,NV)
      DO 125 J = 1,NF
  125 Y(J) = SCPF(X, A, I, J, NV, NI)
  130 CALL SCRS (Y, NF, 2HDS, ID)
      GO TO 5
      END
```

*** INPUT DATA DECK ***

```
DISCRIM EXAMPLE PROBLEM
0GROUP A (SUBJECTS 1-3)
 (4A6, A2, 6F7.0)
00002 GROUP A (SUBJECTS 1-3)
S01SRI GS     25.   21.   22.   20.   26.   26.   19.   21.   19?.
S03SRI GS     20.   25.   20.   23.   18.   24.   21.   24.   19?.
00003 GROUP B
S02SRI GS     28.   27.   30.   26.   28.   20.   24.   28.   21?.
S04SRI GS     30.   28.   29.   29.   28.   23.   28.   30.   22?.
S05SRI GS     25.   29.   29.   27.   26.   25.   26.   25.   21?.
S06SRI GS     26.   27.   32.   24.   29.   24.   14.   26.   20?.
S07SRI GS     24.   20.   19.   26.   25.   28.   30.   18.   19?.
S11SRI GS     24.   28.   30.   28.   27.   27.   21.   16.   21?.
S12SRI GS     26.   29.   26.   27.   24.   19.   30.   17.   21?.
S13SRI GS     32.   27.   26.   24.   25.   21.   28.   24.   20?.
S14SRI GS     29.   29.   29.   28.   25.   19.   30.   5??.   21?.
S15SRI GS     29.   25.   28.   26.   24.   21.   30.   20.   21?.
S18SRI GS     20.   26.   30.   20.   25.   20.   30.   24.   20?.
00003 GROUP C (SUBJECTS 5,6,7)
S05SRI GS     23.   25.   29.   19.   20.   27.   26.   29.   19?.
S06SRI GS     28.   27.   30.   22.   19.   25.   30.   29.   20?.
S07SRI GS     28.   24.   27.   27.   17.   21.   30.   26.   20?.
```

*** PUNCHED OUTPUT ***

```
D WTS  1 1     0.1493     0.0793
D WTS  2 1     0.6072     0.1362
```

```
D WTS  3 1     0.7722    -0.7207
D WTS  4 1     0.1295     0.0220
D WTS  5 1     0.3040     0.6024
D WTS  6 1    -0.2430     0.0171
D WTS  7 1     0.1965     0.0022
D WTS  8 1     0.0940     0.3017
$01SRIDS 1    39.3387    13.0150
$03SRIDS 1    38.0763    11.6115
$02SRIDS 1    53.6256    11.2088
$04SRIDS 1    51.7692    12.7634
$06SRIDS 1    50.7143     9.6157
$09SRIDS 1    50.8275    12.1953
$10SRIDS 1    51.8393     9.7334
$11SRIDS 1    51.2787    10.3458
$12SRIDS 1    51.5870    13.6516
$13SRIDS 1    49.0022    11.2895
$14SRIDS 1    53.5689     9.9422
$15SRIDS 1    50.3168    10.1490
$16SRIDS 1    51.9342     8.9757
$05SRIDS 1    46.1157     6.3041
$06SRIDS 1    49.2242     5.0439
$07SRIDS 1    48.6980     5.5560
```

*** PRINTED OUTPUT ***

```
1DSCRIM EXAMPLE PROBLEM

 PARAMETERS
 COL  1- 5 =     5
 COL  6-10 =     3
 COL 11-15 =     1
 COL 16-20 =     2
 COL 21-25 =     0

 DATA FORMAT = (A6, 6X, 8F7.0)

 GROUP 1       2 SUBJECTS.   GROUP A (SUBJECTS 1:3)

 GROUP 2      11 SUBJECTS.   GROUP B

 GROUP 3       3 SUBJECTS.   GROUP C (SUBJECTS 9:6:7)

 PRINCIPAL AXIS ANALYSIS (ASYMMETRIC MATRIX).

 TRACE =   14.2884

 100.00 PCT. OF TRACE WAS EXTRACTED BY  2 ROOTS.

 WILKS LAMBDA =      .019

 D.F. =  16. AND    12.

 F-RATIO =   4.665     P =  .0035

ORDOT 1     76.37 PCT. VARIANCE

 CHI-SQUARE =    28.014     D.F. =   9.     P =  .0026

ORDOT 2     23.63 PCT. VARIANCE

 CHI-SQUARE =    15.561     D.F. =   7.     P =  .0306
```



```
CENT.          1          2
    1     38.7060    12.3233
    2     51.6326    10.9155
    3     47.3464     5.6344

COREL.         1          2
    1      .6235     -.0843
    2      .7825      .2026
    3      .8591     -.3633
    4      .5501      .2559
    5      .5551      .7363
    6     -.4058     -.2013
    7      .3773     -.4533
    8      .3368      .1039

UNIVARIATE F-TESTS. DFR =  2. DFW =   13.

VARIABLE  F-RATIO      P
    1      3.6818    .0531
    2      9.4517    .0032
    3     22.7658    .0002
    4      3.1689    .0746
    5     15.2042    .0008
    6      1.4475    .2703
    7      2.6416    .1078
    8       .8321    .5397

G MEAN         1          2          3
    1     22.5000    27.4545    26.3333
    2     23.0000    28.1818    25.3333
    3     21.0000    28.8182    28.6667
    4     21.5000    26.0000    22.6667
    5     22.0000    26.3636    18.6667
    6     25.0000    22.0909    24.3333
    7     20.0000    26.4545    29.3333
    8     26.0000    27.6364    26.6667
```

Derivation Data for Cluster Analysis, California, The Northern Coastal Region

17 independent variables

SUBJECTS																				
N=104	0001	1	12	2	20	2	1	113	8	12	1	8	23	14	40	5	40	15	39	16
	0002	1	12	2	20	1	1	112	3	4	2	5	20	13	32	3	36	16	33	3
	0003	4	10	2	26	2	1	12310	11	1		8	22	11	34	5	36	16	30	10
	0004	2	1	1	20	1	1	120	6	12	1	2	17	14	35	5	19	3	28	1
	0005	2	5	2	21	1	1	126	8	12	1	5	18	15	26	3	38	9	26	7
	0006	2	7	2	22	2	1	142	4	7	1	1	14	9	37	1	33	12	26	1
	0007	3	12	1	22	2	1	121	2	12	1	5	17	13	30	4	35	11	23	10
	0008	1	18	1	20	1	1	114	7	12	1	5	22	11	35	4	36	18	39	2
	0009	1	12	2	22	1	1	136	5	19	1	6	22	7	31	7	30	19	42	15
	0010	4	7	1	24	1	1	118	5	12	1	6	19	13	34	4	37	9	34	11
	0011	3	12	1	21	1	1	130	4	12	1	7	25	7	29	7	38	1	23	16
	0012	2	9	3	19	2	1	115	4	6	1	4	21	13	32	4	35	14	33	9
	0013	4	9	1	20	2	1	104	2	6	2	10	21	9	34	10	33	15	29	18
	0014	3	13	2	21	2	1	141	2	12	1	5	18	18	38	8	37	7	28	9
	0015	1	21	1	19	2	1	11910	11	1		7	25	5	43	1	33	18	30	13
	0016	2	9	1	22	2	1	99	4	12	1	4	27	4	33	6	27	18	29	5
	0017	1	18	1	22	1	1	112	4	12	1	10	29	7	40	10	42	13	32	18
	0018	1	22	1	19	2	1	115	7	11	1	8	30	8	48	9	30	8	30	12
	0019	1	12	1	19	1	1	125	4	12	2	3	14	10	33	4	29	5	34	7
	0020	4	7	1	22	1	1	143	4	19	1	1	20	13	31	1	30	13	28	4
	0021	4	5	1	21	2	1	122	5	11	2	8	26	15	30	6	31	19	39	13
	0022	2	4	3	21	1	1	98	8	11	2	9	25	12	32	9	29	13	25	18
	0023	2	7	1	20	2	1	112	5	11	1	4	23	11	32	4	37	15	30	9
	0024	4	10	1	22	1	1	99	7	12	2	8	24	10	39	10	24	16	29	15
	0025	1	16	3	19	2	1	11511	19	1		7	20	12	32	7	28	21	37	14
	0026	3	18	2	22	1	1	9810	12	2		6	22	12	29	6	37	4	15	10
	0027	3	13	2	22	1	1	127	8	11	1	4	19	14	25	6	24	19	26	7
	0028	1	22	2	20	2	1	115	4	7	2	4	25	7	39	6	31	15	33	8
	0029	1	17	2	46	2	1	120	4	7	2	4	20	12	27	6	36	12	30	6
	0030	4	10	1	22	1	1	128	6	11	1	10	25	11	36	6	36	12	27	17
	0031	3	23	2	19	1	1	110	8	12	1	7	29	5	33	8	34	12	30	17
	0032	3	20	2	24	1	1	109	2	21	1	4	22	11	30	3	19	2	39	5
	0033	3	23	1	21	2	1	10910	12	1		5	25	7	34	7	36	1	27	19
	0034	2	9	1	20	2	1	106	8	12	1	2	27	7	25	3	26	12	23	12
	0035	3	22	1	19	1	2	77	7	4	1	6	26	13	36	3	31	16	33	14
	0036	3	20	1	21	1	1	92	5	12	1	7	25	10	29	7	37	8	22	10
	0037	1	23	1	20	1	1	96	2	5	1	8	25	10	33	7	10	18	31	11
	0038	3	23	2	24	1	1	125	8	11	1	3	23	4	35	5	30	14	20	6
	0039	2	7	2	20	1	1	118	7	12	1	5	20	8	30	1	29	12	30	12
	0040	2	11	1	19	1	1	12110	12	1		6	27	6	34	1	33	14	35	10
	0041	3	17	1	19	1	2	9911	11	1	10	27	11	32	9	39	8	31	18	
	0042	3	23	2	23	1	1	83	7	11	3	9	32	6	51	8	37	15	39	18
	0043	4	10	1	19	2	1	127	3	12	1	9	21	14	33	7	35	1	34	17
	0044	1	15	1	19	2	1	135	6	12	1	4	23	11	35	1	40	5	24	17
	0045	3	14	2	21	2	1	103	7	12	1	7	23	10	27	3	40	15	26	13
	0046	1	16	10	19	1	1	125	8	19	1	8	27	12	44	6	38	8	26	13
	0047	4	11	10	20	1	1	139	7	12	1	9	21	15	32	8	29	18	31	14
	0048	1	16	4	19	2	1	96	5	10	1	9	26	8	29	6	40	6	19	12
	0049	2	10	3	19	2	1	105	7	12	2	9	29	4	36	9	43	16	29	20
	0050	1	19	3	19	2	1	97	7	12	1	5	25	14	35	6	18	23	41	12
	0051	1	17	1	18	2	1	117	6	12	1	6	27	7	34	8	35	16	39	10
	0052	1	23	1	20	1	1	107	5	19	1	5	22	5	44	5	35	16	33	6
	0053	1	14	1	22	1	1	127	5	12	1	3	19	13	28	4	28	18	36	2
	0054	2	6	1	20	1	1	120	7	12	1	6	22	13	27	4	35	14	31	11
	0055	1	21	2	20	1	1	142	7	12	1	4	20	10	28	3	25	12	20	5
	0056	4	10	1	22	1	1	118	4	11	1	5	20	18	33	7	29	17	28	8
	0057	1	12	2	18	1	1	11410	11	2		6	28	3	35	8	29	16	20	14
	0058	3	21	1	21	1	1	12410	11	2		3	24	13	27	2	32	15	21	9
	0059	2	7	1	19	2	1	88	8	12	1	5	25	5	33	7	41	17	30	13
	0060	4	8	1	21	2	1	116	5	12	1	5	25	12	35	1	37	11	23	10
	0061	4	7	2	23	1	2	123	8	11	1	8	20	14	33	6	35	14	29	11
	0062	1	18	3	22	2	1	126	2	12	1	8	28	9	33	6	29	19	38	7
	0063	1	15	7	29	1	2	10513		12	1	4	22	10	24	4	33	9	15	6
	0064	1	23	1	19	2	1	96	7	12	1	7	32	5	42	6	39	14	31	15
	0065	1	12	1	19	2	1	92	9	12	4	8	25	8	27	5	42	13	24	10
	0066	2	8	1	20	1	1	11712		6	1	4	24	15	32	5	15	17	30	8
	0067	1	14	1	23	2	1	92	7	11	1	7	26	5	25	7	34	1	29	14
	0068	3	13	1	18	1	1	11111		4	2	4	29	10	30	6	36	11	21	10
	0069	3	13	2	20	1	1	126	2	12	1	8	22	15	36	10	35	16	34	9
	0070	2	6	1	21	2	2	9711		11	1	3	26	11	34	5	35	14	33	10
	0071	1	23	4	19	1	1	114	9	12	1	10	30	8	36	6	37	15	29	20
	0072	4	1	1	23	1	1	123	8	12	1	5	20	14	35	4	30	1	32	7
	0073	1	18	1	19	1	1	138	7	10	1	4	21	10	33	6	23	16	32	5
	0074	1	16	1	19	2	1	123	8	12	1	3	22	5	34	4	29	21	24	9
	0075	1	12	2	21	1	1	121	8	23	1	5	28	8	44	5	40	19	29	13
	0076	4	9	1	21	1	1	131	7	12	1	5	23	15	36	4	39	13	24	7
	0077	1	13	2	20	1	1	122	8	12	1	7	24	11	39	6	35	19	33	12
	0078	2	6	6	20	1	1	112	9	5	2	6	21	13	29	9	28	14	35	16
	0079	3	22	10	23	1	1	9811		11	1	10	29	7	34	7	41	15	35	18
	0080	1	23	2	20	2	1	113	5	12	1	5	22	14	31	5	26	16	27	9
	0081	1	12	1	21	2	1	128	9	11	1	2	25	11	27	3	26	13	26	5
	0082	4	6	2	22	2	1	140	7	12	1	7	20	12	28	6	42	2	13	12
	0083	4	2	1	23	1	1	10210		10	1	7	20	11	24	4	31	4	25	4
	0084	4	10	2	19	2	1	128	3	12	1	9	23	4	38	8	36	16	30	15
	0085	3	16	1	19	1	1	107	8	10	1	8	25	8	27	7	29	15	27	7
	0086	2	9	5	20	1	1	119	7	12	1	4	27	9	35	4	22	16	31	11
	0087	3	12	2	27	1	1	130	2	10	1	4	18	10	28	4	26	15	25	3
	0088	3	13	1	25	2	1	120	2	10	2	2	19	14	34	3	31	13	24	2
	0089	4	6	9	42	2	1	105	4	12	1	5	22	1	32	5	37	8	24	4
	0090	3	18	2	30	1	1	129	2	10	1	5	22	12	28	1	33	9	27	8
	0091	3	12	10	30	2	1	108	2	12	1	6	29	10	39	6	36	15	30	9
	0092	4	9	12	39	1	1	118	5	10	2	2	16	13	36	4	36	19	25	5
	0093	3	14	1	30	1	1	130	3	12	1	4	16	16	29	5	38	8	22	11
	0094	4	8	2	35	2	1	100	8	12	2	3	17	8	31	1	39	11	21	3
	0095	4	5	7	33	1	1	135	2	12	1	4	20	16	35	3	26	15	31	6
	0096	4	11	1	47	2	1	118	6	12	1	2	20	10	27	4	30	4	15	0
	0097	4	7	1	28	2	1	115	2	12	1	5	19	16	32	8	27	23	30	8
	0098	4	10	2	19	2	1	94	3	12	1	4	20	12	29	4	28	12	24	10
	0099	4	3	1	29	1	1	128	3	12	1	2	11	7	29	4	29	11	24	2
	0100	4	9	2	36	1	1	121	5	13	1	3	20	9	33	1	33	15	30	13
	0101	4	5	2	35	2	1	140	2	12	1	5	15	13	28	6	36	11	28	5
	0102	1	14	2	22	1	1	116	7	10	1	6	27	5	37	6	33	15	27	7
	0103	1	19	1	20	2	1	117	5	12	1	5	23	6	32	5	27	14	28	9
	0104	1	12	1	21	2	1	111	8	12	2	3	22	13	27	5	29	8	25	1

$\bar{x}$: 221

00000104

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34000320070136000320070249024025119636113001022
ZZJOB
ZZFORX
      DIMENSION C(18,4),X(17),NG(2),SS(4),NFRQ(4)
      READ 1,((C(I,J),J=1,4),I=1,18)
 1    FORMAT(5X,4F10.8)
      DO 5 J=1,4
 5    NFRQ(J)=0
 10   READ 2,N,X
 2    FORMAT(I4,5X,F2.0,F3.0,2F2.0,F4.0,F2.0,F3.0,F2.0,9F3.0)
      IF(N)20,20,30
 20   PUNCH 3,NFRQ
 3    FORMAT(//2H E2I9,10X2H G,2I9///)
      CALL EXIT
 30   DO 100 IX=1,2
      DO 50 JX=1,2
      J=JX+2*(IX-1)
      S=C(18,J)
      DO 40 I=1,17
 40   S=S+C(I,J)*X(I)
 50   SS(J)=S
      J=(IX-1)*2+1
      IF(SS(J)-SS(J+1))70,60,60
 60   NG(IX)=1
      GO TO 80
 70   NG(IX)=2
 80   J=NG(IX)+2*(IX-1)
      NFRQ(J)=NFRQ(J)+1
 100  CONTINUE
      PUNCH 4,N,NG(1),SS(1),SS(2),NG(2),SS(3),SS(4)
 4    FORMAT(I5,5X1HF I2,2F10.4,5X1HG I2,2F10.4)
      GO TO 10
      END
```

	A_1	A_2	B_1	B_2
1	-.0162003	-.0146869	-.0565002	-.0578750
2			.0406039	.0426022
3	.3402595	.3220530	.1662263	.1814051
4	1.4592789	1.4130924	.7921080	.7765087
5	.0312626	.0300566	.0195960	.0201118
6	.0118051	.0143494	.0358316	.0388259
7	.0037942	.0005346	.0698959	.0687720
8	.3424812	.3263638		

Discrim Lgts

9	.0964744	.0837088	-.0364962	-.0274398
10			.0684519	.0641278
11				
12	.0229030	.0215116	.0147106	.0172709
13			.0494433	.0436472
14	-.0023913	-.0014989	.0349193	.0336275
15	.0159433	.0144541	.0379606	.0386756
16	.0122429	.0134652		
17	-.0064478	-.0028945		

-3.9893525-3.7071312-4.4210487-4.5074194

SIO - Edwardsville Program

17 35 17 0 FOR MR ALCORN (E1 VS E2)

STEPWISE DISCRIMINANT ANALYSIS

VAR.	RIGHT SIDE	GRP1 MEAN	GRP2 MEAN
1	.3076916	2.0857142	2.0588235
2	2.0576929	20.8857140	20.7058820
3	.5000002	1.5142857	1.4705882
4	-.3461538	1.0285714	1.0588235
5	40.0000160	116.1428500	112.6470500
6	-8.2884604	6.5285714	7.3529411
7	19.4807670	12.1142850	10.4117640
8	.9230772	1.2571428	1.1764705
9	12.8653830	5.7714285	4.6470588
10	11.0769190	24.0857140	23.1176470
11	-9.1538456	9.2000000	10.0000000
12	31.0961620	34.6000000	31.8823520
13	7.6153839	5.3714285	4.7058823
14	12.7884710	32.0000000	30.8823520
15	11.5961600	14.5428570	13.5294110
16	6.0000025	30.1714280	29.6470580
17	-3.9807671	9.8285714	10.1764700

TOT SUM OF SQRS = 11.44233700

INFORMATION MATRIX

*	1	2	3	4	5	6	7	8
1	153.692	22.692	-10.000	3.846	-23.000	46.538	38.769	.076
2	22.692	861.443	-.500	8.346	225.000	-64.211	-102.980	11.077
3	-10.000	-.500	13.000	0.000	-87.000	-7.500	-9.500	1.000
4	3.846	8.346	0.000	1.923	-28.000	10.269	-.115	-.461
5	-23.000	225.000	-87.000	-28.000	8244.000	-150.000	266.000	-92.000
6	46.538	-64.211	-7.500	10.269	-150.000	302.057	93.903	-1.384
7	38.769	-102.980	-9.500	-.115	266.000	93.903	634.827	-21.692
8	.076	11.077	1.000	-.461	-92.000	-1.384	-21.692	15.230
9	51.384	-102.365	-5.500	-3.807	-503.000	1.827	53.288	8.153
10	31.923	-207.076	17.000	.461	-1099.000	84.384	114.693	-6.230
11	51.153	134.154	-12.000	2.076	367.000	17.230	-122.384	-2.538
12	8.153	-292.576	.500	-9.423	67.000	-44.019	278.366	-33.538
13	33.384	5.384	-1.000	-1.307	-545.000	-16.923	18.538	12.153
14	52.461	-21.288	32.500	4.730	-631.000	22.443	319.597	36.384
15	-53.846	-185.096	5.500	-5.423	-227.000	12.480	79.865	-16.538
16	-92.000	-125.000	-2.000	-12.000	340.000	-180.000	76.000	-24.000
17	104.230	-305.519	5.500	-3.884	-886.000	142.596	188.673	3.092

*	9	10	11	12	13	14	15	16
1	51.384	31.923	51.153	8.153	33.384	52.461	-53.846	-92.000
2	-102.365	-207.076	134.154	-292.596	6.384	-21.288	-185.096	-125.000
3	-5.500	17.000	-12.000	.500	-1.000	32.500	5.500	-2.000
4	-3.807	.461	2.076	-9.423	-1.307	4.730	-5.423	-12.000
5	-503.000	-1099.000	367.000	67.000	-545.000	-631.000	-227.000	340.000
6	1.827	84.384	17.230	-44.019	-16.923	22.443	12.480	-180.000
7	53.288	114.693	-122.384	278.366	18.538	319.597	79.865	76.000
8	8.153	-6.230	-2.538	-33.538	12.153	36.384	-16.538	-24.000
9	240.519	243.846	-72.692	203.057	134.769	269.673	63.557	76.000
10	243.846	763.231	-323.461	429.539	187.846	281.616	198.539	-36.000
11	-72.692	-323.461	540.923	-300.076	-50.692	-274.230	-134.076	151.000
12	203.057	429.539	-300.076	1470.674	130.307	421.520	155.174	406.000
13	134.769	187.846	-50.692	130.307	242.769	11.923	83.307	112.000
14	269.673	281.616	-274.230	421.520	11.923	2608.058	-248.980	-111.000
15	63.557	198.539	-134.076	155.174	83.307	-248.980	940.674	624.000
16	76.000	-36.000	151.000	406.000	112.000	-111.000	624.000	1636.000
17	374.211	537.308	-203.615	394.135	232.461	531.904	138.634	89.000

*	17
1	104.230
2	-303.519
3	5.500
4	-3.884
5	-886.[illegible]
6	142.596
7	188.673
8	3.692
9	374.211
10	537.308
11	-203.615
12	394.135
13	232.461
14	531.904
15	138.634
16	89.000
17	1210.827

	COEFFICIENT	INVERSE ELEM	SS DUE TO COEF		
1	-.0225948	.0095636	.0533821	-.0459204	-.0439458
2	.0040564	.0015561	.0105743	.0244743	.0241197
3	.2023205	.1075411	.3806320	.2361514	.2184696
4	.5101127	.9153385	.2842828	1.3725744	1.3279934

5	.0143826	.0002237	.8863328	.0197774	.0045060
6	-.0302906	.0062037	.1478968	-.0132252	-.0105780
7	.0382258	.0021987	.6645622	.0124128	.0090721
8	.1846202	.0981100	.3473859	.4403515	.4142166
9	.1402949	.0153673	1.3010620	.0337816	.0239231
10	.0040655	.0030775	.0062790	.0222777	.0 [illegible]
11	.0089423	.0037120	.0219422	.0 [illegible]	.0111268
12	.0170277	.0011638	.2467016	.3223964	.0210881
13	.0060270	.0082010	.0644289	-.0061732	-.0057 [illegible]
14	-.0092560	.0046417	.1335057	.0029579	.0137664
15	.0191123	.0019220	.1877691	.0223030	.0208838
16	-.0172163	.0013144	.2000606	.0145497	.0 [illegible]
17	-.0348491	.0021039	.7547369	-.0053924	-.0118497

VAR21 VAR22

3.2270050 3.3626220 -5.6561415 -5.3561350

R SQUARED REG DF ERROR DF VAR TO DELET

.3644439 17. 34. 15

REG SS REG MS ERROR MS F RATIO

4.1700794 .2452987 .2138 [illegible] 1.146 [illegible] .3232407

	COEFFICIENT	INVERSE [illegible]	SS [illegible]		
1	-.0221001	.0 [illegible]	.0513670	-.0 [illegible]	-.0 [illegible]
2	.0 [illegible]	.0 [illegible]	.0146077	.0 [illegible]	.0 [illegible]
3	.2519115	.1074190	.3162653	.2361727	.2183500
4	.1 [illegible]	.0124106	.0092359	1.3 [illegible]	1.3 [illegible]
5	.0153007	.0092102	.8934987	.0337816	.0245277
6	-.0383435	.0064741	.1576032	-.0132250	-.0104964
7	.0361687	.0021790	.5615124	.0124041	.0090769
8	.1097144	.0922550	.3501159	.4302051	.4136250
9	.1422007	.0153347	1.3040191	.0337693	.0239111
10	.0029220	.0035744	.0061606	.0222814	.0 [illegible]
11	.0089269	.0037119	.0216109	.0 [illegible]	.0110643
12	.0172334	.0011502	.2506496	.3223964	.0210948
14	-.0064436	.0029360	.0614472	.0029579	.0048240
15	.0190372	.0019203	.1867747	.0222903	.0207405
16	-.0136782	.0012600	.1990409	.0145339	.0103270
17	-.0 [illegible]	.0021039	.7528034	-.0053442	-.0 [illegible]

VAR21 VAR22

3.7771940 3.3021360 -5.6561360 -5.3561080

R SQUARED REG DF ERROR DF VAR TO DELET

.4640368 16. 35. 10

REG SS	REG MS	ERROR MS	F RATIO	P
4.1656508	.2603531	.2079044	1.2522730	.2282957

	COEFFICIENT	INVERSE ELEM	SS DUE TO COEF		
1	-.0218261	.0094991	.0501495	-.0412729	-.0393654
2	.0047102	.0014771	.0150198	.0255509	.0251392
3	.2073881	.1032831	.4164266	.3351262	.3170015
4	.5144486	.9123448	.2900648	1.3847714	1.3409112
5	.0135601	.0002020	.9098347	.0299487	[illegible]
6	-.0297490	.0059029	.1499265	[illegible]	.0105688
7	.0383769	.0021752	.6770671	.0098213	.0064673
8	.1846736	.0891553	.3825272	.3444439	.3283043
9	.1456249	.0121027	1.7522203	.0939821	.0812552
11	.0076069	.0032478	.0151172	.0392391	.0386268
12	[illegible]	.0011020	.2907313	.0338673	[illegible]
14	-.0099824	.0005810	.1714863	-.0010904	-.0002180
15	.0194412	.0019049	.1984072	.0293788	.0276797
16	-.0161657	.0012705	.2043948	.0000497	.0014625
17	-.0389436	.0020300	.7448916	.0030251	.0064286

BARZ1	BARZ2		
3.5878864	3.2245470	-4.4811205	-4.1834345

R SQUARED	REG DF	ERROR DF	VAR TO DELET
.3633412	15.	36.	2

REG SS	REG MS	ERROR MS	F RATIO	P
4.1574626	.2771641	.2023566	1.3696605	.1491126

	COEFFICIENT	INVERSE ELEM	SS DUE TO COEF		
1	-.0210459	.0094586	.0468281	-.0370407	-.0352014
3	.2080073	.1032575	.4190204	.3384848	.3203060
4	.5394327	.8707665	.3341665	1.5204983	1.4733544
5	.0137030	.0002007	.9353977	.0307257	.0295261
6	-.0314426	.0057119	.1733620	-.0012180	.0015299
7	.0383563	.0021752	.6763514	.0097099	.0063577
8	.1879939	.0884213	.3996968	.3624552	.3460254
9	.1455494	.0121023	1.7504596	.0935727	.0808525
11	.0074865	.0032325	.0173390	.0418405	.0411862
12	.0174314	.0010874	.2794181	.0313464	.0298230
14	-.0098526	.0005729	.1673790	-.0003863	.0004747
15	.0191374	.0018908	.1928758	.0277304	.0260579
16	-.0162293	.0012782	.2060510	-.0002955	.0011228
17	-.0395782	.0020092	.7796325	-.0004171	.0030417

BARZ1	BARZ2		
3.5064130	3.1443845	-4.2601375	-3.9695148

Discrim wgts on signif. variables at .04% Level

$E_1 + E_2$ Sc

C Not-C

R SQUARED	REG DF	ERROR DF	VAR TO DELET
.3620286	14.	37.	11

REG SS	REG MS	ERROR MS	F RATIO	P
4.1424428	.2958887	.1972936	1.4997380	.0892510

	COEFFICIENT	INVERSE ELEM	SS DUE TO COEF		
1	-.1173169	.0086567	.0346410	-.0162003	-.0146869
3	.2063248	.1032517	.4203245	.3402595	.3220530
4	.5284787	.8638662	.3233021	1.4592789	1.4130924
5	.0137994	.0002002	.9511487	.0312626	.0300566
6	-.0291124	.0053968	.1569851	.0118051	.0143494
7	.0372978	.0021106	.6591168	.0037942	.0005346
8	.1844200	.0876846	.3878756	.3424812	.3265630
9	.1460586	.0120607	1.7652379	.0964744	.0837088
12	.0159206	.0009558	.2651836	.0229030	.0215116
14	-.0102113	.0005725	.1821211	-.0023913	-.0014989
15	.0170281	.0016422	.1765611	.0159422	.0144541
16	-.0139858	.0009879	.1979804	.0122429	.0134652
17	-.0406573	.0019420	.8211728	-.0064478	-.0028945

BARZ1	BARZ2		
3.4095097	3.0489963	-3.9893525	-3.7071317

R SQUARED	REG DF	ERROR DF	VAR TO DELET
.3605133	13.	38.	1

REG SS	REG MS	ERROR MS	F RATIO	P
4.1251039	.3173156	.1925580	1.6478966	.0477348

	COEFFICIENT	INVERSE ELEM	SS DUE TO COEF		
3	.2161665	.1014766	.4604797	.3475956	.3287037
4	.4358018	.8112892	.2908992	1.4193540	1.3768973
5	.0134471	.0001966	.9196619	.0309330	.0297578
6	-.0293621	.0053970	.1597434	.0115715	.0141376
7	.0366914	.0020999	.6410824	.0032269	.0000202
8	.1836637	.0876681	.3847734	.3417737	.3257224
9	.1414810	.0114792	1.7437489	.0921826	.0798179
12	.0161243	.0009546	.2723564	.0230936	.0216844
14	-.0099007	.0005697	.1720456	-.0021007	-.0012354
15	.0176772	.0016200	.1916979	.0165495	.0150046
16	-.0132782	.0009735	.1811024	.0129049	.0140653
17	-.0413634	.0019276	.8875704	-.0071083	-.0034934

BARZ1	BARZ2		
3.3771027	3.0196168	-3.9741938	-3.6946734

R SQUARED REG DF ERROR DF VAR TO DELET

.3574858 12. 39. 6

	REG SS	REG MS	ERROR MS	F RATIO	P
	4.0974571	.3408719	.1885068	1.8082544	.0235046

	COEFFICIENT	INVERSE ELEM	SS DUE TO COEF		
3	.2354644	.0971454	.5592137	.3999404	.3194120
4	.4371023	.6730190	.1884282	1.4771245	1.4488565
5	.0132852	.0001904	.8965956	.0304968	.0298358
7	.0340379	.0020104	.5413076	.0046667	.0017744
8	.1733024	.0609961	.3452308	.3458571	.3307114
9	.1486322	.0112105	1.9547248	.0896008	.0768635
12	.0163674	.0009542	.2807392	.0229578	.0215073
14	-.0092326	.0005609	.1503492	-.0023639	-.0015570
15	.0147545	.0015766	.1380785	.0171013	.0154118
16	-.0099492	.0009041	.1094796	.0115930	.0124625
17	-.0472107	.0017136	1.3006669	-.0068039	-.0006779

BARZ1	BARZ2		
3.4400573	3.0965320	-3.9017893	-3.6761561

R SQUARED .3435251 REG DF 11. ERROR DF 40. VAR TO DELET 16

	REG SS	REG MS	ERROR MS	F RATIO	P
	3.9307200	.3573391	.1877896	1.9028638	.0191891

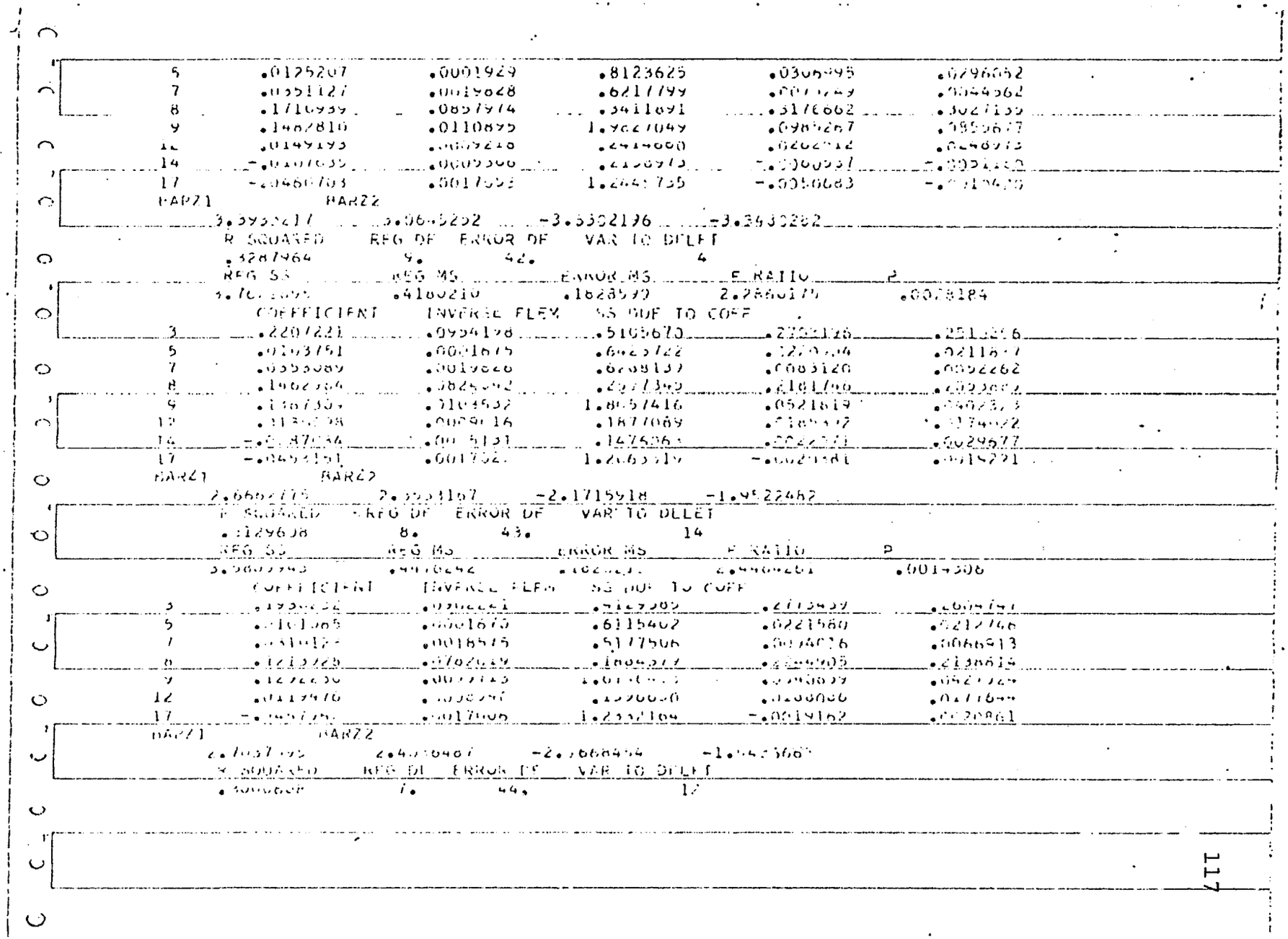
	COEFFICIENT	INVERSE ELEM	SS DUE TO COEF		
3	.2399966	.0991426	.5017869	.3993700	.3187431
4	.3653751	.6657509	.2003215	1.4450748	1.4131423
5	.0128093	.0001943	.8440739	.0315513	.0304519
7	.0338312	.0020106	.5692392	.0037423	.0007856
8	.1789065	.0607430	.3670917	.3392234	.3241136
9	.1460479	.0111743	1.9066860	.0911792	.0791968
12	.0145519	.0009241	.2291227	.0251142	.0233425
14	-.0094327	.0005605	.1576579	-.0021958	-.0014664
15	.0084755	.0012164	.0590569	.0250176	.0242768
17	-.0455289	.0017065	1.2677454	-.0058314	-.0017825

BARZ1	BARZ2		
3.5670242	3.2330672	-3.8671865	-3.6025565

R SQUARED .3339571 REG DF 12. ERROR DF 41. VAR TO DELET 15

	REG SS	REG MS	ERROR MS	F RATIO	P
	3.8512422	.3821240	.1858796	2.0557660	.0076202

	COEFFICIENT	INVERSE ELEM	SS DUE TO COEF		
3	.2433127	.0983384	.6026499	.4604631	.3497007
4	.3995677	.6591205	.1011933	1.3000615	1.2584697



5	.0125207	.0001929	.8123625	.0306495	.0296052
7	.0351127	.0019648	.6217799	.0071749	.0044562
8	.1710959	.0857974	.3411691	.3176662	.3027139
9	.1467810	.0110895	1.9667049	.0985267	.0956677
12	.0149193	.0009218	.2414660	.0262712	.0248973
14	-.0107035	.0009306	.2136973	-.0060937	-.0051650
17	-.0460703	.0017653	1.2441735	-.0350683	-.0319439

PAR21 PAR22

3.3933411 3.0665292 -3.5302196 -3.3433282

R SQUARED	REG DF	ERROR DF	VAR TO DELET
.4287964	9.	42.	4

REG SS	REG MS	ERROR MS	F RATIO	P
3.7[illegible]	.4180210	.1628599	2.2860179	.0078184

	COEFFICIENT	INVERSE FLEM	SS DUE TO COEF		
3	.2207221	.0994198	.5106670	.2302126	.2513216
5	.0103751	.0001675	.6625722	.1270404	.0211647
7	.0355089	.0019626	.6208137	.0083120	.0052262
8	.1962264	.0825442	.2273369	.2181700	.2023604
9	.1367354	.0104532	1.8057416	.0521619	.0482373
12	.1134238	.0089016	.1877069	.2185442	.1974022
14	-.0187534	.0015131	.1476861	.0242271	.0229677
17	-.0459151	.0017652	1.2663519	-.0521481	.0518221

PAR21 PAR22

2.6602775 2.3231107 -2.1715918 -1.9522462

R SQUARED	REG DF	ERROR DF	VAR TO DELET
.3296938	8.	43.	14

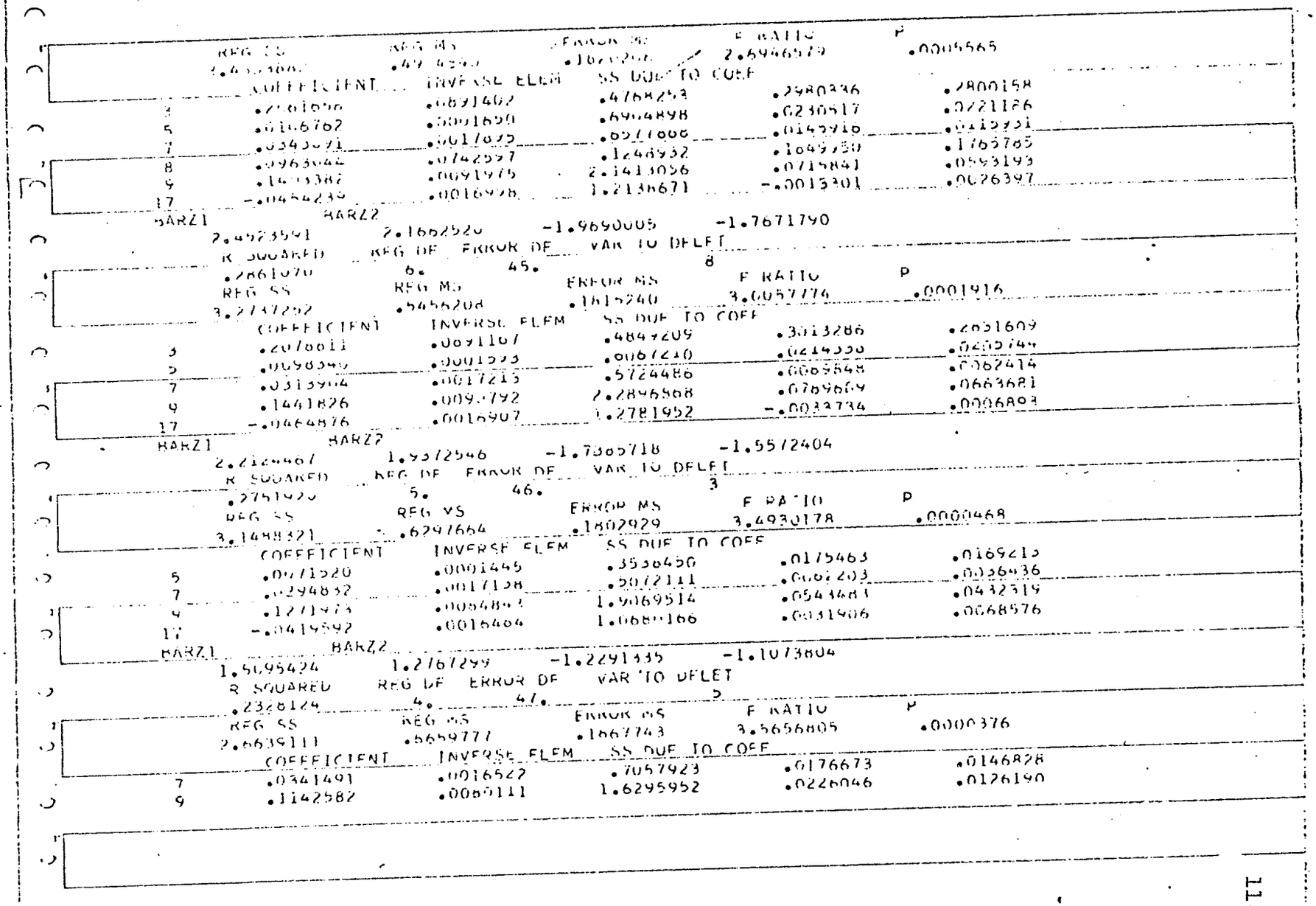
REG SS	REG MS	ERROR MS	F RATIO	P
3.9603943	.4950242	.1624[illegible]	2.9480281	.0049306

	COEFFICIENT	INVERSE FLEM	SS DUE TO COEF		
3	.1990634	.0986661	.5142589	.2713437	.2604741
5	.0101065	.0001675	.6115402	.0221560	.0212746
7	.0351127	.0018575	.5177506	.0069216	.0066913
8	.1213723	.0702634	.1804377	.2[illegible]4905	.2136618
9	.1272230	.0097743	1.6[illegible]	.0[illegible]8839	.0827324
12	.0111976	.0008294	.1[illegible]6050	.0[illegible]8086	.0[illegible]4
17	-.0[illegible]	.0017[illegible]	1.2332[illegible]	-.0019162	.0[illegible]861

PAR21 PAR22

2.[illegible] 2.4[illegible] -2.[illegible] -1.[illegible]

R SQUARED	REG DF	ERROR DF	VAR TO DELET
.3[illegible]	7.	44.	12



REG SS	REG MS	ERROR MS	F RATIO	P
[illegible]	.49[illegible]	.1[illegible]	2.6946579	.0005565

	COEFFICIENT	INVERSE ELEM	SS DUE TO COEF		
3	.2[illegible]1656	.0891402	.4768253	.2980336	.2800158
5	.0106762	.0001650	.6904898	.0230517	.0221126
7	.0343[illegible]71	.0017[illegible]5	.6577[illegible]08	.0145916	.0115931
8	.0963044	.0742597	.1248932	.1049750	.1765785
9	.1[illegible]3382	.0091975	2.1413056	.0715841	.0593193
17	-.0454239	.0016978	1.2138671	-.0013301	.0026397

BARZ1	BARZ2			
2.4523591	2.1662520	-1.9690005	-1.7671790	

R SQUARED	REG DF	ERROR DF	VAR TO DELET	
.2861070	6.	45.	8	

REG SS	REG MS	ERROR MS	F RATIO	P
3.2737252	.5456208	.1815240	3.0057774	.0001916

	COEFFICIENT	INVERSE ELEM	SS DUE TO COEF		
3	.2070011	.0091167	.4849209	.3013286	.2851609
5	.0098340	.0001593	.0067210	.0214330	.0205744
7	.0313904	.0017213	.5724486	.0089548	.0062414
9	.1441826	.0090792	2.2896868	.0789669	.0663681
17	-.0464876	.0016907	1.2781952	-.0033734	.0006893

BARZ1	BARZ2			
2.2124467	1.9372546	-1.7385718	-1.5572404	

R SQUARED	REG DF	ERROR DF	VAR TO DELET	
.2751920	5.	46.	3	

REG SS	REG MS	ERROR MS	F RATIO	P
3.1488321	.6297664	.1802929	3.4930178	.0000468

	COEFFICIENT	INVERSE ELEM	SS DUE TO COEF		
5	.0071520	.0001445	.3536450	.0175463	.0169213
7	.0294832	.0017138	.5072111	.0062203	.0036436
9	.1271973	.0084843	1.9069514	.0543483	.0432319
17	-.0419592	.0016404	1.0680166	.0031906	.0068576

BARZ1	BARZ2			
1.5095424	1.2767299	-1.2291335	-1.1073804	

R SQUARED	REG DF	ERROR DF	VAR TO DELET	
.2328124	4.	47.	5	

REG SS	REG MS	ERROR MS	F RATIO	P
2.6639111	.6659777	.1667743	3.5656805	.0000376

	COEFFICIENT	INVERSE ELEM	SS DUE TO COEF		
7	.0341491	.0016522	.7057923	.0176673	.0146828
9	.1142582	.0080111	1.6295952	.0226046	.0126190

```
17      -.0439208       .0016375        1.1779806       -.0016217       .0022166
BARZ1           BARZ2
        .6414465        .4395583        -.1642742       -.1170370
R SQUARED   REG DF  ERROR DF    VAR TO DELET.
.2018881        3.      48.             7
REG SS          REG MS          ERROR MS        F RATIO         P
2.3100562       .7700220        .1902550        4.0473153       .0000122
    COEFFICIENT     INVERSE ELEM    SS DUE TO COEF
9       .1128848        .0080084        1.5911864       .0218941        .0120285
17      -.0381752       .0015908        .9161045        .0013507        .0046870
BARZ1           BARZ2
        .2762990        .1360936        -.0690181       -.0517976
R SQUARED   REG DF  ERROR DF    VAR TO DELET
.1402054        2.      49.             17
REG SS          REG MS          ERROR MS        F RATIO         P
1.6042740       .8021370        .2067761        3.9951601       .0000131
    COEFFICIENT     INVERSE ELEM    SS DUE TO COEF
.0534200        .0041576        .6881696
R SQUARED   REG DF  ERROR DF    VAR TO DELET
.0011425        1.      50.             17
REG SS          REG MS          ERROR MS        F RATIO         P
.6881696        .6881696        .2150827        3.1995573       .0000895
```

Confirm Att-C

17 25 27 0 3 FOR MR ALCORN (G3 VS G4)

STEPWISE DISCRIMINANT ANALYSIS

INFORMATION MATRIX

*	1	2	3	4	5	6	7	8
1	296.057	173.327	2.307	-2.403	23.366	-8.307	34.980	-9.480
2	173.327	1744.520	35.077	-11.268	656.410	-242.076	123.556	-8.057
3	2.307	35.077	12.307	-1.153	-3.384	-20.307	3.230	-.230
4	-2.403	-11.268	-1.153	2.826	-50.557	9.153	-7.865	-.634
ER F8	.12676990E+057			Z				
5	23.366	656.410	-3.384	-50.557		-617.615	379.212	-119.711
6	-8.307	-242.076	-20.307	9.153	-617.615	442.307	-83.230	12.230
7	34.980	123.556	3.230	-7.865	379.212	-83.230	254.673	-14.173
8	-9.480	-8.057	-.230	-.634	-119.711	12.230	-14.173	10.673
9	56.480	-327.942	1.230	6.034	-457.286	82.769	-30.826	.326
10	102.461	-459.384	-13.538	6.769	-1608.070	261.538	-76.153	18.153
11	-75.403	-142.288	-7.153	4.826	1201.443	-137.846	9.134	-9.634
12	33.807	-252.423	-8.692	5.346	-358.888	-23.307	-20.269	33.269
13	25.442	-239.826	1.692	1.903	-270.883	23.307	-26.480	4.480
14	36.769	-84.307	25.769	4.615	-212.460	173.230	-99.923	4.923
15	71.096	-271.788	-12.153	.326	43.943	-113.846	18.634	12.865
16	126.653	-450.961	-16.846	11.423	-610.190	-128.153	91.116	2.884
17	24.863	-878.096	.615	12.942	-1193.519	202.384	-91.288	10.788

*	9	10	11	12	13	14	15	16
1	56.480	102.461	-75.403	33.807	25.442	36.769	71.096	126.653
2	-327.942	-459.384	-142.288	-252.423	-239.826	-84.307	-271.788	-450.961
3	1.230	-13.538	-7.153	-8.692	1.692	25.769	-12.153	-16.846
4	6.034	6.769	4.826	5.346	1.903	4.615	.326	11.423
5	-457.286	-1608.070	1201.443	-358.888	-270.883	-212.460	43.943	-610.190
6	82.769	261.538	-137.846	-23.307	23.307	173.230	-113.846	-128.153
7	-30.826	-76.153	9.134	-20.269	-26.480	-99.923	18.634	91.116
8	.326	18.153	-9.634	33.269	4.480	4.923	12.865	2.884
9	302.673	238.346	-57.365	161.711	201.019	168.077	28.134	295.115
10	238.346	845.653	-312.230	403.462	125.538	241.154	109.770	368.231
11	-57.365	-312.230	718.827	-40.653	-34.096	-183.384	111.327	93.424
12	161.730	403.462	-40.653	1003.308	158.192	130.770	234.347	585.154
13	201.019	125.538	-34.096	158.192	298.057	32.230	53.403	173.346
14	168.077	241.154	-183.384	130.770	32.230	1196.924	-510.384	-300.615
15	28.134	109.770	111.327	234.347	53.403	-510.384	950.827	717.424
16	295.115	368.231	93.424	585.154	173.346	-300.615	717.424	1622.077
17	454.211	629.924	-177.057	431.116	320.634	484.539	75.442	533.808

	17
1	24.865
2	-878.096
3	.615
4	12.942
5	-1193.519
6	202.384
7	-91.288
8	10.788
9	454.211
10	629.924
11	-177.057
12	441.116
13	328.638
14	464.539
15	75.442
16	533.808
17	1244.980

VAR	RIGHT SIDE	GRP1 MEAN	GRP2 MEAN
1	.6446155	2.1650000	2.1111111
2	-40.4038370	22.4800000	25.5925920
3	-2.6153835	1.2600000	1.4814814
4	.5576927	1.0800000	1.0370370
5	-121.9806700	111.6400000	121.0370300
6	10.6153845	6.4400000	9.2222222
7	-4.2115326	11.1200000	11.4444440
8	.7115385	1.2400000	1.1851851
9	1.2884620	5.8400000	5.7407407
10	39.0769300	23.6400000	20.6296290
11	-15.4422990	10.4400000	11.6296290
12	-10.1153810	41.4800000	42.2592590
13	7.8653854	5.6800000	5.0740740
14	6.4615402	33.6000000	33.1481480
15	-2.9422980	12.4400000	12.6666660
16	-2.8076884	27.0800000	27.2962960
17	21.5192330	10.8600000	9.2222222

TOT SUM OF SQRS = 12.98076900

	COEFFICIENT	INVERSE ELEM	SS DUE TO COEF		
1	.0215042	.0050710	.0829059	-.0485037	-.0500833
2	-.0208817	.0014049	.6355306	.0360262	.0382382
3	-.1903046	.1131756	.3199969	.1997736	.2144341

4	.2834346	.5841780	.1375183	.8766695	.8548343
5	-.0055826	.0001561	.1996149	.0207339	.0211639
6	-.0426975	.0041684	.4373492	.0353105	.0385998
7	.0189485	.0054236	.0662007	.0803089	.0788491
8	.0835539	.1666162	.0419002	.2616266	.2551878
9	-.1104633	.0137194	.8894029	-.0312536	-.0227438
10	.0576617	.0031840	1.0442365	.0831378	.0786957
11	-.0055471	.0023178	.0132753	.0217521	.0221795
12	-.0355162	.0017792	.7089563	.0022235	.0049595
13	.0758148	.0075653	.7597684	.0610797	.0552391
14	.0174543	.0017606	.1703253	.0417214	.0403768
15	-.0103672	.0023430	.0460466	.0251259	.0259261
16	.0002559	.0017762	.0000368	.0148428	.0148231
17	-.0081688	.0033361	.0200022	-.0242532	-.0236239

BARZ1 BARZ2

-.7802801 -1.1837544 -4.9703902 -5.0460415

R SQUARED	REG DF	ERROR DF	VAR TO DELET
.4034743	17.0000000	34	16

REG SS	REG MS	ERROR MS	F RATIO	P
5.2374069	.3080827	.2277459	1.3527473	.1616721

	COEFFICIENT	INVERSE ELEM	SS DUE TO COEF		
1	.0205136	.0050686	.0830215	-.0479574	-.0495377
2	-.0298652	.0013976	.6381533	.0369785	.0392792
3	-.1905283	.1118192	.3246404	.1868030	.2014808
4	.2838239	.5800667	.1388732	.8992455	.8773808
5	-.0055933	.0001530	.2044686	.0201118	.0205427
6	-.0427075	.0039491	.4635804	.0300052	.0333914
7	.0190425	.0051838	.0699518	.0857622	.0842952
8	.0833437	.1654166	.0419915	.2494385	.2430179
9	-.1102074	.0119447	1.0166237	-.0164166	-.0079267
10	.0576945	.0031549	1.0550632	.0850374	.0805928
11	-.0055038	.0022670	.0132618	.0242627	.0246867
12	-.0354361	.0016053	.7822294	.0068682	.0095981
13	.0757021	.0072210	.7936222	.0545454	.0487136
14	.0174136	.0017437	.1738968	.0393617	.0380202
15	-.0102580	.0018902	.0556699	.0326207	.0334109
17	-.0081330	.0033012	.0200364	-.0221739	-.0215474

Could these be the DISCRIM weights

BARZ1 BARZ2

-.7824192 -1.1858908 -4.9083723 -4.9641897

R SQUARED	REG DF	ERROR DF	VAR TO DELET

.4034714	16.0000000	35	11	
REG SS	REG MS	ERROR MS	F RATIO	P
5.2374703	.3273356	.2212199	1.4795501	.0994141

	COEFFICIENT	INVERSE ELEM	SS DUE TO COEF		
1	.0202960	.0050131	.0013262	-.0469980	-.0429616
2	-.0286111	.0012799	.0395474	.0314496	.0330231
3	-.1907409	.1118159	.5253749	.1677399	.2024340
4	.2600185	.5376570	.1257486	1.0041988	.9841578
5	-.0060399	.0001380	.2641973	.0220806	.0225459
6	-.0417172	.0038634	.4564571	.0253770	.0285008
7	.0189716	.0051834	.0694367	.0660749	.0841134
8	.0756099	.1609442	.0333211	.2833522	.2711074
9	-.1108095	.0119175	1.3303036	-.0137027	-.0092263
10	.0591405	.0029971	1.1672128	.0780369	.0740800
12	-.0353447	.0016546	.7785030	.0664653	.0691582
13	.0762165	.0072012	.0066569	.0522777	.0464042
14	.0177546	.0017350	.1816807	.0478584	.0364997
15	-.0104304	.0018878	.0564706	.0329400	.0337359
17	-.0075593	.0032706	.0174397	-.0247027	-.0241204

BARZ1 BARZ2

-.1245157 -1.1295579 -4.7755385 -4.8457780

.4024421	15.0000000	36	17	
REG SS	REG MS	ERROR MS	F RATIO	P
5.2240385	.3482692	.2154055	1.6163475	.0569929

	COEFFICIENT	INVERSE ELEM	SS DUE TO COEF		
1	.0210615	.0047984	.0076840	-.0442610	-.0401860
2	-.0286258	.0011627	.0340802	.0372036	.0392714
3	-.1952909	.1100240	.3447828	.1720402	.1870914
4	.2540490	.5356137	.1204990	.9846518	.9651106
5	-.0059585	.0001377	.2018330	.0223466	.0221056
6	-.0413170	.0036542	.4029084	.0260849	.0298678
7	.0186612	.0051734	.0658673	.0843438	.0833039
8	.0760213	.1600087	.0319016	.2719162	.2694917
9	-.1161117	.0103055	1.3062249	-.0310596	-.0321447
10	.0568334	.0026903	1.2002970	.0711771	.0668975
12	-.0361167	.0015705	.0340742	.0339424	.0361240
13	.0744561	.0070235	.7893903	.0469292	.0407893
14	.0161966	.0015986	.1643150	.0326365	.0313918
15	-.0106612	.0016835	.0603455	.0418590	.0326802

BARZ1 BARZ2

-.7805059	-1.1816044	-4.6834220	-4.7604989	

R SQUARED	REG DF	ERROR DF	VAR TO DELET
.4010985	14.0000000	37	6

REG SS	REG MS	ERROR MS	F RATIO	P
5.2805662	.3771833	.2101135	1.7699645	.0291116

	COEFFICIENT	INVERSE ELEM	SS DUE TO COEF		
1	.0176452	.0047607	.0008493	-.0505002	-.0378750
2	-.0254399	.0010203	.0226391	.0426019	.0426022
3	-.1970705	.1109419	.0513324	.1062203	.1814041
4	.2024963	.4654707	.0880867	.0721040	.0700087
5	-.0066950	.0001233	.3632485	.0139960	.0201118
6	-.0388681	.0036900	.4387411	.0338316	.0331179
7	.1461666	.0047574	.0447300	.0696557	.0667720
8	-.1175992	.0102502	1.3462775	-.1364962	-.0274398
10	.0561306	.0026773	1.1761811	.0684519	.0541278
12	-.0322337	.0013512	.8174051	.0147106	.0172709
13	.0752374	.0076074	.8078038	.0494433	.0436472
14	.0167078	.0015707	1.1700803	.0357193	.0330479
15	.0390223	.0018126	.0449076	.0379606	.0326756

BAR21	BAR22			
-.9220697	-1.3202486	-4.4210487	-4.5078134	

R SQUARED	REG DF	ERROR DF	VAR TO DELET
.3981787	14.0000000	38	7

REG SS	REG MS	ERROR MS	F RATIO	P
5.1666666	.3975897	.2059916	1.9339747	.0140704

	COEFFICIENT	INVERSE ELEM	SS DUE TO COEF		
1	.0181605	.0047406	.0767972	-.0506773	-.0521457
2	-.0256657	.0010753	.6036861	.0428760	.0448378
3	-.1974113	.1103373	.3225333	.1049956	.1790035
4	.2005720	.4629818	.0000052	.0300019	.0622187
5	-.0064060	.0001224	.3446446	.0205972	.0210969
6	-.0401017	.0036620	.4391414	.0299210	.0340103
7	-.1192483	.0101396	1.3110415	-.0254149	-.0109366
10	.0559488	.0026705	1.1695018	.0672818	.0632717
12	-.0329294	.0013471	.8057364	.0101003	.0107031
13	.0733331	.0062205	.7764342	.0403291	.0346796
14	.0153757	.0015434	1.1539679	.0252494	.0270649
15	-.0376004	.0018051	.0510576	.0352107	.0339503

BAR21	BAR22		
-1.1364055	-1.5311579	-3.9075948	-4.0103450

Discrim with Signif. removal at .01% [illegible]

G_3 & G_4

R SQUARED	REG DF	ERROR DF	VAR TO DELET
.3947324	12.0000000	39	15

REG SS	REG MS	ERROR MS	F RATIO	P
5.1219310	.4269942	.2014573	2.1196264	.0062153

	COEFFICIENT	INVERSE ELEM	SS DUE TO COEF		
1	.0157202	.0043129	.0248029	-.0384495	-.0396611
2	-.0235316	.0010020	.0526030	.0357827	.0375453
3	-.2038284	.1097346	.3766109	.1681311	.2038335
4	.1601077	.4004575	.0581596	.0767224	.0663864
5	-.0060442	.0001215	.3666152	.0213609	.0216769
6	-.0381769	.0035894	.4060420	.0228613	.0256023
9	-.1147491	.0101293	1.2920921	-.0273206	-.0184882
10	.0942696	.0026213	1.1235362	.0731400	.0693598
12	-.0344160	.0012715	.9581607	.0234544	.0261442
13	.0741064	.0069149	.7941972	.0374990	.0317300
14	.0200321	.0011108	.3617947	.0111715	.0026283

BARZ1	BARZ2			
-.8951555	-1.3999450	-3.5641911	-3.6523702	

R SQUARED	REG DF	ERROR DF	VAR TO DELET
.3907991	11.0000000	40	1

REG SS	REG MS	ERROR MS	F RATIO	P
5.0728739	.4611703	.1976974	2.3327082	.0025167

	COEFFICIENT	INVERSE ELEM	SS DUE TO COEF		
2	-.0209202	.0008203	.0020303	.0401951	.0427003
3	-.2002240	.1053059	.3988323	.1991237	.2131724
4	.1462245	.4369405	.0489348	.7106851	.6994004
5	-.0064437	.0001193	.3372451	.0205039	.0204426
6	-.0385190	.0035819	.4206491	.0244313	.0274218
9	-.1090421	.0095303	1.2466705	-.0412209	-.0328206
10	.0974096	.0024322	1.3290621	.0659303	.0619117
12	-.0351721	.0012706	.9735880	.0240804	.0267900
13	.0744439	.0069169	.7809588	.0391196	.0334617
14	.0196441	.0011080	.3482583	.0121201	.0106068

BARZ1	BARZ2			
-.8151590	-1.2017363	-3.4[illegible]4073	-3.4780951	

R SQUARED	REG DF	ERROR DF	VAR TO DELET
.3865773	10.0000000	41	4

REG SS	REG MS	ERROR MS	F RATIO	P
5.0180708	.5018070	.1942121	2.5838086	.0009321

	COEFFICIENT	INVERSE ELEM	SS DUE TO COEF		
2	-.0205326	.0008200	.5103454	.0276875	.0292693

3	-.2215035	.1058146	.4636771	.1350728	.1521367
5	-.0069302	.0001122	.4276911	.0176532	.0181871
6	-.0371607	.0035257	.3916682	.0324909	.0453536
9	-.1043635	.0090867	1.1984825	-.0184820	-.0104421
10	.0554800	.0023533	1.3068298	.0563114	.0520374
12	-.0345267	.0012641	.9445134	.0272171	.0496769
13	.0709902	.0067038	.7420806	.0271941	.0217252
14	.0194779	.0011069	.3569357	.0132562	.0117248

BARZ1 BARZ2

-1.0529871 -1.4357946 -2.8224740 -2.9183382

R SQUARED REG DF ERROR DF VAR TO DELET

.3828075 9.0000000 42 14

REG SS REG MS ERROR MS F RATIO P

4.9691362 .5521262 .1907531 2.8944539 .0033082

COEFFICIENT INVERSE ELEM SS DUE TO COEF

2	-.0192545	.0008215	.4512848	.0285399	.0400232
3	-.1634908	.0963863	.2773136	.1737605	.1863553
5	-.0059042	.0001077	.3261782	.0106041	.0187451
6	-.0278852	.0032847	.2367276	.0506786	.0400248
9	-.0902872	.0085536	.9552557	-.0040948	-.0021343
10	.0582205	.0023343	1.4520950	.0561490	.0536530
12	-.0322099	.0012470	.8319182	.0287622	.0412436
13	.0620589	.0065604	.5870534	.0212360	.0164571

BARZ1 BARZ2

-1.2910350 -1.6463437 -2.7430784 -2.8562423

R SQUARED REG DF ERROR DF VAR TO DELET

.3553087 8.0000000 43 6

REG SS REG MS ERROR MS F RATIO P

4.6121000 .5765225 .1940163 2.9623239 .0062380

COEFFICIENT INVERSE ELEM SS DUE TO COEF

2	-.0179743	.0008189	.3966136	.0267644	.0281490
3	-.1247329	.0900407	.1727915	.1200033	.1296124
5	-.0069694	.0001024	.2342195	.0164766	.0172514
9	-.0982278	.0088696	1.0511644	-.0034705	.0031751
10	.0522459	.0021634	1.2500947	.0664770	.0824022
12	-.0264566	.0011676	.6819363	.0235334	.0297516
13	.0647016	.0065309	.6463995	.0175725	.0172

BARZ1 BARZ2

-.9026746 -1.2771666 -2.9[illegible] -2.9[illegible]

R SQUARED REG DF ERR VAR TO DELET

.3370719	7.0000000	44	3	
REG SS	REG MS	ERROR MS	F RATIO	P
4.[illegible]	.6290647	.1955753	3.1960300	.0001132

	COEFFICIENT	INVERSE ELEM	SS DUE TO COEF		
2	-.0299667	.0007627	.5763255	.0296432	.0312585
5	-.0046762	.0001049	.2083762	.0165945	.0169946
9	-.0995044	.0063075	1.1915347	.0014097	.0071553
10	.0544810	.0021545	1.3776467	.0642756	.0600787
12	-.0277510	.0011847	.6500244	.0228785	.0250163
13	.0640338	.0065203	.6280840	.0182150	.0132[illegible]

BARZ1 BARZ2

-.7964551 -1.1202158 -2.4[illegible]75 -[illegible]2550

R SQUARED	REG DF	ERROR DF	VAR TO DELET	
.3237606	6.0000000	45	5	
REG SS	REG MS	ERROR MS	F RATIO	P
4.2[illegible]616	.7[illegible]4436	.19[illegible]	3.[illegible]7467	.0000382

	COEFFICIENT	INVERSE ELEM	SS DUE TO COEF		
2	-.[illegible]1796	.0007577	.5359582	.0268503	.0284049
5	-.[illegible]927	.0083075	1.1936560	.0018032	.0094755
10	.0639608	.0017232	2.3739775	.0[illegible]4352	.0257078
12	-.0288046	.0011794	.7034920	.0265173	.0288363
13	.0656082	.0065155	.6515[illegible]7	.0124150	.0071561

BARZ1 BARZ2

-.0569983 -.3647062 -1.1233377 -1.1396311

R SQUARED	REG DF	ERROR DF	VAR TO DELET	
.3077078	5.0000000	46	2	
REG SS	REG MS	ERROR MS	F RATIO	P
3.[illegible]	.7988570	.19[illegible]3983	-.0891881	.0000121

	COEFFICIENT	INVERSE ELEM	SS DUE TO COEF		
9	-.0842918	.0076[illegible]7	.9024499	-.0165556	-.0120620
10	.07[illegible]0269	.0016546	2.9537024	.0225639	.0171693
12	-.0285366	.0011772	.6905307	.0262607	.0284[illegible]1
13	.0688889	.0064901	.7305375	.0081297	.0028227

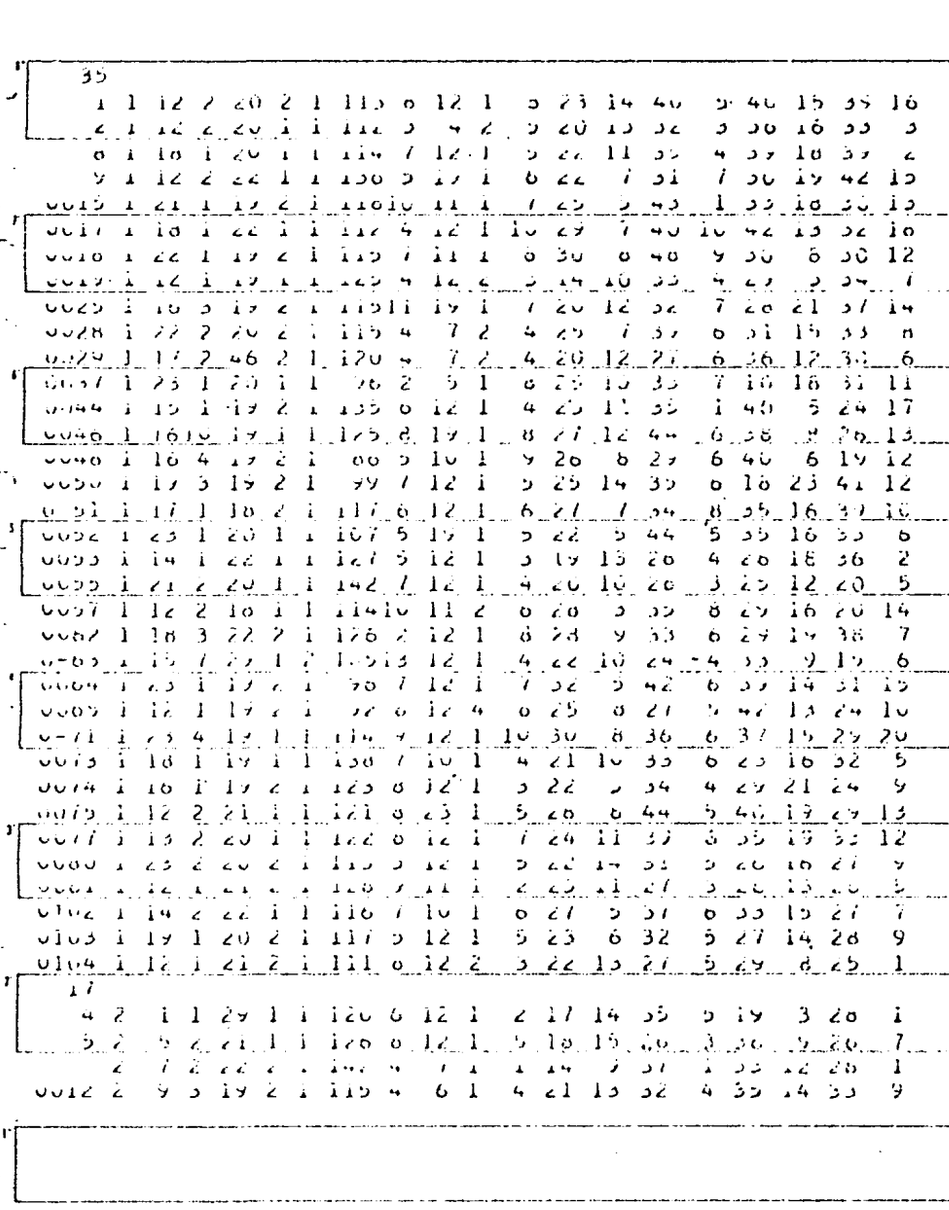
BARZ1 BARZ2

.6561288 .3897095 -.6489366 -.6086724

R SQUARED	REG DF	ERROR DF	VAR TO DELET	
.2604192	4.0000000	47	12	
REG SS	REG MS	ERROR MS	F RATIO	P
3.4[illegible]83267	.8645816	.2026[illegible]51	4.2673228	.0000082

	COEFFICIENT	INVERSE ELEM	SS DUE TO COEF		
9	-.0863086	.0078608	.9469133	-.0166996	-.0100506

```
10        .0618945        .0015508        2.4575656        .0300477        .0252795
13        .0585287        .0063407        .5402566        .0176636        .0131548
BARZ1                BARZ2
      1.2915365        1.0783638        -.3965642        -.2652791
      R SQUARED          REG DF          ERROR DF        VAR TO DELET
      .2132228        3.0000000          48                13
      REG SS           REG MS          ERROR MS         F RATIO          P
      2.7677962        .9225987        .2127702        4.3361261        .0000069
          COEFFICIENT      INVERSE ELEM     SS DUE TO COEF
 4      -.0432873        .0044401        .4219120        -.0037144        -.0003801
10        .0584310        .0015366        2.2218673        .0290024        .0245011
BARZ1                BARZ2
      1.1285417        .9569367        -.3319629        -.2516333
      R SQUARED          REG DF          ERROR DF        VAR TO DELET
      .1716030        2.0000000          49                9
      REG SS           REG MS          ERROR MS         F RATIO          P
      2.2275395        1.1137697        .2194536        5.0751928        .0000019
          COEFFICIENT      INVERSE ELEM     SS DUE TO COEF
      .0462069        .0011824        1.8056273
      R SQUARED          REG DF          ERROR DF        VAR TO DELET
      .1391001        1.0000000          50
      REG SS           REG MS          ERROR MS         F RATIO          P
      1.8056273        1.8056273        .2235028        8.0787666        0.0000000
```



E1 + E2 5's

Phase I

```
  35
   1 1 12 2 20 2 1 115 6 12 1  5 23 14 40  5 40 15 35 16
   2 1 12 2 20 1 1 112 3  4 2  5 20 13 32  3 30 16 33  3
   8 1 18 1 20 1 1 114 7 12 1  5 22 11 35  4 39 18 39  2
   9 1 12 2 22 1 1 130 5 17 1  6 22  7 31  7 30 19 42 15
0015 1 21 1 19 2 1 118 10 11 1  7 25  5 43  1 33 18 30 13
0017 1 18 1 22 1 1 112 4 12 1 10 29  7 40 10 42 13 32 16
0018 1 22 1 19 2 1 115 7 11 1  8 30  8 40  9 30  8 30 12
0019 1 12 1 19 1 1 125 4 12 2  3 14 10 33  4 29  3 34  7
0025 1 16 3 19 2 1 115 11 19 1  7 20 12 32  7 28 21 37 14
0028 1 22 2 20 2 1 115 4  7 2  4 25  7 37  6 31 15 33  8
0029 1 17 2 46 2 1 120 4  7 2  4 20 12 27  6 36 12 30  6
0037 1 23 1 20 1 1  76 2  5 1  8 25 10 33  7 10 18 31 11
0044 1 15 1 19 2 1 135 6 12 1  4 25 11 35  1 40  5 24 17
0046 1 16 10 19 1 1 125 8 19 1  8 27 12 44  6 38  8 26 13
0048 1 16 4 19 2 1  80 5 10 1  9 26  8 29  6 40  6 19 12
0050 1 17 3 19 2 1  99 7 12 1  5 25 14 35  6 18 23 41 12
0051 1 17 1 18 2 1 117 6 12 1  6 27  7 34  8 35 16 39 10
0052 1 23 1 20 1 1 107 5 19 1  5 22  5 44  5 35 16 33  6
0053 1 14 1 22 1 1 127 5 12 1  3 19 13 26  4 26 18 36  2
0055 1 21 2 20 1 1 142 7 12 1  4 20 10 26  3 25 12 20  5
0057 1 12 2 18 1 1 114 10 11 2  6 28  3 35  8 29 16 20 14
0062 1 18 3 22 2 1 126 2 12 1  8 28  9 33  6 29 19 38  7
0063 1 15 7 29 1 2 105 13 12 1  4 22 10 24  4 33  9 15  6
0064 1 23 1 19 2 1  98 7 12 1  7 32  5 42  6 39 14 31 15
0069 1 12 1 19 2 1  92 6 12 4  6 25  8 27  5 42 13 24 10
0071 1 23 4 19 1 1 114 9 12 1 10 30  8 36  6 37 15 29 20
0073 1 18 1 19 1 1 138 7 10 1  4 21 10 33  6 23 16 32  5
0074 1 16 1 19 2 1 123 8 12 1  3 22  5 34  4 29 21 24  9
0075 1 12 2 21 1 1 121 8 23 1  5 26  8 44  5 40 19 29 13
0077 1 13 2 20 1 1 122 8 12 1  7 24 11 39  6 35 19 33 12
0080 1 23 2 20 2 1 115 5 12 1  5 22 14 31  5 26 16 27  9
0081 1 12 1 21 2 1 128 9 11 1  2 25 11 27  3 26 13 26  5
0102 1 14 2 22 1 1 116 7 10 1  6 27  5 37  6 33 15 27  7
0103 1 19 1 20 2 1 117 5 12 1  5 23  6 32  5 27 14 28  9
0104 1 12 1 21 2 1 111 8 12 2  3 22 13 27  5 29  8 25  1
  17
   4 2  1 1 29 1 1 120 6 12 1  2 17 14 35  5 19  3 28  1
   5 2  5 2 21 1 1 126 8 12 1  5 18 15 26  3 36  9 26  7
     2  7 2 22 2 1 142 4  7 1  1 14  9 37  1 33 12 28  1
0012 2  9 3 19 2 1 115 4  6 1  4 21 13 32  4 35 14 33  9
```

Predictor Vs are 13

1, 3, 4, 5, 6, 7, 8, 9, 12, 14, 15, 16, 17

Vs to delete, in order:

(1) 13

(2) 10

(3) 2

(4) 11

```
0016 2  9 1 22 2 1  99 4 12 1  4 27  4 33  6 21 16 24  5
0022 2  4 3 21 1 1  90 8 11 2  9 25 11 32  9 29 13 25 10
0023 2  7 1 20 2 1 112 3 11 1  4 23 14 32  4 37 15 30  9
0034 2  9 1 20 2 1 100 8 12 1  2 27  7 29  3 26 12 23 12
0039 2  7 2 20 1 1 118 7 12 1  5 20  8 30  1 29 12 30 12
0049 2 11 1 19 1 1 121 10 12 1  6 27  6 34  1 33 14 35 10
0049 2 10 3 19 2 1 105 7 12 2  9 29  4 30  9 41 16 29 28
0054 2  6 1 20 1 1 120 7 12 1  8 22 13 27  4 33 14 31 11
0 59 2  7 1 19 2 1  88 8 12 1  5 25  6 33  7 41 17 30 13
0066 2  8 1 20 1 1 111 12  6 1  4 24 15 32  5 15 17 30  8
0-70 2  6 1 21 2 2  97 11 11 1  3 26 11 34  5 35 14 33 10
0078 2  6 6 20 1 1 112 9  5 2  6 21 13 29  9 28 14 35 16
0086 2  9 5 20 1 1 119 7 12 1  4 27  9 35  4 22 16 31 11
2222                (END OF JOB)
```

25																					
	7	3	12	1	22	2	1	121	2	12	1	5	17	15	30	4	35	11	23	10	
0011	3	12	1	21	1	1	130	4	12	1	7	25	7	29	7	36	10	25	16		
0014	3	13	2	21	2	1	141	2	12	1	5	16	16	38	8	37	7	28	9		
0026	3	18	2	22	1	1	9610	12	2		6	22	12	29	6	37	4	15	10		
0027	3	13	2	22	1	1	127	8	11	1	4	19	14	26	6	24	14	26	7		
0031	3	23	2	19	1	1	110	8	12	1	7	29	5	33	8	34	12	30	17		
0032	3	20	2	24	1	1	109	2	21	1	4	22	11	30	3	19	20	39	5		
0033	3	23	1	21	2	1	10010	12	1		5	25	7	34	7	36	10	27	19		
0035	3	22	1	19	1	2	11	7	4	1	6	26	15	36	5	31	16	33	14		
0036	3	20	1	21	1	1	92	5	12	1	7	25	10	29	7	37	8	22	10		
0038	3	23	2	24	1	1	126	8	11	1	5	23	4	35	5	30	14	20	6		
0041	3	17	1	19	1	2	9911	11	1	10	27	11	32	9	39	8	31	18			
0042	3	23	2	23	1	1	85	7	11	3	9	32	6	31	8	37	15	39	18		
0045	3	14	2	21	2	1	103	7	12	1	7	23	10	27	5	40	15	26	13		
0058	3	21	1	21	1	1	12410	11	2		5	24	13	27	2	32	15	21	9		
0067	3	16	1	23	2	1	92	7	11	1	7	26	5	25	7	34	10	29	14		
0068	3	13	1	18	1	1	11111	4	2		4	28	10	30	6	36	11	21	10		
0069	3	13	2	20	1	1	126	2	12	1	8	22	15	36	10	35	16	34	9		
0079	3	22	10	20	1	1	9811	11	1	10	29	7	34	7	41	15	35	18			
0086	3	16	1	19	1	1	107	8	10	1	8	25	8	27	7	29	15	27	7		
0087	3	12	2	27	1	1	130	2	10	1	4	16	10	28	4	26	15	25	3		
0088	3	13	1	25	2	1	120	2	10	2	2	19	14	34	3	31	13	24	2		
0090	3	18	2	30	1	1	129	2	10	1	5	22	12	28	1	33	9	27	8		
0091	3	12	10	30	2	1	108	2	12	1	6	29	10	30	6	36	15	30	9		
0093	3	14	1	30	1	1	130	3	12	1	4	16	16	29	5	38	8	22	11		
27																					
	3	4	10	2	26	2	1	13310	11	1		6	22	11	34	3	39	16	30	10	
0010	4	7	1	24	1	1	116	3	12	1	6	19	13	34	4	37	9	34	11		
0014	4	9	1	20	2	1	114	2	6	2	10	21	9	36	10	35	15	29	18		
0020	4	7	1	22	1	1	143	4	12	1	1	20	13	31	1	30	13	28	4		
0021	4	9	1	21	2	1	127	5	11	2	8	26	15	30	6	31	19	39	13		
0024	4	10	1	22	1	1	99	7	12	2	8	24	16	33	10	24	16	29	15		
0030	4	10	1	22	1	1	120	6	11	1	10	25	11	36	6	36	12	27	17		
0043	4	10	1	19	2	1	127	3	12	1	9	21	14	33	7	35	10	34	17		
0047	4	11	10	20	1	1	139	7	12	1	9	21	15	32	8	29	18	31	14		
0050	4	0	1	22	1	1	118	4	11	1	5	20	18	33	7	29	17	28	8		
0060	4	6	1	21	2	1	116	5	12	1	5	23	12	35	1	37	11	23	10		
0061	4	7	2	23	1	2	123	6	11	1	6	20	14	33	6	35	14	29	11		
0072	4	1	1	23	1	1	123	8	12	1	5	20	14	33	4	30	10	32	7		
0076	4	9	1	21	1	1	131	7	12	1	5	23	15	36	4	39	13	24	7		

G3 G4

(G1 + G2)

13 Vs

0082	4	6	2	22	2	1	140	7	12	1	7	20	12	28	6	42	2	13	12
0083	4	2	1	24	1	1	10210		10	1	7	20	11	24	4	31	4	25	4
0084	4	10	2	19	2	1	128	3	12	1	9	23	4	36	8	36	16	30	15
0089	4	6	9	42	2	1	105	4	12	1	5	22	1	32	5	37	8	24	4
0092	4	9		27	1	1	118	5	10	2	2	16	13	30	4	36	17	25	5
0094	4	8	2	35	2	1	100	8	12	2	3	17	8	31	1	39	11	21	3
0095	4	5	7	33	1	1	135	2	12	1	4	20	16	35	3	26	15	31	0
0096	4	11	1	47	2	1	116	6	12	1	2	20	10	27	4	30	4	15	0
0097	4	7	1	28	2	1	115	2	12	1	5	19	16	32	8	27	23	30	8
98	4	10	2	19	2	1	96	3	12	1	4	20	12	29	4	28	12	24	10
0099	4	3	1	29	1	1	128	3	12	1	2	11	7	29	4	29	11	24	2
0100	4	9	2	26	1	1	121	5	12	1	3	27	7	33	1	38	15	30	13
0101	4	5	2	35	2	1	140	2	12	1	5	15	13	28	6	36	11	28	5

0 = Zero Ø = Alpha O
1 = One I = Alpha I
2 = Two Z = Alpha Z

Space — Blank Column

SOUTHERN ILLINOIS UNIVERSITY
DATA PROCESSING AND COMPUTING CENTER
CARBONDALE—EDWARDSVILLE—V.T.I.
GENERAL PURPOSE DATA FORM

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N=25

I.D.	Group	Def. Var.	1 Blo	2 C.A.	3 Sex	4 Race	5 IQ	6 SES	7 Geo. Area	8 Rel.	9 Anxiety	10 Doc Mat	11 Rigid	12 Aca.	13 Ego	14 Con Flo.	15 Exc. Int.	16 Impul.	17 Neur.
0001	E2	9	02	51	1	1	118	5	12	1	5	31	3	36	7	24	13	35	10
0002	C1	13	1	26	2	1	91	5	12	2	6	24	14	30	5	35	12	28	10
0003	E1	20	3	21	1	1	108	9	10	2	6	23	13	36	4	29	14	33	5
0004	E1	17	1	47	2	1	99	7	12	1	6	23	9	34	4	36	8	32	11
0005	G1	20	1	23	2	1	111	8	11	1	6	28	5	39	8	35	16	27	12
0006	E2	12	1	38	2	1	107	5	12	1	3	16	8	31	3	29	10	21	1
0007	G2	5	2	21	2	1	124	11	12	1	6	23	10	36	8	40	17	35	18
0008	E1	17	1	22	1	1	107	5	12	1	10	24	14	25	6	28	9	29	10
0009	E2	5	1	20	1	1	132	11	12	1	6	25	8	30	6	43	12	27	10
0010	E1	23	1	23	2	1	107	11	12	1	1	25	9	28	3	34	18	25	5
0011	E1	19	5	21	1	1	106	8	12	1	6	29	13	36	6	40	13	31	18
0012	G1	20	3	62	1	1	119	5	12	1	6	28	6	30	6	47	8	17	14
0013	G2	10	2	23	1	1	101	11	12	2	6	28	9	40	6	26	18	38	14
0014	G2	3	1	26	1	1	94	8	21	1	6	25	8	30	6	36	16	42	5
0015	G2	4	1	22	2	1	122	5	12	1	6	25	14	32	6	33	10	28	11
0016	G1	23	6	48	2	1	124	5	12	2	6	28	3	40	6	40	9	24	16
0017	E1	23	1	22	2	1	126	8	12	1	6	18	14	27	6	26	12	23	6
0018	E2	7	1	20	1	1	108	9	12	4	6	23	7	34	6	46	9	24	13
0019	G1	13	3	20	2	1	121	9	12	1	1	24	12	36	1	28	11	30	11
0020	E1	23	1	21	1	1	110	6	12	1	1	27	15	41	1	34	16	40	19
0021	G2	7	1	21	2	1	116	5	12	2	6	30	5	39	6	39	15	32	9
0022	E1	18	2	22	1	1	111	8	12	1	6	24	9	35	6	31	14	28	12
0023	E1	23	1	68	2	1	99	5	12	2	6	28	4	39	6	35	7	33	22
0024	E1	5	2	21	1	1	131	5	12	1	6	27	10	32	6	39	19	30	13
0025	E2	1	1	25	1	1	118	9	4	2	6	21	12	31	6	35	11	31	7

1-26919-9

Title: 15

E/Pig X
E/Mouse X

G/Pig X
G/Mouse X

16 E
9 G

0 = Zero Ø = Alpha O
1 = One I = Alpha I
2 = Two Z = Alpha Z

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N=25

Hits = 12

Space Blank Column

I.O. #	GROUP	DEP. VAR.	BO	C.A.	SEX	RACE	IQ	SES	GEO. AREA	REL.	IPAT ANXIETY	SS OCC MAT	Fx RIGID	Rs ACQ.	IPAT ECO	ILPF CONFIO	EYER. EXT. INT.	PP₂ IMPUL.	EYER. NEUR.
0026	G1	23	1	21	1	1	115	7	11	1	7	21	8	35	4	39	15	28	9
0027	G1	23	5	20	2	1	98	11	12	1	7	24	14	30	3	34	9	24	15
0028	G2	11	3	21	1	1	115	2	12	1	6	21	7	38	5	37	2	23	6
0029	G2	9	1	20	2	1	106	5	12	1	4	21	7	29	6	33	12	26	6
0030	E1	22	1	19	2	1	110	4	12	1	8	27	10	35	8	30	19	31	15
0031	G2	6	1	20	2	1	107	7	10	2	5	16	20	20	6	38	15	35	3
0032	E1	16	4	19	2	1	108	5	12	1	10	27	12	42	10	45	16	33	22
0033	G2	6	3	23	1	1	111	6	11	4	7	27	8	44	10	49	8	30	20
0034	E2	0	2	21	2	1	126	3	12	1	8	27	11	43	9	38	19	34	20
0035	E2	10	1	21	2	1	117	7	12	1	6	26	7	36	7	36	10	22	13
0036	G1	21	2	20	2	1	106	3	12	1	6	22	10	38	6	40	21	37	11
0037	E1	15	1	20	2	1	112	2	11	1	8	24	13	32	10	29	8	32	19
0038	E1	14	1	22	1	1	139	3	10	4	4	15	15	31	6	34	8	27	8
0039	E1	13	1	22	1	1	116	2	10	1	5	26	10	26	3	35	20	36	11
0040	E2	3	1	23	2	2	121	4	19	1	1	22	9	31	1	24	12	29	4
0041	E2	5	1	22	2	1	125	5	12	1	5	24	9	33	4	38	3	31	6
0042	E1	22	1	27	2	1	115	2	11	1	7	20	12	32	5	47	14	23	13
0043	G2	5	3	19	1	2	110	12	11	1	7	28	7	34	5	44	16	33	9
0044	G2	13	1	15	2	1	123	7	12	1	7	23	14	33	9	32	16	31	12
0045	G2	10	2	14	2	1	114	6	12	2	7	25	5	36	4	37	11	29	15
0046	E1	14	1	15	2	1	115	6	12	1	9	26	11	41	10	29	14	33	16
0047	G1	17	2	15	2	1	117	8	12	2	5	23	9	38	5	33	18	31	13
0048	G2	2	1	22	2	1	128	4	12	1	10	14	7	43	8	46	10	24	17
0049	E1	19	1	15	1	1	125	6	12	2	9	27	11	36	8	32	13	25	19
0050	E1	13	2	14	2	1	119	6	12	2	5	29	11	39	7	33	16	28	11

12 E
13 G

1-[illegible]-9

0 = Zero Ø = Alpha O
1 = One I = Alpha I
2 = Two Z = Alpha Z

SOUTHERN ILLINOIS UNIVERSITY
DATA PROCESSING AND COMPUTING CENTER
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GENERAL PURPOSE DATA FORM

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Space Block Column

N=25

Hits = 13

16 E
9 G

ID #	GROUP	DEP VAR	BO	CA	SEX	RACE	IQ	SES	GEO. AREA	REL.	IPAT Anxiety	SS DOG MAT	Fx Rigid	RS ACQ.	IPAT EGO	ILFF CONFIO.	EYEE. EXT/INT.	PPx IMPUL.	EYEE. NEUR.
0051	E1	23	1	15	1	1	115	10	12	2	7	28	10	40	4	30	13	31	4
0052	E1	23	3	14	2	1	112	3	12	1	5	23	14	28	6	23	11	24	11
0053	E1	14	1	14	1	1	110	7	12	1	6	36	3	36	9	33	14	26	14
0054	E2	10	1	23	1	1	121	8	12	1	5	19	14	27	4	36	8	21	7
0055	E2	12	1	27	1	1	104	10	12	1	6	20	12	34	6	25	9	30	10
0056	E1	14	6	36	2	1	118	3	12	1	8	28	13	30	8	46	1	14	21
0057	E1	13	1	30	1	2	99	12	10	1	5	21	9	25	5	33	9	24	4
0058	G2	9	2	20	1	2	116	8	12	1	7	23	10	40	4	25	15	30	12
0059	G2	11	3	18	2	2	111	9	19	1	10	24	8	42	10	36	7	23	20
0060	E2	8	1	21	1	1	140	7	18	2	6	11	14	33	8	29	15	29	3
0061	G2	5	1	21	1	1	117	3	11	1	5	22	15	28	6	28	17	26	5
0062	G2	8	1	22	2	1	112	10	12	1	4	17	11	29	4	34	14	23	9
0063	[illegible]	[illegible]	1	27	1	1	121	7	11	1	7	22	9	33	6	39	15	27	7
0064	[illegible]	[illegible]	1	23	1	1	127	6	19	1	5	23	6	33	4	36	9	26	8
0065	[illegible]	11	2	21	1	1	124	5	12	1	3	23	10	38	3	34	14	33	8
0066	E1	21	2	19	1	1	138	7	12	2	10	31	11	37	10	45	14	21	20
0067	E1	21	1	32	1	1	95	5	11	1	8	28	8	43	7	37	13	30	20
0068	E1	18	2	22	1	1	119	6	10	2	3	22	9	29	4	31	17	33	5
0069	G1	14	5	20	1	1	134	3	12	1	3	18	9	31	4	29	12	31	8
0070	G2	4	5	21	2	1	107	4	11	1	7	27	13	31	3	38	7	22	7
0071	E1	22	1	20	1	1	111	8	6	2	3	20	12	29	3	28	13	29	6
0072	E1	19	1	23	1	1	105	2	12	1	3	21	10	23	4	34	17	33	11
0073	E2	18	1	22	1	1	100	2	12	1	10	30	7	46	10	36	12	33	22
0074	G2	2	2	41	2	1	107	9	12	1	3	21	6	32	1	48	10	26	4
0075	G2	9	2	20	1	1	117	8	12	1	8	28	5	35	8	42	5	19	22

1-26919-9

0 = Zero ∅ = Alpha O
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DATA PROCESSING AND COMPUTING CENTER
CARBONDALE - EDWARDSVILLE—V.T.I.
GENERAL PURPOSE DATA FORM

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Space = Blank Column

N=25

Hits = 17

I.D. #	Group	Occ. Var.	Bo	C.A.	Sex	Race	IQ	SES	Geo Area	Rel.	IPAT Anxiety	SS Occ Mat	F_x Recio	RS Acq.	IPAT Ego.	ILPF Con Flo	Extr. / Int.	PP_2 Impul.	Neur. Extr. / Neur.
006	G1	17	5	18	1	1	114	7	12	1	7	30	4 8	38	4	36	11	32	11
007	E1	23	1	20	1	1	99	2	10	1	7	23	8	35	5	30	12	27	9
008	E2	14	1	19	1	1	130	5	11	1	6	24	11	31	5	41	9	30	10
009	E2	5	5	20	1	1	98	10	4	1	4	23	12	33	10	24	15	33	7
020	E2	11	2	22	1	1	118	4	12	1	7	25	10	26	9	30	19	34	10
021	G1	14	3	20	1	1	123	3	12	1	4	26	12	37	4	32	13	23	4
022	E1	23	2	21	1	1	119	8	12	1	8	31	6	37	6	32	17	30	16
023	G1	12	2	19	2	1	106	8	12	1	3	25	4	31	3	28	14	29	5
024	G1	23	1	20	2	1	107	3	12	1	8	29	7	32	4	29	11	29	21
025	G1	15	1	19	2	1	117	6	12	1	6	25	9	35	3	36	13	31	10
026	G1	17	1	18	2	1	95	4	4	1	5	22	12	24	4	33	8	27	7
027	E1	23	2	18	2	1	93	6	11	1	7	23	9	29	8	46	14	28	15
028	E2	6	1	20	2	2	100	11	19	2	6	27	16	41	5	40	13	27	15
029	G1	15	2	20	2	1	124	3	11	1	6	23	10	33	9	37	14	32	14
030	G1	14	2	21	2	1	117	5	12	2	9	21	13	25	8	39	15	30	12
031	E2	10	4	20	1	1	127	7	12	1	6	26	10	42	8	30	19	37	11
032	G1	22	1	20	2	1	94	6	12	1	5	22	11	28	4	35	12	26	7
033	E1	23	1	19	1	1	107	3	12	1	7	30	2	45	8	38	11	33	10
034	E1	15	2	19	1	1	107	7	12	1	3	20	12	32	4	20	15	23	7
035	G1	19	2	20	2	1	119	7	12	1	6	27	7	33	4	42	10	26	11
036	E2	3	5	24	2	1	127	3	12	1	5	22	8	30	4	32	15	35	7
037	G2	4	1	30	1	1	116	3	12	1	2	20	6	33	1	37	13	31	5
038	E1	15	4	22	2	1	114	5	11	1	7	23	13	32	6	35	14	30	13
039	E2	5	2	27	2	1	128	7	11	1	1	19	10	32	1	29	14	21	3
040	G1	12	3	49	1	1	130	4	7	2	7	26	10	33	9	41	17	32	13

11, 14 E G

0 = Zero Alpha O
1 = One Alpha I
2 = Two Alpha Z

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DATA PROCESSING AND COMPUTING CENTER
CARBONDALE - EDWARDSVILLE — V T I
GENERAL PURPOSE DATA FORM

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Hits = 8

ID #	GROUP	DEP VAR	BO	CA	SEX	RACE	IQ	SES	GEO AREA	REL	IPat Anxiety	SS DOG MAT	Fx RIGID	RS ACQ.	IPat EGO.	ILPF CON FID.	EYSE. EXT/INT.	PP2 IMPUL	EYSE. NEUR
0101	E2	4	5	19	2	1	107	10	10	1	6	24	7	39	6	36	13	24	12
0102	[illegible]	[illegible]	2	21	1	1	94	4	12	1	5	25	15	31	1	32	14	35	7
0103	G1	12	1	22	1	1	131	10	12	1	5	20	13	24	6	32	10	22	5
0104	E1	23	1	19	2	1	102	5	12	1	6	22	9	34	3	31	16	33	11
0105	G2	1	9	37	1	1	99	3	13	1	6	13	13	31	5	26	12	29	5
0106	E2	5	1	27	2	1	127	3	12	1	7	20	14	29	5	32	10	30	4
0107	E2	7	3	42	1	1	115	4	19	1	10	20	8	25	8	42	16	33	11
0108	E1	19	1	42	2	1	108	4	12	2	6	24	10	37	5	35	17	23	16
0109	E1	22	2	23	1	1	102	5	5	1	7	27	3	40	4	34	15	23	11
0110	E1	22	1	21	1	1	114	2	12	1	8	26	9	44	7	27	17	38	14
0111	G2	6	4	21	2	1	98	7	11	1	3	27	6	30	5	22	13	23	2
0112	[illegible]	23	1	22	1	1	100	3	4	2	4	20	11	29	3	27	14	30	4
0113	E1	21	1	22	2	1	99	5	11	1	2	16	12	31	4	27	12	28	9
0114	[illegible]	[illegible]	1	24	2	1	119	4	11	1	5	28	9		6	33	10		10
0115	[illegible]	17	1	21	1	1	111	4	12	1	8	22	12	29	5	37	13	21	16
0116	[illegible]	[illegible]	1	20	1	1	116	9	12	1	5	24	8		8	31	13		3
0117	[illegible]	6	1	22	1	1	134	2	12	2	3	18	13	32	4	35	15	29	1
0118	[illegible]	8	5	19	2	2	86	9	19	1	7	26	6	40	8	38	16	27	13
0119	[illegible]	[illegible]	3	21	2	1	125	2	19	1	4	23	9		3	46	8	0	7
0120	[illegible]	4	1	32	1	1	121	11	12	1	3	26	2	34	4	23	10	27	3
0121	[illegible]	[illegible]	2	26	1	1	116	9	12	1	10	25	7		7	39	17		19
0122	[illegible]	9	1	22	1	1	124	4	11	1	8	30	12	25	5	43	6	22	14
0123	[illegible]	[illegible]	1	24	2	1	124	4	11	2	1	21	10		2	32	17	25	2
0124	[illegible]	[illegible]	2	42	2	1	111	3	12	1	7	32	10		4	38	17		14
0125	[illegible]	[illegible]	[illegible]	29	2	1	98	5	12	1	4	23	7		5	31	16		17

10 E
7 G

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DATA PROCESSING AND COMPUTING CENTER
CARBONDALE — EDWARDSVILLE — V.T.I.
GENERAL PURPOSE DATA FORM

Beta = 13

16 8 E

ID #	Group	Dep Var	BO	CA	Sex	RACE	IQ	SES	Geo AREA	REL	Ipat Anxiety	SS Dog mat.	Fx Rigid	RS Aco.	Ie Ego	ILPF Son Fid.	Eyse Ext. Int.	PRe imm.	Eyse Neur.
0 1 2 3	(4)	(11)	5	2 3	2	2	8 6	8	1 1	1	7	2 8	1 6		4	3 5	1 0	8 8	1 3
0 1 2 7	E 1	2 0	1	2 2	2	1	9 5	7	1 2	2	1 0	2 8	1 0	3 8	9	4 2	1 0	2 9	1 7
0 1 2 2	C 2	6	2	2 2	1	1	1 4 1	6	1 0	1	6	2 3	1 2	2 5	3	3 9	1 4	4 0	1 0
0 1 2 9	E 1	2 0	2	2 1	1	1	9 7	2	4	2	3	2 2	6	2 7	4	2 5	1 8	2 4	6 8
0 1 3 0	E 2	1 0	5	2 0	1	1	1 3 7	4	1 2	1	7 8	4 0	6	3 2	8	3 0	6	2 8	1 6
0 1 3 1	E 2	8	1	4 8	2	1	1 1 8	4	1 0	1	9	2 6	1	3 3	6	2 8	5	2 7	1 8
0 1 3	E 1	1 8	2	1 5	1	1	1 0 8	6	1 2	1	6	2 7		3 3	7	3 2	1 5	3 4	1 0
0 1 3	E 1	2 2	3	1 5	1	2	1 1 8	9	1 2	1	6	3 2		3 3	8	3 7	1 4	3 3	1 4
0 1 3	E 1	1 4	3	1 6	1	1	1 2 8	8	1 2	1	7	1 7		2 2	7	2 7	1 7	2 7	4
0 1	E 2	1	2	1 7	2	1	1 0 5	8	1 2	2	7	2 4		3 4	4	2 7	1 0	2 7	5 9
0 1	E 1	1 4	3	1 6	1	1	1 3 3	4	1 2	1	5	2 6		4 0	8	3 2	1 2	2 8	1 3
0 1	E 1	1 6	1	1 7	2	1	1 2 0	9	1 2	1	9	2 5		3 6	1 0	3 3	1 9	3 3	1 0
0 1		2 3	2	1 4	2	1	1 1 7	8	1 2	2	9	2 6		4 5	9	2 8	1 2	3 5	1 9
0 1		1 9	1	5 8	2	1	1 3 5	3	1 2	1	2	1 7		2 6	2	3 3	1 3	3 2	3
0 1		7	1	1 6	1	1	1 2 9	4	1 2	2	7	2 4		2 8	9	3 6	5	2 6	1 0
0 1		1 0	3	1 6	2	1	1 1 7	8	1 2	2	7	1 6		3 3		2 5	6	2 5	1 4
0 1		2 2	2	1 5	1	1	1 2 8	7	1 2	1	5	2 4		3 8	6	4 1	8	2 6	9
0 1		2 3	3	1 4	2	1	1 1 7	6	1 2	4	8	1 6		3 4	1 0	4 2	7	2 2	1 0
0		1 3	2	1 4	1	1	1 4 3	4	1 2	1	3	2 2		3 4	4	3 5	7	2 0	6
0		2	1	1 6	2	2	1 0 1	7	1 2	2	5	2 1		2 9	6	3 2	1 2	2 9	1 0
0			4	1 8	1	1	1 1 9	4	1 2	1	3	2 2		2 8	6	3 0	1 0	1 8	6
1		2 1	1	1 7	1	1	1 3 8	6	0 2	2	6	2 2		3 2	6	3 5	8	2 6	9
			1	1 7	1	1	1 0 7	3	4	4	9	1 9		3 1	7	4 2	1 1	3 3	1 8
			3	4 3	2	1	1 3 6	5	1 0	4	9	2 0		3 5	7	4 7	9	2 6	1 1
1			2	1 8	2	1	1 1 1	5	1 2	1	8	2 3		3 5	7	4 0	1 5	3 3	1 7

0 = Zero Ø = Alpha O
1 = One I = Alpha I
2 = Two Z = Alpha Z

SOUTHERN ILLINOIS UNIVERSITY
DATA PROCESSING AND COMPUTING CENTER
CARBONDALE - EDWARDSVILLE - V.T.I.
GENERAL PURPOSE DATA FORM

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Hits = 10

ID #	Group	Dep. Var.	Bo	CA	Sex	Race	IQ	SES	Geo. Area	Rel.	IPAT Anxiety	SS Doc Mat	Fx Ricio	RS Aca.	IPAT Ego	16 PF Con Flo.	Extr. Int.	PP2 Inpul.	Extr. Neur.
0151	G2	11	2	17	1	1	115	8	12	1	6	15		27	4	35	7	17	4
0152	E1	13	2	18	1	1	113	6	12	2	4	20		31	5	27	14	31	8
0153	G1	22	1	18	2	1	136	5	12	1	8	24		31	10	33	16	26	16
0154	E2	5	1	15	2	1	118	3	12	1	4	19		29	6	41	6	22	10
0155	G2	8	2	17	1	1	120	7	12	1	7	26		28	4	43	10	28	17
0156	E2	10	2	17	1	1	127	4	12	4	9	16		30	10	27	17	22	8
0157	E1	23	1	17	2	1	120	7	12	1	3	15		22	5	33	4	13	6
0158	G1	11	2	17	1	1	112												
0159	E1	21	1	17	1	1	100	2	12	4	5	21		33		22	15	22	5
0160	E1	20	1	17	1	1	134	5	12	1	4	15		34	1	37	12	35	5
0161	G1	11	1	23	1	1	129	3	7	1	4	23		36	2	24	8	25	6
0162	G2	8	1	22	2	1	121	3	7	1	4	24		31	4	39	5	28	13
0163	E2	5	1	30	2	1	118	7	11	1	6	17		26	3	33	9	21	8
0164	G1	21	2	65	2	1	119	2	10	1	7	23		37	7	37	6	22	19
0165	G2	11	4	65	1	1	131	2	10	1	5	20		33	7	32	15	28	6
0166	E2	7	1	80	2	1	100	1	12	1	6	26		29	8	24	16	26	20
0167	G2	9	3	22	2	1	127	6	12	2	3	18		30	4	31	12	28	5
0168																			
0169	G1	22	2	16	1	1	105	3	12	1	7	26		36	6	30	15	35	16
0170	E1	16	1	16	1	1	89	6	12	2	8	23		30	8	35	12	27	17
0171	E1	19	1	18	1	1	117	4	12	2	6	21		28	6	35	5	25	14
0172	G1	22	1	16	2	1	111	6	12	1	8	30		34	10	31	14	34	15
0173	G2	9	2	17	2	1	132	2	7	2	5	23		26	4	32	9	22	9
0174	G1	21	1	17	2	1	120	2	12	1	5	23		35	6	34	21	35	13
0175	G2	10	5	15	2	1	121	8	12	2	7	27		37	8	41	9	15	15

0 = Zero Ø Alpha O
1 = One I Alpha I
2 = Two Alpha Z
Space = Blank Column

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CARBONDALE EDWARDSVILLE—V.T.I.
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Dept. No. ____
Prog. No. ____
Submitted by ____
Date ____ AM ____ PM

Hits = 14

I.D. #	GROUP	DEP VAR.	BO	C.A.	SEX	RACE	IQ	SES	GEO. AREA	REL.	IPAT ANXIETY	SS DOG MAT.	Fx RIGID	RS ACQ.	IPAT EGO	16PF CONFID.	EYSE. EXT./INT.	PP2 IMPUL.	EYSE. NEUR.
0176	E1	17	2	15	2	1	119	4	12	1	7	23		36	7	25	15	24	15
0177	G1	14	3	15	2	1	102	7	12	1	9	31		44	10	41	18	36	14
0178	G2	5	3	16	2	1	116	4	12	2	4	18		26	5	22	16	32	13
0179	E2	11	1	18	2	1	104	4	25	2	4	21		26	4	23	13	33	9
0180	E1	23	1	16	2	1	123	5	12	1	6	26		35	10	22	14	35	17
0181	E1	22	2	16	2	1	116	4	12	1	5	21		22	7	26	18	28	14
0182	E1	20	1	15	2	1	113	5	12	1	6	27		35	4	36	21	36	18
0183	G2	10	3	16	1	1	124	6	12	1	5	22		31	8	28	12	32	7
0184	E2	8	1	17	1	1	104	8	26	1	4	19		32	6	35	8	19	7
0185	G2	5	2	15	2	1	111	3	12	1	8	22		31	5	30	16	28	20
0186	G1	15	1	16	1	1	112	8	12	1	6	21		32	3	28	14	27	8
0187	G1	13	1	16	1	2	84	10	12	1	8	26		31	10	35	12	25	13
0188	E1	18 5	1	15	1	1	121	5	12	1	7	28		33	7	30	14	27	14
0189	[illegible]	5 18	2	15	1	1	127	5	12	1	7	19		27	10	35	14	22	7
0190	[illegible]	23	1	21	1	1	124	5	10	1	3	15		23	4	20	16	29	4
0191	[illegible]	[illegible]	Dropped			1	109												
0192	E2	9	1	14	1	2	123	7	10	1	7	28		39	4	32	14	33	15
0193	G1	17	1	17	1	1	114	8	10	1	5	22		29	4	30	11	23	5
0194	G1	23	2	16	1	1	88	5	4	1	6	23		32	9	34	14	28	7
0195	E1	23	3	15	2	1	123	10	12	1	7	22		33	6	35	14	29	13
0196	G1	14	1	15	1	1	144	5	12	2	7	28		34	4	39	6	23	14
0197	G1	12	2	15	1	1	138	2	7	1	7	22		35	7	36	9	31	11
0198	E1	15	1	16	1	1	108	5	12	1	7	26		37	7	27	12	28	15
0199	E1	23	3	16	1	1	111	2	7	2	8	27		30	8	27	10	22	12
0200	E2	8	2	16	1	1	124	2	12	4	9	20		36	6	27	12	28	16

13 E
11 G

1-26913-9

0 = Zero Ø = Alpha O
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Hits = 14

ID #	Group	Dep. Var.	Bo	CA	Sex	Race	IQ	SES	Geo. Area	Rel.	IPAT Anxiety	SS Dog Mat.	Fx Rigid	RS Acq.	IPAT Ego	16 PF Con Fid.	Extr. Ext./Int.	PP2 Impul.	Extr. Neur.
0201	E1	17	4	15	2	1	121	5	12	2	8	32		26	4	46	15	24	14
0302	E2	5	4	15	2	1	110	5	12	2	4	28		38	9	31	15	27	12
0203	G2	0	3	15	2	1	120	7	12	2	4	26		38	5	53	15	26	16
0204	E1	22	1	15	2	1	114	3	12	2	7	26		30	9	32	18	35	10
0205	E1	19	3	14	2	1	127	5	10	1	7	25		34	7	38	20	35	16
0206	G1	23	2	18	1	1	≠≠≠	7	12	1	9	21		30	10	40	12	28	20
0207	G1	21	3	14	2	1	117	5	12	1	7	25		36	2	39	16	34	14
0208	E1	20	1	16	2	1	106	8	10	2	7	23		31	6	27	9	27	12
0209	G1	14	1	15	1	1	126	8	12	1	8	29		34	7	36	7	24	17
0210	G2	6	3	16	1	1	119	5	12	1	8	27		39	9	29	16	32	14
0211	E1	17	2	18	2	1	127	5	12	1	5	21		27	6	31	12	23	11
0212	E1	20	2	16	1	1	96	5	12	2	6	19		25	6	28	17	33	10
0213	E1	21	1	19	2	2	107	10	4	1	10	30		47	9	47	8	24	21
0214	G2	6	2	16	1	1	115	5	12	2	6	31		35	5	33	18	29	10
0215	G1	23	2	12	2	1	116	7	10	1	7	26		40	9	42	14	32	18
0216	E2	9	2	21	1	1	120	7	10	1	6	24		32	6	29	9	32	11
0217	E1	15	4	20	1	1	126	7	12	2	6	24		33	8	34	12	28	7
0218	E1	14	2	15	2	1	124	7	12	2	9	22		35	10	34	13	28	15
0219	G1	22	3	18	1	1	110	2	12	1	3	17		31	3	31	13	28	6
0220	G2	3	3	17	1	1	119	10	12	1	6	44		40	8	28	16	31	9
0221	E1	11	4	17	1	1	131	3	12	1	7	25		38	6	32	17	33	10
0222	E1	12	1	22	1	1	105	4	12	2	8	21		42	6	33	16	41	14
0223	E1	10	1	17	1	1	108	4	25	1	7	24		35	8	26	15	26	12
0224	G1	14	2	15	2	1	125	5	12	1	7	22		35	6	45	6	19	6
0225	E1	14	4	16	2	1	108	5	12	2	8	26		38	10	34	17	28	15

13 E
12 G

0 = Zero Ø = Alpha O
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Hits = 4

ID#	GROUP	DEP VAR.	BO	C.A.	SEX	RACE	IQ	SES	GEO. AREA	REL.	IPAT ANXIETY	SS DOGMA	Fx RIGID	RS ACQ	IPAT EGO	16PF CONFIO	Eysenck EXT/INT	PP2 IMPUL	Eysenck NEOP.
0226	E1	22	3	18	2	1	126	5	12	1	8	25		32	5	38	7	22	12
0227																			
0228	G1	21	1	24	1	1	145	9	12	2	9	16		26	8	35	15	41	11
0229	G2	7	2	20	1	1	143	8	12	1	7	25		44	6	30	20	32	14
0230	G1	19	3	19	1	1	118	2	20	2	7	22		33	6	41	10	23	12
0231	E2	10	2	16	2	1	107	9	12	2	6	25		33	8	36	11	30	13
0232	G2	10	2	15	2	1	109	8	12	1	7	26		39	8	29	13	31	14

2E
4G

1-26919-9

****OUTPUT FROM FIRST 100			E2		G1	G2
1	E 2	3.7345	3.7370	G 2	5.9723	5.9879
2	E 1	3.5170	3.5017	G 1	4.2577	4.2556
3	E 2	3.7031	3.7153	G 2	4.0584	4.0589
4	E 2	3.4197	3.4385	G 2	5.1992	5.2565
5	E 1	4.1726	4.1349	G 2	5.1364	5.1606
6	E 2	3.0735	3.0874	G 2	4.3601	4.3911
7	E 2	4.4036	4.4199	G 2	5.4289	5.4408
8	E 1	3.4905	3.4584	G 1	3.9483	3.9237
9	E 1	4.1555	4.1463	G 1	5.3624	5.3402
10	E 1	3.6003	3.5942	G 2	4.8705	4.8782
11	E 1	3.6189	3.6068	G 1	4.4319	4.4073
12	E 1	3.6172	3.5975	G 2	6.5062	6.5494
13	E 2	3.9868	3.9901	G 2	4.6091	4.6376
14	E 2	2.9023	2.9134	G 1	5.0860	5.0154
15	E 1	4.2524	4.2051	G 2	4.7172	4.7226
16	E 1	4.4527	4.4295	G 2	5.9837	6.0323
17	E 1	3.9577	3.9101	G 1	4.1258	4.1192
18	E 1	4.4860	4.4481	G 1	4.7461	4.7218
19	E 1	4.2834	4.2543	G 2	4.5864	4.6034
20	E 1	4.1364	4.1214	G 2	4.9185	4.9215
21	E 1	4.5019	4.4572	G 1	5.3778	5.3636
22	E 1	3.6592	3.6315	G 1	4.2650	4.2596
23	E 1	4.1667	4.1473	G 2	6.4244	6.5167
24	E 1	4.5109	4.4485	G 1	5.3444	5.3322
25	E 2	3.9077	3.9331	G 1	4.1568	4.1518
26	E 1	3.7636	3.7501	G 2	4.4329	4.4536
27	E 2	3.2727	3.3029	G 2	3.8924	3.9053
28	E 1	3.4038	3.3874	G 1	3.7771	3.7654
29	E 2	3.3372	3.3412	G 1	4.1770	4.1507
30	E 1	4.0957	4.0580	G 1	4.7919	4.7855
31	E 1	3.7827	3.7811	G 1	3.9059	3.8916
32	E 1	4.2453	4.2270	G 1	5.1578	5.1522
33	E 1	4.6459	4.6383	G 1	5.2099	5.1714
34	E 1	4.7365	4.6959	G 2	5.5408	5.5467
35	E 1	3.9248	3.9110	G 1	4.9553	4.9461
36	E 1	3.9256	3.9121	G 2	4.7630	4.7634
37	E 1	3.8756	3.8687	G 1	4.1269	4.1060
38	E 1	5.0038	4.9518	G 2	4.0289	4.0317
39	E 2	3.5073	3.5276	G 1	4.5276	4.4887

1 & 2 reverse

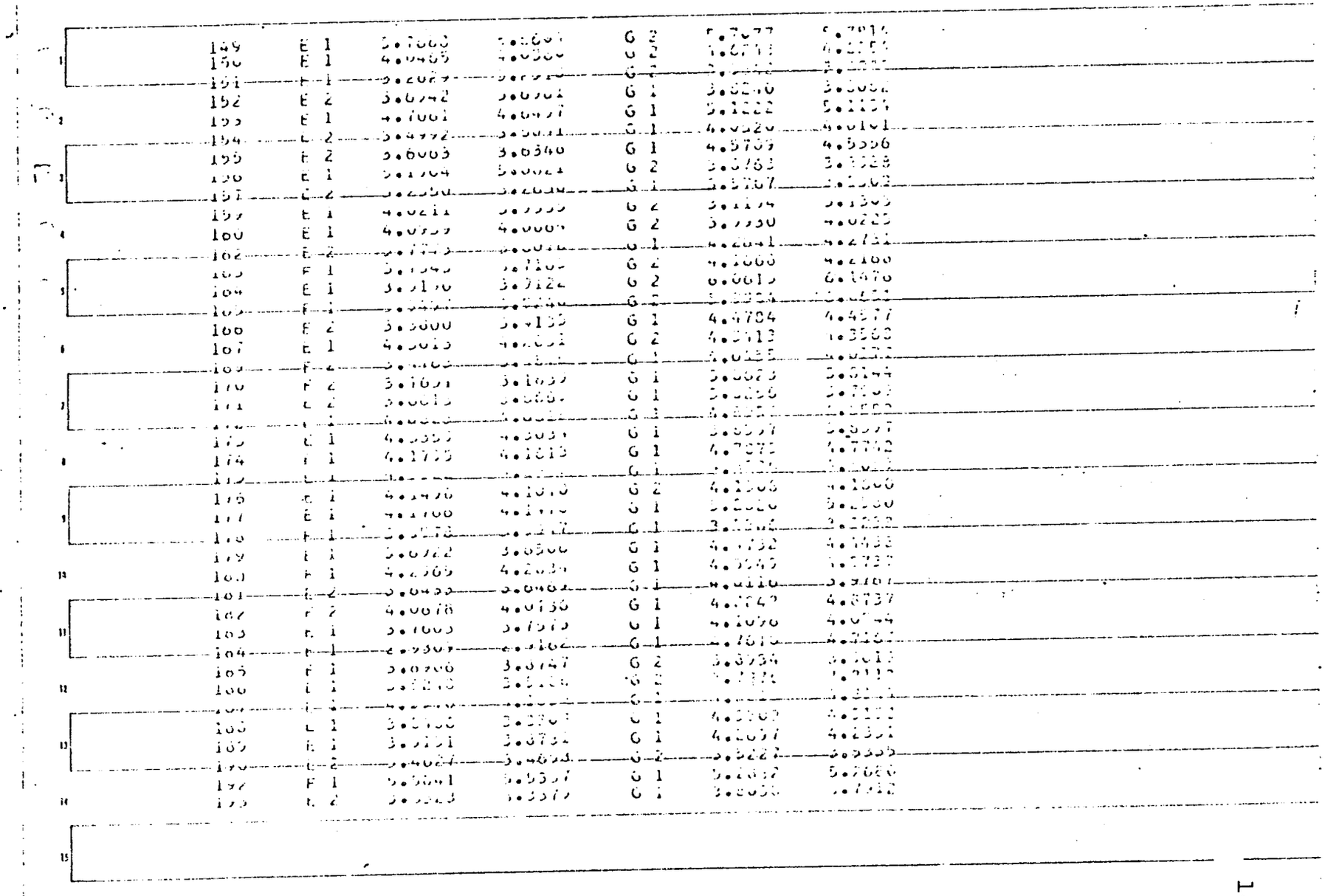
48% had different for G+E

40	E 1	5.1077	5.0461	G 1	5.4842	5.4594
41	F 1	4.0250	4.0118	G 1	4.5921	4.5849
42	E 1	3.8540	3.8311	G 2	4.8418	4.8546
43	F 1	5.1355	5.1086	G 1	5.6384	5.8048
44	F 1	4.3620	4.3273	G 1	4.7304	4.7243
45	F 1	4.3283	4.3033	G 2	4.3396	4.3406
46	F 1	4.4502	4.4030	G 2	4.6565	4.6657
47	F 1	4.4571	4.4277	G 2	4.6618	4.6672
48	F 1	4.7230	4.6543	G 2	4.6186	4.5948
49	F 1	4.4866	4.4363	G 1	4.5774	4.5664
50	F 1	4.4632	4.4271	G 1	5.0270	4.9947
51	E 1	4.3184	4.2676	G 2	4.5291	4.5385
52	E 1	3.4936	3.4848	G 1	3.5648	3.5310
53	F 2	3.4792	3.4919	G 1	5.1982	5.1081
54	F 2	3.4133	3.4212	G 1	4.1851	4.1830
55	E 2	3.2954	3.3167	G 2	3.9738	4.0038
56	F 2	3.5664	3.5727	G 1	5.1906	5.1621
57	E 1	4.2579	4.2544	G 1	4.9241	4.9091
58	E 1	5.4066	5.3408	G 2	4.9748	5.0012
59	F 1	5.6569	5.5606	G 2	5.7957	5.7979
60	F 1	4.8467	4.7513	G 2	4.5832	4.6278
61	F 1	3.4851	3.4654	G 1	4.1479	4.1314
62	F 2	3.5572	3.5717	G 2	4.2931	4.3179
63	F 1	3.9060	3.8803	G 2	4.9320	4.9468
64	E 1	3.8120	3.7846	G 1	5.1204	5.1072
65	F 2	3.7554	3.7713	G 1	4.6160	4.6072
66	F 1	4.9610	4.8988	G 1	5.8884	5.8604
67	F 2	3.3209	3.3456	G 2	4.9788	4.9883
68	F 2	3.8140	3.8236	G 1	4.3124	4.2898
69	F 2	3.7911	3.8002	G 1	3.8838	3.8711
70	E 1	3.4762	3.4553	G 1	4.0725	4.0552
71	F 2	3.4765	3.5143	G 1	3.4800	3.4767
72	F 2	2.8271	2.8839	G 1	4.0797	4.0241
73	F 1	3.7175	3.7072	G 1	4.8166	4.7990
74	F 2	3.3168	3.3492	G 2	5.4173	5.4510
75	F 2	3.5614	3.5868	G 1	4.8461	4.8111
76	F 2	3.7195	3.7217	G 1	4.5389	4.5164
77	F 1	3.1620	3.1541	G 1	3.5878	3.5796
78	F 1	3.9384	3.9374	G 1	4.6483	4.6220
79	F 2	2.9509	3.0217	G 1	3.4412	3.4062
80	F 1	3.7557	3.7392	G 1	4.6644	4.6224

81	E 1	3.6501	3.6255	G 1	4.5234	4.4944
82	F 1	4.0583	4.0439	G 1	5.1683	5.1614
83	F 2	3.3928	3.4086	G 1	4.2802	4.2535
84	F 1	3.7331	3.7305	G 1	4.2942	4.2878
85	F 1	4.0674	4.0484	G 2	4.6713	4.6821
86	F 2	2.8751	2.9209	G 1	2.9928	2.9636
87	F 2	3.1793	3.2111	G 1	4.4067	4.3640
88	F 1	5.4700	5.4071	G 1	6.3030	6.2885
89	F 1	4.1851	4.1724	G 1	4.8184	4.7937
90	F 1	4.4419	4.3869	G 1	4.5577	4.5555
91	F 1	4.3403	4.3214	G 1	5.0450	5.0431
92	F 2	3.0362	3.0512	G 1	3.9659	3.9476
93	F 1	3.6925	3.6766	G 1	4.8956	4.8571
94	F 2	3.0436	3.0636	G 1	3.5782	3.5733
95	F 1	3.9499	3.9426	G 1	4.9829	4.9690
96	F 1	4.1786	4.1534	G 2	4.4801	4.4834
97	F 2	3.2586	3.2884	G 1	4.5349	4.5336
98	F 1	3.9240	3.9123	G 2	4.3929	4.3968
99	F 1	3.8077	3.8056	G 2	4.5434	4.5729
100	F 1	4.4965	4.4785	G 2	6.0695	6.0898

	2	1		2	1
E	32	68	G	38	62

```
*****OUTPUT GROUP 2 (2ND 110 )
  101     E 2     3.7227     3.7314     G 2     4.3716     4.4021
  103     F 1     3.7479     3.7404     G 1     4.4414     4.4020
  104     E 1     3.0416     3.0360     G 2     4.0660     4.0790
  105     E 2     2.9273     2.9270     G 2     3.2250     3.2602
  106     E 1     4.2313     4.2414     G 2     4.4820     4.4926
  107     E 1     3.8436     3.7900     G 2     3.8377     3.8811
  108     F 1     4.0803     4.0526     G 2     3.5340     3.5021
  109     F 2     3.3409     3.3253     G 2     4.0214     4.0322
  110     E 1     4.1305     4.0738     G 2     4.0474     4.0610
  111     F 2     3.0160     3.0240     G 1     3.9594     3.9263
  112     F 2     3.7000     3.6230     G 1     3.9332     3.9000
  113     E 2     2.9007     3.0332     G 2     3.5029     3.5001
  115     F 1     3.4080     3.4021     G 1     4.1042     4.1576
  117     F 1     4.2636     4.2201     G 1     4.4733     4.4841
  118     E 1     4.1690     4.1130     G 1     3.7832     3.7201
  120     F 2     3.5164     3.5002     G 2     4.2352     4.2467
  122     E 1     3.0102     3.0124     G 1     4.0221     4.0010
  127     E 1     4.0563     4.0277     G 1     4.0335     4.0813
  128     F 2     4.3456     4.3464     G 1     4.7196     4.7048
  129     F 2     2.9241     2.9501     G 1     3.0770     3.0332
  130     F 1     4.1512     4.1000     G 1     3.7170     3.7307
  131     E 1     4.1027     4.0761     G 2     3.1910     3.2222
  132     F 2     3.1020     3.1124     G 1     4.3212     4.2962
  133     E 1     3.1071     3.1003     G 1     3.7107     3.7325
  134     F 1     3.2300     3.2122     G 2     3.8171     3.8177
  135     E 1     4.2301     4.2229     G 2     3.2264     3.2510
  136     E 1     4.1210     4.1151     G 1     4.7307     4.7212
  137     E 1     4.0363     4.0124     G 2     3.1300     3.1453
  138     E 1     4.2222     4.2303     G 2     4.2038     4.2222
  139     F 1     4.0073     4.0302     G 2     3.6113     3.6307
  140     E 1     4.1000     4.1342     G 1     4.3310     4.2700
  141     E 1     4.3270     4.2214     G 2     3.0010     3.1427
  142     E 2     3.0725     3.0837     G 1     4.0127     4.0133
  143     E 1     3.0123     4.0171     G 2     3.9132     3.9722
  144     E 1     3.9031     3.9209     G 1     4.1333     4.1222
  145     F 1     3.1100     3.0731     G 1     4.7090     4.0727
  146     E 2     3.1007     3.1142     G 1     3.0085     3.0622
  147     E 1     4.0405     4.0102     G 1     4.2021     4.1112
  148     E 1     3.1280     3.0830     G 2     3.7014     3.7170
```



194	F 2	2.0506	2.7140	G 1	3.2172	3.1.00	
195	E 1	4.2250	4.2711	G 2	4.2260	4.2535	
196	E 1	4.2550	4.2071	G 1	4.2221	4.2555	
197	E 1	4.2270	4.2050	G 1	4.2079	3.2057	
198	E 1	3.2129	3.2124	G 1	4.2777	4.2275	
199	E 1	3.2129	3.2055	G 1	3.4092	3.4250	
200	E 1	3.2525	3.2571	G 2	3.2736	3.2744	
201	E 1	4.2577	4.2109	G 1	3.2302	3.2752	
202	E 1	3.2042	3.2752	G 1	4.2744	4.2000	
203	E 2	4.2502	4.2050	G 1	3.2742	3.2022	
204	E 1	4.2622	4.2172	G 1	4.2747	4.2057	
205	E 1	4.2102	4.2011	G 1	4.2572	4.2222	
206	E 2	3.2212	3.2502	G 1	4.2527	4.2150	
207	E 1	4.2242	4.2772	G 2	4.2207	4.2772	
208	E 1	3.2222	3.2222	G 2	3.2722	3.2220	
209	E 1	3.2757	3.2702	G 1	4.2767	4.2752	
210	E 1	4.2211	4.2222	G 1	4.2222	4.2227	
211	E 1	3.2240	3.2742	G 1	3.2222	4.2202	
212	E 2	3.2255	3.2241	G 1	3.2422	3.2250	
213	E 1	3.2250	3.2722	G 2	3.2752	3.2721	
214	E 1	4.2221	4.2212	G 1	4.2252	4.2225	
215	E 2	4.2274	4.2240	G 1	4.2207	4.2222	
216	E 2	3.2220	3.2220	G 1	4.2242	4.2242	
217	E 1	4.2222	4.2212	G 1	4.2227	4.2221	
218	E 1	4.2420	4.2241	G 2	4.2202	4.2220	
219	E 2	3.2207	3.2207	G 1	3.2224	3.2202	
220	E 1	3.2222	3.2202	G 1	3.2222	3.2022	
221	E 1	4.2230	4.2220	G 1	4.2224	4.2224	
222	E 1	4.2220	4.2222	G 2	4.2227	4.2251	
223	E 1	3.2221	3.2200	G 1	4.2222	4.2220	
224	E 1	4.2210	4.2202	G 1	4.2202	4.2227	
225	E 1	4.2224	4.2227	G 1	4.2222	4.2240	
226	E 1	4.2225	4.2214	G 1	4.2219	4.2211	
227	E 1	3.2202	3.2212	G 2	4.2211	4.2262	
228	E 1	4.2248	4.2200	G 2	3.2237	3.2226	
229	E 1	3.2211	3.2220	G 1	4.2222	4.2226	
230	E 2	4.2012	4.2025	G 1	4.2263	4.2231	
231	E 1	4.2226	3.2220	G 1	4.2222	4.2242	

Phase Two
Descriptive data
N = 218

GROUP 1 (E1) N = 85

	VARIABLE NUMBER		MEAN	STANDARD DEVIATION	STANDARD ERROR
(OMIT) ~~C.A.~~	1		1.77	1.070	0.116
C.A.	2	(14)	20.76	9.230	1.001
IQ	5	(13)	114.17	12.132	1.316
	6		5.15	2.283	0.248
	7		11.19	1.907	0.207
Anxiety	9	(1)	6.48	2.129	0.231
Dogmatism	10	(2)	24.22	4.160	0.451
(Rigidity) OMIT	11		5.51	5.522	0.599
Acquiescence	12	(4)	33.29	5.520	0.599
Ego Strength	13	(5)	6.52	2.429	0.263
Confidence	14	(6)	33.52	6.044	0.656
Extra/Intro	15	(7/8)	13.05	3.913	0.424
Impulsivity	16	(9)	28.33	5.107	0.554
Neuroticism	17	(10)	12.16	4.867	0.528

GROUP 2 (F2) N = 38

VARIABLE NUMBER	MEAN	STANDARD DEVIATION	STANDARD ERROR
1	1.97	1.325	0.218
2	23.63	9.333	1.534
5	118.95	10.327	1.698
6	6.42	2.606	0.428
7	12.34	4.364	0.717
9	5.89	2.166	0.356
10	23.16	5.971	0.982
11	4.87	5.236	0.861
12	32.87	4.244	0.698
13	6.37	2.174	0.357
14	32.84	6.596	1.083
15	11.82	3.819	0.628
16	27.89	5.018	0.825
17	9.92	4.468	0.735

(Rigidity) OMIT

GROUP 3 (G1) N=15

VARIABLE NUMBER	MEAN	STANDARD DEVIATION	STANDARD ERROR
1	2.07	1.336	0.204
2	20.95	10.794	1.646
5	115.98	13.353	2.036
6	5.89	2.404	0.367
7	11.45	2.277	0.347
9	6.64	1.699	0.259
10	23.48	3.714	0.566
11	4.55	5.381	0.821
12	32.89	5.059	0.771
13	5.93	2.317	0.353
14	34.68	5.157	0.786
15	12.86	3.619	0.552
16	28.39	5.297	0.808
17	11.39	4.520	0.689

Rigidity (OMIT)

GROUP 4 (G2) N=50

VARIABLE NUMBER	MEAN	STANDARD DEVIATION	STANDARD ERROR
1	2.22	1.502	0.215
2	21.50	8.041	1.149
5	116.22	11.438	1.634
6	5.90	2.712	0.387
7	12.52	3.215	0.459
9	5.98	1.879	0.268
10	23.20	4.209	0.601
11	5.88	5.483	0.783
12	33.66	5.535	0.791
13	5.44	2.314	0.331
14	34.84	7.026	1.004
15	12.32	4.240	0.606
16	28.48	5.156	0.737
17	10.90	5.407	0.772

Rigidity (OMIT)

VARIABLE 3 Sex

RESPONSE	1	2
NUMBER RESPONDING	45	40

Group 1

E_1

VARIABLE 4 Race

RESPONSE	1	2
NUMBER RESPONDING	81	4

VARIABLE 8 Past Cattle Jewish Agnostic

RESPONSE	1	2	3	4
NUMBER RESPONDING	54	28	0	3

$n = 85$

85
38
45
50
N= 215

Sex

Group 2

VARIABLE 3

RESPONSE	1	2
NUMBER RESPONDING	22	16

E2

Race

VARIABLE 4

RESPONSE	1	2
NUMBER RESPONDING	36	2

Religion

VARIABLE 8

RESPONSE	1	2	3	4
NUMBER RESPONDING	26	7	0	5

N = 35

Group 3

G1

VARIABLE 3 54

RESPONSE	1	2
NUMBER RESPONDING	23	~~21~~ 22

VARIABLE 4 Race

RESPONSE	1	2
NUMBER RESPONDING	~~43~~ 44	1

VARIABLE 8 Religion

RESPONSE	1	2	3	4
NUMBER RESPONDING	~~31~~ 38	7	0	0

$n = 4$

VARIABLE 3 Sex

RESPONSE	1	2
NUMBER RESPONDING	24	26

Third Two Groups 4

G2

VARIABLE 4 Race

RESPONSE	1	2
NUMBER RESPONDING	45	5

VARIABLE 8 Religion

RESPONSE	1	2	3	4
NUMBER RESPONDING	~~37~~ 36	13	0	1

n=50

We want to sample your opinions. Please signal your answer as the Laboratory Assistant requests.

1. How long has the average American man-and-wife been married?
   1. One year
   2. Two to three years
   3. Four to five years
   4. Six to eight years
   5. Nine to ten years
   6. Eleven to twelve years
   7. Thirteen to fifteen years
   8. Sixteen to nineteen years
   9. Over 20 years

2. What is the current national debt?
   1. $1,000,000
   2. $10,000,000
   3. $18,000,000
   4. $180,000,000
   5. $1,800,000,000
   6. $50,000,000
   7. $500,000,000
   8. $1,500,000,000
   9. $1,500,000

3. How old is the typical college senior upon graduation?
   1. 17 years old
   2. 18 years old
   3. 19 years old
   4. 20 years old
   5. 21 years old
   6. 22 years old
   7. 23 years old
   8. 24 years old
   9. None of these

4. How many children does the average family have?
   1. One-half
   2. One
   3. One-and-a-half
   4. Two
   5. Two-and-a-half
   6. Three
   7. Three-and-a-half
   8. Four
   9. None

5. What does the typical housewife weigh?
   1. 80 lbs
   2. 85 lbs
   3. 90 lbs
   4. 95 lbs
   5. 100 lbs
   6. 110 lbs
   7. 125 lbs
   8. 140 lbs
   9. 150 lbs

6. What is the median family income?
   1. $1000
   2. $2000
   3. $3000
   4. $4000
   5. $5000
   6. $6000
   7. $7000
   8. $8000
   9. $9000

7. What is the average yearly rainfall in Death Valley?
   1. None
   2. Less than a half-inch
   3. One inch
   4. An inch and a half
   5. Two inches
   6. Three inches
   7. Four inches
   8. Five inches
   9. Six inches

8. How many passenger automobiles are operating today?
   1. 1,000,000
   2. 2,000,000
   3. 3,500,000
   4. 4,500,000
   5. 6,000,000
   6. 7,500,000
   7. 9,500,000
   8. 10,000,000
   9. None of these

9. How long is a typical engagement before marriage?
   1. One month
   2. Six weeks
   3. Three months
   4. Four months
   5. Six months
   6. Nine months
   7. One year
   8. Two years
   9. Three years

10. What does a typical newborn baby girl weigh?
    1. 4lbs
    2. 4lbs 6oz.
    3. 4lbs 9oz.
    4. 5lbs
    5. 5lbs 3oz.
    6. 5 1/2lbs
    7. 6lbs
    8. 6 1/2lbs
    9. 7lbs

11. How many pennies in a pound?
    1. 10
    2. 20
    3. 30
    4. 40
    5. 50
    6. 60
    7. 70
    8. 80
    9. 90

12. How many freckles does the typical red-haired boy have?
    1. 10
    2. 20
    3. 30
    4. 40
    5. 50
    6. 500
    7. 600
    8. 700
    9. 800

13. What is the average high tide in Baltimore, Md.?
    1. 1 foot
    2. 2 feet
    3. 4 feet
    4. 5 feet
    5. 6 feet
    6. 7 feet
    7. 8 feet
    8. 9 feet
    9. None of these

14. How far is it from Atlanta, Georgia to Seattle, Washington?
1. 1,000 miles
2. 1,500 miles
3. 2,000 miles
4. 2,500 miles
5. 3,000 miles
6. 3,500 miles
7. 4,000 miles
8. 4,500 miles
9. None of these

15. How many boys does a typical girl date before marriage?
1. Two
2. Four
3. Five
4. Six
5. Seven
6. Eight
7. Ten
8. Twenty
9. None of These

16. How old is a typical family car?
1. One year
2. Two years
3. Two-and-a-half years
4. Three years
5. Three-and-a-half years
6. Four years
7. Five years
8. Six years
9. None of these

17. How many grandchildren on "one side" of a typical family?
1. One
2. Two
3. Three
4. Four
5. Five
6. Six
7. Seven
8. Eight
9. Nine

18. What is the average weekly allowance for high school sophomores?
1. 50¢
2. 75¢
3. $1.50
4. $2.00
5. $2.50
6. $3.00
7. $3.50
8. $4.00
9. Over $5.00

19. How many fish in an average 5 acre lake?
1. 1,000
2. [illegible],000
3. [illegible],000
4. 4,000
5. 5,000
6. 6,000
7. 7,000
8. 8,000
9. None of these

20. What is the average grade-point-average four point scale for college juniors?
1. 2.0
2. 2.05
3. 2.15
4. 2.25
5. 2.5
6. 2.75
7. 3.0
8. 3.5
9. 4.0

21. How many countries belong to the U. N. today?
1. 50
2. 60
3. 70
4. 80
5. 90
6. 100
7. 110
8. 120
9. None of these

22. How many bottles of beer does the average truck driver consume annually?
1. 25
2. 50
3. 75
4. 100
5. 200
6. 250
7. 300
8. 350
9. 400

23. How long is the Hudson River?
1. 2 miles
2. 3 miles
3. 6 miles
4. 8 miles
5. 10 miles
6. 12 miles
7. 120 miles
8. 150 miles
9. Over 150 miles

24. What is the average family debt, including mortgages?
1. $1,000
2. $2,000
3. $3,000
4. $4,000
5. $5,000
6. $7,500
7. $10,000
8. $15,000
9. $17,500

25. How many pages in a standard size Bible?
1. 150
2. 200
3. 250
4. 300
5. 350
6. 400
7. 450
8. 500
9. Over 500

26. How deep is the typical oil well?
1. 1000 feet
2. 2000 feet
3. 2500 feet
4. 3000 feet
5. 3500 feet
6. 4,000 feet
7. 5,000 feet
8. Under 1000 feet
9. Over 5,000 feet

27. What is the age of the average mother-in-law?
1. 30
2. 35
3. 40
4. 45
5. 47
6. 49
7. 50
8. 52
9. 55

28. At what speed do most fatal car accidents occur?

1. 35 mph
2. 40 mph
3. 45 mph
4. 50 mph
5. 55 mph
6. 60 mph
7. 65 mph
8. 70 mph
9. Over 70 mph

29. How many hours sleep does the average mother obtain nightly?

1. 4 hrs.
2. 5 hrs.
3. 6 hrs.
4. 6 1/2 hrs.
5. 6 3/4 hrs.
6. 7 hrs.
7. Under 4 hrs.
8. Over 7 hrs.
9. Over 8 hrs.

30. How many deep puffs to a regular-size cigarette?

1. 5
2. 6
3. 7
4. 8
5. 9
6. 10
7. 11
8. 12
9. None of these