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Some intellectual and non-intellectual correlates of the study of values.

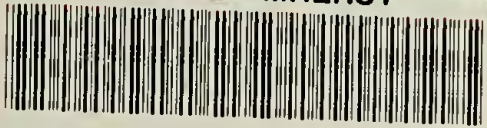
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SOME INTELLECTIVE AND
NON-INTELLECTIVE CORRELATES
OF THE STUDY OF VALUES

A Thesis Presented

By

Audrey Prentiss Hindman

Submitted to the Graduate School of the
University of Massachusetts in
partial fulfillment of the
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February, 1970

Department of Psychology

SOME INTELLECTIVE AND
NON-INTELLECTIVE CORRELATES
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February, 1970

A C K N O W L E D G E M E N T S

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Introduction

Psychologists are becoming increasingly interested in the influence of values on various aspects of an individual's life. This interest grew mainly out of a desire to study the entire individual and from evidence that demonstrated that values are a legitimate area of concern for behavioral scientists and can be studied within the scientific framework.

Psychologists have come a long way from Titchener's (1913) dictum that psychology as a science should not be concerned with values. Other psychologists felt that they could not afford this luxury if psychology was to deal with the whole man. Instead of ignoring the subject of values, many psychologists agreed with the following statement by Montagu (1955):

For a science of man, the problem is not whether or not to have anything to do with values but how to devise methods of studying them and discovering how they work.

In order to measure values objectively, a few empirically validated instruments have been developed. One of the more successful attempts according to this scientific standard has been the Allport-Vernon-Lindzey Study of Values test (1960).

The Study of Values (SOV) test is based directly on Spranger's (1928) six evaluative attitudes that he considered men to possess. These were the Theoretical, Economic, Aesthetic, Social, Political, and Religious attitudes. Because these attitudes represented the ideal, Spranger expected them to be used "only to clarify and bring order to

the confusion of complex real forms," (Spranger, 1929, p. x). In a given individual, the dominant attitude influences the way the other attitudes are expressed. Allport, Vernon, and Lindzey (1960) felt that a case could be made for other basic attitudinal types buty they remained faithful to Spranger's delineation of the attitudes in developing the SOV.

Since the first publication of this test in 1931, the SOV has been used to study many different variables. Subsequently, there have been three reviews of the studies using the SOV (Cantril & Allport, 1933; Duffy, 1940; and Dukes, 1955). The SOV attained a mean aplit-half reliability of .90, a mean repeat reliability of .89 for a one month interval, and a mean repeat reliability of .88 for a two month interval. External validation was accomplished by the comparison of scores in various occupational and academic groups expected to be high on certain value scales. A listing of the results will be given in chapter one.

C H A P T E R I

REVIEW OF THE LITERATURE

Sex Differences

Cantril and Allport (1933) and Pintner (1933) were the first to substantiate the fact that American males and females had different value systems as measured by the SOV. Males score significantly higher than females on the Theoretical, Economic, and Political value scales; females score significantly higher than males on the Aesthetic, Social, and Religious value scales. Other studies have verified these results (Hartmann, 1934; Triplett, 1935; and Spoerl, 1952). Even gifted college students show the same relationship when divided according to sex (Warren & Heist, 1960).

The SOV also seems to be capable of making fine distinctions within each sex group. Didato and Kennedy (1956) found significant differences between "masculine" males and "feminine" males and between "masculine" females and "feminine" females. The two types of males differed significantly on all six values; the results showed the same kind of differences as that found between males and females. The "feminine" females were dominant only on the Aesthetic and Religious values when compared to the "masculine" females. The determination of masculinity and femininity was based on the Masculinity-Femininity scale of the Minnesota Multiphasic Personality Inventory (MMPI).

In summary, a definite difference in value systems as measured by the SOV of males and females has been established. Didato and Kennedy's (1956) study indicates that this difference may depend upon the social environment of the individual. This raises the question of whether or not differences in values between the sexes varies across cultures. This question will be considered later in this chapter.

Differences Among College Majors

Following the success of these studies using the SOV to distinguish between the sexes, other studies have used the SOV to distinguish among college majors and vocations. Several investigators have shown that the SOV can reliably differentiate among the various areas of study in college. In his study of drama students, Golden (1940) found that these students have significantly higher Aesthetic values and significantly lower Theoretical and Economic values when compared to other students. Health and Physical Education Majors have high Political and low Economic and Aesthetic values (Seashore, 1947). Kelly and Fiske (1951) found that graduate students in Clinical Psychology score higher on the Social value scale than non-Clinical students. Deignan's (1958) results indicated that art students have dominant Aesthetic values and have low Social values when compared to other students. Mathematics students in Kennedy and Smith's (1963) study obtained high scores on the Theoretical value scale and low scores on the Religious and Social value scales.

Huntley (1965) tested an entire class of college freshmen in his study. That portion of his extensive results that is of concern here is summarized in Table 1. The high and low values were determined as those values on which the given major differed significantly in the indicated direction from several of the other groups (see Table 1).

Huntley (1965) readministered the SOV to the students during their senior year. It is interesting to note that he found the same patterns of differences among the groups upon graduation as he did at their entrance. He states however that "the differences among the groups tend to be accentuated or sharpened over the four years."

TABLE 1

General Differences Among Groups at Entrance

Major	High	Low
Humanities	Aesthetic	Theoretical Economic
Social Studies	Political Economic	Theoretical
Science	No Clear Trend	
Pre-Med (Science)	Social	Political Religious
Pre-Med (Arts)	Aesthetic Social	Economic Religious
Chemistry	Theoretical Religious	Aesthetic Political
Physics	Theoretical Religious	Economic Social Political
Industrial Administration	Economic Political	Theoretical Aesthetic Social
Engineering	Economic Political	Aesthetic Social Religious

Note: This table is reproduced from Huntley (1965)

Pal (1967) compared Engineering, Law, Medical, and Teacher Training students on the SOV. He found that although the Engineering students and the Law students had the same general profile, the former students attained significantly higher scores on the Economic scale while the latter students were significantly higher on the Political scale. The Medical students, when compared to the Engineering students, had significantly higher scores on the Theoretical and Social scales, whereas the Engineering students were significantly higher on the Economic and Aesthetic scales. When the Engineering students were compared to the Teacher Training students, the results showed that the former group had significantly higher scores on the Economic scale whereas the latter group had significantly higher scores on the Political scale. The Law students were significantly higher on the Aesthetic and Political scales while the Medical students were significantly higher on the Theoretical and Social scales when the two groups were compared. In comparing the Medical students with the Teacher Training students, Pal found that the Medical students were significantly higher on Social values and that the Teacher Training students were significantly higher on the Aesthetic and Political scales.

Wickert's (1940) study produced results similar to those of Pal. He found that Medical students have significantly higher Theoretical values than Law or Business students. In addition, the Law students scored significantly high on the Political scale; the Business students scored significantly high on the Economic scale and the Humanities majors scored significantly high on the Aesthetic scale.

In summary, the results of these studies demonstrate that the SOV can differentiate among the various areas of study in college. They also

point out the fact that differences in values do exist among students in different areas of study and raise the possibility that these value differences may in fact influence the student's choice of major.

Vocational Differences

The SOV has also been applied to the comparison of different vocations. The results obtained have been similar to those obtained in the comparison of academic majors. Vernon and Allport (1931) found that faculty members in Psychology as well as graduate students tend to have high Theoretical values and low religious values. Harris (1933; 1934) found that Science faculty members scored significantly higher on the Theoretical scale than the Language or Engineering faculty members. Language faculty members scored significantly higher on the Aesthetic scale than did the Science or Engineering faculty members. The Engineering faculty scored significantly higher on the Religious scale than Science, Language, or Social Science faculty.

In a study that compared school administrators and school teachers, Pintner (1933) found no significant differences between the two groups on any of the SOV scales. His nonsignificant results could be due to the low number of subjects used in his study. Anderson (1938) found that YMCA secretaries scored significantly high on the Social and Religious scales and significantly low on the Economic and Political scales. Results from a study involving volunteer submarine officers suggested that these individuals have more dominant Aesthetic and Social values than a group of college students (Weybrew & Molish, 1959).

Other studies have concentrated on the possible role of the SOV in predicting vocational success. In an attempt to determine the validity of the SOV in the selection of Federal administrators, Mandell and Adkins (1946) revised the SOV so as to eliminate the Religious and Political scales. They found a significant negative correlation ($-.45$) between the Economic scale and subjective ratings by supervisors and a positive correlation ($.42$) between the Theoretical scale and these same ratings. Thurstone (1944) had previously found that the Social scale was capable of significantly discriminating between good and poor Federal administrators.

These results indicate that the SOV may be useful in the selection of applicants for some occupations. This suggestion is not without foundation, since Pugh (1951) found that people in religious training programs and occupations had significantly higher Social values than those who dropped out; the drop-outs, in turn, had significantly higher Theoretical and Economic values. In his comparison of the initial performances on the SOV by drop-outs and those who remained in a nursing program, May (1966) obtained identical results. He found that the drop-outs scored significantly higher on the Theoretical and Economic scales, whereas those who remained scored significantly higher on the Social scale.

In summary, the results of the foregoing studies seem to indicate that individuals in different occupations tend to have different values. The results of the studies concerned with drop-outs, in addition to the ones on college majors, seem to suggest that persons with certain values tend to be attracted to those occupations which allow them to express those values.

Cross Cultural Comparisons

The SOV has also been used in the area of cross cultural research. These studies show that different cultures tend to have different predominating values. It is hypothesized that cultures influence the role of the sexes. Katz and Schanck (1938, p. 162) express this view as follows:

The social structure according to which men and women are assigned different roles should not be mistaken as the direct expression of human biology. A great deal of what passes for innate sex differences is really an acquired pattern.

These cultural differences are pointed out below in a review of the relevant studies. It has already been seen that with sex as the independent variable, Allport et al. (1960) found that the American males scored significantly higher than the females on the Theoretical, Economic, and Political value scales; the females scored significantly higher than the males on the Aesthetic, Social, and Religious value scales. These results have not changed since the first administration of the test.

Ray-Chowdhury (1959), working with an Indian population, found a significant difference between males and females on the Economic and Social value scales with the males scoring higher on the former value and the females scoring higher on the latter value. Reddy and Parameswaran (1966) found the same rank order of the value scales for the different sexes on a group of Indian males and females as that provided by the American norms. The precise data from this study were not available.

Nobechi and Kimura (1957) studied Japanese students. It was found that the dominant male values were Theoretical, Economic, Social, and Political. The dominant female values were Aesthetic and Religious. However, the only significant differences between males and females were

on the Theoretical, Economic, and Religious scales. Rodd (1959) provided norms for Mainland Chinese and for Taiwanese students. The results showed that the Mainland Chinese males and females had the same dominant values as the American males and females, whereas the Taiwanese males ranked higher on the Theoretical and Economic scales than did the females, and the females ranked higher on the Aesthetic, Social, Political, and Religious scales. All differences were significant (see Table 2).

These studies also show that overall differences do exist among cultures. In the following analysis, the results are obtained by combining the data for males and females of the different populations. Since data for males and females have been reported in Table 2 for five of the countries, the writer will combine the data for the males and females where it has not been done to make their results comparable to the data of the other studies. In these other studies, the authors combined the data for males and females.

Allport et al. (1960) report that the American students rank order the scales in the following manner: Political, Religious, Aesthetic, Theoretical, Economic, and Social. The overall data for the Indian students in the Reddy and Parameswaran (1966) study are not available. However, they concluded that the Indian students were most oriented toward Theoretical values and least oriented toward Religious values. The rankings by Ray-Chowdhury (1959) are as follows: Social, Political, Theoretical, Economic, Religious, and Aesthetic (see Table 3).

In a comparative study of Indian, Chinese, and American students, Singh, Huang, and Thompson (1962) found that the Indian students ranked the values in this manner: Economic, Theoretical, Political, Social, Aesthetic, Religious. Five of these values differed significantly from

TABLE 2

Mean Scores for Male and Female Students in
Five Countries on the Study of Values

Country and Investigator	Value					
	Theo	Econ	Aesth	Soc	Pol	Rel
Males						
United States Allport et al 1960	43.09	42.05	36.72	37.05	42.22	37.88
China Rodd 1959	46.75	39.82	37.51	33.42	43.48	38.80
India Ray-Chowdhury 1959	39.56	40.56	33.97	45.29	41.33	39.29
Japan Nobechi 1957	41.09	42.17	45.80	38.30	40.11	32.53
Taiwan Rodd 1959	47.82	39.84	37.93	33.83	41.87	38.57
Females						
United States Allport et al 1960	36.50	36.85	43.86	41.62	38.00	43.13
China Rodd 1959	42.90	36.91	40.23	35.06	42.12	42.66
India Ray-Chowdhury 1959	37.27	37.04	34.65	51.11	42.12	37.81
Japan Nobechi 1957	39.42	39.87	46.67	37.64	39.87	36.52
Taiwan Rodd 1959	43.92	37.07	40.54	34.42	41.90	42.02

TABLE 3

Mean Scores of SOV Scales by Country with Sexes Combined^x

Country and Investigator	Value					
	Theo	Econ	Aesth	Soc	Pol	Rel
United States Allport et al 1960	39.80	39.45	40.29	39.34	40.61	40.51
United States Singh et al 1962	49.69	37.38	37.54	40.49	33.35	38.81
Chile Hereford 1964	40.6	53.5	31.0	37.0	46.2	31.6
China Rodd 1959	44.82	38.36	38.88	34.24	42.79	40.74
India Ray-Chowdhury 1959	38.68	39.09	34.23	47.49	41.13	32.56
Japan Nobechi 1957	39.83	40.45	46.45	37.81	39.94	35.52
Mexico Hereford 1964	42.3	55.4	30.5	35.4	45.9	30.4
Taiwan Rodd 1959	46.27	38.75	38.96	34.06	41.88	39.94

X = These results were combined by the original investigators in some of the studies and so are combined here for all studies so that different cultural groups could be compared. In general, one should compare a given score with the norms for the specific sex group.

the American norms, the exception being the Theoretical value. The Indian were higher on the Political, Social, and Economic values while the Americans were higher on the Religious and Aesthetic values. The different results from this study and that of Ray-Chowdhury may be a consequence of the fact that in this study all students were currently studying at an American university whereas Ray-Chowdhury used students studying in their native country. The results of these two studies cannot be directly compared because both used a different set of norms and their data were incomplete.

Singh et al's (1962) rankings for American subjects do not coincide with Allport et al's (1960) rankings for Americans. This lack of correspondence may be due to the former's small and therefore unrepresentative number of subjects ($n=37$) and the latter's more representative and larger number of subjects ($n=8369$).

Kimura (1957) obtained results showing that the Japanese students have high Aesthetic values and low Religious values. In a comparison with the 1951 American norms, the Aesthetic, Social, and Religious values were significantly different. The Japanese placed higher on the Aesthetic scale and the Americans placed higher on the Social and Religious scales. Rodd's (1959) results indicated that the Taiwanese and the Mainland Chinese both ranked the values in the same manner. The Theoretical, Political, and Religious were the top three values and the Aesthetic, Economic, and Social values were the low three values.

Singh et al (1962) found that his Chinese population's top value orientations were Theoretical, Aesthetic, and Social, and the low value orientations were Political, Religious, and Economic. In a comparison with the American norms, the Chinese scored lower on the Economic and Religious scales and higher on the Social and Aesthetic scales, not

differing significantly on the other two scales. When the results of Singh et al. (1962) and of Rodd (1959) were compared on the basis of significance with the American norms, it was found that there was agreement in only one instance. That is, both found that the Chinese scored significantly lower than the Americans on the Economic value.

Hereford (1964) provided norms for Mexicans and Chileans. He found that the Mexicans had high Social and low Political values. The significant value differences between his American sample and the Mexicans were the Theoretical, Economic, and Religious scales with the Mexicans scoring higher on the Theoretical and Economic scales and the Americans scoring higher on the Religious scale. In a comparison of the Americans and the Chileans, there were significant differences on the Theoretical and Religious values with the Chileans scoring higher on the Theoretical and the Americans scoring higher on the Religious value. The Mexicans and Chileans significantly differentiated between themselves on the Theoretical, Economic, and Religious values. The Chileans were higher on the former value and the Mexicans were higher on the latter two values. See Table 3 for a summary of the results of these studies.

In summary, the results of the cross cultural studies show that values vary from culture to culture and that within cultures the values of the males and females differ. These cultural studies point out that the environment has a great influence upon the relative value organizations of the sexes. The effect of culture on the values of the different sexes is pointed out in a study by Smith (1962). She gives data that point out the fact that as the role of the woman changed in America, so did her occupational status. With the role change the value organization of

women also changed. This change is reflected in the increase in the number of women listed in Who's Who between 1936 and 1956 in those occupations classified under the three masculine values.

Relationship Between Values and Personality Variables

This study is further concerned with the relationship between values and personality. On the intuitive level, it seems likely that persons with different values should have and perceive themselves as having different personality characteristics. There is some evidence to support this contention. Allport and Kramer (1946) demonstrated that persons who were prejudiced against certain racial groups tended to cling to parental patterns, felt victimized by others, and felt little shame or guilt about their prejudiced behaviors. Sanai (1952) investigated the relationship between attitudes and values. The only statistically significant relationships were found between the alterationist attitude and several scales of the SOV. Sanai (1952) defines alterationism as "a psychological tendency towards change in all social attitudes and not politics only." His results showed a positive correlation between alterationism and Theoretical values, a negative correlation between alterationism and Religious values, and also a positive correlation between alterationism and Aesthetic values. All relationships were statistically significant.

Kerr (1952) found that people who could be described on the politico-economic liberalism-conservatism continuum had different values depending upon which end of the continuum they fell. There tended to be a positive relationship between liberalism and intelligence. Liberals tended to be more introverted than the conservatives and more pessimistic and less prejudiced. Conservatives tended to have more favorable

attitudes toward religion and less favorable toward the establishment of an international government than liberals.

The relationship between values and personality variables finds other support in the literature. In correlating the results on the Omnibus Personality Inventory with the results on the SOV, Warren and Heist (1960) found that the Thinking Introversion scale which has been reported to measure reflective thought and interest in ideas and concepts correlates negatively with the Economic value for National Merit Scholars in various fields of study, whereas it correlates positively with the Theoretical value. They also found that the Complexity scale correlates positively with the Aesthetic value. The Complexity scale "distinguishes between people who perceive and react to complex aspects of their environment and those who react to more simple stimulus patterns," (Warren & Heist, 1960). Earlier, Cantril and Allport (1933) had provided support for a positive relationship between Introversion and the Theoretical value. They used Heidebreder's scale for Extroversion-Introversion is also descriptive of Aesthetic and Religious persons as reported at that time also by Stromwell (1933).

Stromwell (1933) also found that persons who score high on the SOV's Aesthetic and Religious scales tend to make more M (Movement) responses on the Rorschach inkblot test than other subjects. These motion responses are interpreted as indications of creativity and introversion (Beck, 1933a; 1933b). Sisson and Sisson (1940) also found that introverts had higher Aesthetic scores than extroverts. The subjects were placed into the introverted or extroverted category based on their scores on the Bernreuter's Personality Inventory. Thus, these studies show that Aesthetic, Religious, and Theoretical values are more likely to be characteristic

of introverted individuals than extroverted ones. In addition, persons with dominant Theoretical values tend to have more liberal attitudes than do other persons (Pintner, 1933). Pintner found that these individuals have more "liberal attitudes with reference to religion, war, and the Negro; whereas Political and Economic interests seem to go with a more conservative attitude toward these problems."

There has also been an interest in the relationship between values and underlying personality adjustments, but these studies have been inconclusive. Pintner and Forlano (1939a) compared the SOV with the Thurstone Personality Schedule to demonstrate a relationship between values and emotional instability. They felt that instability was an outcome of conflicting values or of intense values. However, no significant differences were found between either high or low scoring individuals, or dominant values and patterns of response on the Personality Schedule. In a similar comparison, Pintner and Forlano (1939b) sought to "compare groups of high and low interest values with reference to their neurotic tendency." Although no statistically significant differences were found, there was a tendency for the high interest value groups to be more adjusted.

Smith, Hansell, and English (1965) also tested the proposition that values and mental health are related. They reasoned that "certain values might 'raise the threshold' of tolerated intrapsychic stress, or preserve interpersonal and social role functioning in the face of emotional discomfort." They found a significant relationship only between the Theoretical value and the "well" mental health status as measured by a semi-objective questionnaire. Trends in the data indicated that dominant

Aesthetic interests were related to high levels of psychopathology.

Persons with no dominant value orientations also scored high on psychopathology ratings. Although Aesthetic persons are often thought of as neurotic and Smith et al. (1965) found some evidence to support this notion, Wheatley and Sumner (1946) failed to find a definite relationship for this conclusion. However, this latter study used a specialized group of subjects (black music students).

Research in this area, as cited above, indicated that relationships between values and personality characteristics do exist, and that this can be a fruitful avenue for further research. The studies show that persons grouped by value do differ on various personality measures. Evidence for the relationships is not definitive but trends in the data do indicate that some generalizations could be drawn with further evidence. Such investigations would lend additional support also to the position that values are an indispensable concern for psychology.

C H A P T E R I I

EXPERIMENTAL DESIGN

. Method

In September, 1964, a battery of tests was administered to the incoming freshman class (193 males and 213 females) at York University in Toronto, Ontario, Canada.¹ Included in this battery were the SOV and the Adjective Check List (ACL, (Gough & Heilbrun, 1965)). The six value scales of the SOV and the twenty-four personality scales of the ACK are listed with a brief description of each in Appendices I and II respectively. Information on reliability and validity of these tests can also be found there.

For 159 of the males and 170 of the females, academic majors were obtained and were classified into one of the following fields: Humanities, Social Sciences, or Natural Sciences.

A z-test was performed comparing the scores of this Canadian population with that portion of the American standardization group (Allport, et al., 1960) for which standard deviations were available.

A multiple discriminate analysis was performed comparing the SOV profiles of the males and females. Another multiple discriminate analysis compared the profiles of students in each of the major areas for males while another analysis compared the profiles of the major areas for females.

In comparing the SOV with the ACL two approaches were taken. In both comparisons, males and females were divided into separate groups. First, in order to determine if the ACL profile could in fact distinguish

¹The data for this study are part of a five year developmental study of University students undertaken at York University in Toronto by Dr. Dee G. Appley, formerly Director of the Psychological Services Department presently at the University of Massachusetts.

among the values, the subjects were divided into six groups depending on their dominant value. Dominant value was determined by the highest numerical score. If there were two or more identical high scores dominant value was determined by which of these tying scores was highest above the group (male or female) mean. A multiple discriminant analysis was then performed to compare the ACL profiles of these groups.

Then (anticipating confirmation of the ability of the ACL to distinguish among these groups) the relationship between each value and the ACL was studied by dividing all subjects (for whom all scores were available) into high, medium, and low scoring groups for that value. The scores which determined these groups were chosen in order to make each of the groups as nearly one-third of the sample population as possible. A multiple discriminant analysis was performed to determine if the ACL could distinguish among these groups for each value, and, if it could, what the relationship was between the value and the ACL scales.

The multiple discriminant analysis used for these tests employed a program by Veldman (1967) which yielded an F-statistic indicating the probability that all population profiles were identical and the F-statistics for each scale indicating the probability that all group scores on that scale were identical.

Hypotheses

The specific null hypotheses to be tested are:

1. There will be no significant differences between the Canadian population used in this study and the American standardization population used by Allport et al. (1960).

2. There will be no significant differences between the sexes on each of the six value scales.

3. The SOV profiles will not distinguish among Natural Science, Social Science, and Humanities majors for females or males.

4. The six groups (male or female) based on dominant SOV scores, will not be distinguished by their profiles on the twenty-four ACL scales.

5. There will be no significant differences among the high, medium, and low SOV groups on their ACL profiles.

6. For each of the ACL scales and each value, there will be no difference among the high, medium, and low value groups.

It is expected that each of the null hypotheses except the first and the sixth will be rejected. Hypothesis 6 really consists of 144 different hypotheses.

The reason for not expecting a rejection of the first hypothesis in the face of results which generally establish cross cultural differences on the SOV is that it is felt that there is an overriding similarity between America and at least the English speaking portion of Canada.

That there is a significant difference between males and females on the SOV has been established by all previous research. There is no reason to expect this study to contradict this result.

Similarly the third hypothesis should be rejected on the basis of previous studies. In fact, based on these previously mentioned studies it is predicted that: the Humanities majors will score high on the Aesthetic scale but low on the Social scale; the Natural Science majors will score high on the Theoretical scale and low on the Religious scale; and the Social Science majors will score high on the Political scale and low on the Religious scale. In addition to the empirically based predictions, it is intuitively predicted that the Social Science majors will score high on the Social scale.

The reason for suspecting that the dominant value groups, as well as the high, medium, and low groups for each value, will be differentiated by their ACL profiles is that it seems reasonable that one's personality attributes should be related to the values he holds.

As mentioned above, hypothesis 6 really consists of 144 different hypotheses. The basis for predicting acceptance or rejection of these hypotheses is the comparison of the subjective descriptions of the different values by Spranger (1928) and of the ACL scales by Gough and Heilbrun (1965). Based on these descriptions, the author decided subjectively that (1) there seems to be no relationship between given value and given ACL scale; (2) persons scoring high on given value should score high on ACL scale while persons scoring low on the value should score low on the ACL scale; or (3) persons scoring high on given value should score low on ACL scale while persons scoring low on the given value should score high on the ACL scale.

The first of these alternatives amounts to a prediction of acceptance of hypothesis 6 for value and ACL scale. It should be noted that such prediction is based solely on the author's opinion that there is no clear relationship between the descriptions of the scales. It should not be surprising if in fact relationships are exhibited in some of these cases.

In the case that alternative (2) holds, i.e., the scale significantly differentiates among the groups and the high value group scores highest on the ACL scale and the low value group scores lowest on the ACL scale, it shall be said that there is a significant positive relationship between the value and the ACL scale. Similarly, if alternative (3) holds it shall be said that there is a significant negative relationship between the value and the ACL scale. It should be noted that no prediction of positive or negative correlation of scores is made.

The predictions for the 144 sub-hypotheses of hypothesis 6 are presented in Table 4 where predicted acceptance of the null hypothesis is indicated by a blank while predicted significant positive and negative relationships are indicated by "+" and "-" respectively. The abbreviations used in Table 4 are those of Gough and Heilbrun (1965). The full names of the scales are in Appendix II (see Table 4).

TABLE 4
Predictions of Acceptance or Rejection
of Sub-hypotheses of Hypothesis 6

ACL Scale	Theo	Econ	Aesth	Soc	Pol	Rel
No. Ckd			-	+		+
Df	-	+	-	+	+	+
Fav	-	+		+		+
Unfav	+		+		+	-
S-Cfd	+	+			+	-
S-Cn		+		+	+	+
Lab	+	-	+	+	-	-
Per Adj		+	-	+		+
Ach	+	+	-		+	
Dom	+	+	-	-	+	-
End	+	+		+		+
Ord	-	+	-	-		+
Int	+	-	+	+	+	
Nur	-	+	-	+	-	+
Aff	-	+	-	+	+	+
Het						
Exh	+	+	-		+	
Aut	+	-	+	-	+	-
Agg	+	+		-	+	-
Cha	+	-	+			
Suc	-		-	+	-	+
Aba	-	+	+	+	-	+
Def	-	+	-	+	-	+
Crs	-		+		-	+

Note: A blank space indicates predicted acceptance of the null hypothesis. A + indicates a predicted significant positive relationship. A - indicates a predicted significant negative relationship.

C H A P T E R I I I

RESULTS

The z-test performed on the SOV scores of this Canadian population and the American standardization population of Allport et al. (1960) yielded significant differences on five of the six values for the sexes combined (see Table 5). The Americans scored significantly higher than the Canadian subjects on the Economic and Religious scales; the Canadian subjects scored significantly higher than the Americans on the Aesthetic, Social, and Political scales.

The scores of the males and females in the Canadian sample differed with high significance overall ($F = 25.11$; $p < .0001$) and on each of the scales (see Tables 5 and 6). Each value was significantly different for each sex group at the $p < .0001$ level of significance (see Table 5). Males scored higher than the females on the Theoretical, Economic, and Political values, whereas females scored higher on the Aesthetic, Social, and Religious values (see Table 6).

Comparison of college major with scores on the SOV was made for males and females separately (see Table 6). The analysis yielded an overall F-ratio of 3.19 ($p = .004$) for the males indicating that the value profile for males can be successfully used to discriminate among college majors broadly classified as Humanities, Social Sciences, and Natural Sciences. The Theoretical, Economic, and Aesthetic values were the only values that, by themselves, significantly discriminated among the male groups (see Table 5). For these scales the Humanities majors scored highest on the Aesthetic value and lowest on the Theoretical and Economic values; the Natural Science majors scored highest on the Theoretical

TABLE 5

Significance of Overall and Individual Value

Scale Differences in SOV Scores by

Sex, Major Area, and Nationality

Group	Overall SOV Profile	Individual SOV Scales					
		Theo.	Econ.	Aes.	Soc.	Pol.	Rel.
Canadian Sample Males (N=193) vs. Females (N=213)	****	****	****	****	****	****	****
Canadian Sample Males by Major Area ^x	***	**	***	***	--	--	--
Canadian Sample Females by Major Area ^{xx}	*	*	--	*	*	--	--
C nadians (N=406) vs. Americans (N=3778)	****	--	***	***	**	***	***

Legend: -- $p > .05$ * $p < .05$ ** $p < .01$ *** $p < .001$ **** $p < .0001$ ^x = Humanities (N=65), Social Sciences (N=57), Natural Sciences (N=37)^{xx} = Humanities (N = 91), Social Sciences (N=59), Natural Sciences (N=20)

TABLE 6
SOV Scores By College Major and Sex
For Canadian Sample N=406

SOV Scale	Total	Major Area of Study		
		Humanities	Social Sciences	Natural Sciences

Males

	N=193	N=65	N=57	N=37
Theoretical	42.81	41.08	43.02	45.41
Economic	40.55	35.97	42.02	43.70
Aesthetic	39.07	42.86	36.49	36.46
Social	38.90	40.09	39.65	37.22
Political	44.69	43.85	45.05	45.70
Religious	34.06	36.29	33.88	31.51

Females

	N=213	N=91	N=59	N=20
Theoretical	37.45	36.73	36.85	41.30
Economic	34.70	34.81	34.41	36.70
Aesthetic	44.95	46.41	43.86	41.35
Social	42.77	41.14	45.08	42.05
Political	40.17	41.01	39.85	38.05
Religious	39.87	39.87	39.71	40.55

Note: Major Area information not available for 34 males and for 43 females.

and Economic scales and were just barely lower on the Aesthetic scale. Social Science majors were in the middle position on all of these scales.

For the females an overall F-ratio of 2.18 ($p = .01$) was obtained indicating that it is possible to differentiate value profiles of females on the basis of their college major. The values which, by themselves, significantly discriminated among Humanities, Social Sciences, and Natural Sciences were the Theoretical, Aesthetic, and Social scales (see Table 5). For these scales the Natural Science majors scored highest on Theoretical and lowest on Aesthetic; the Humanities scored highest on Aesthetic, lowest on Social, and by a small margin lowest on Theoretical; the Social Science majors scored highest on Social (see Table 6).

In the second part of this study, multiple discriminate analyses were performed to determine whether or not the Adjective Check List (ACL) scales could distinguish among the six dominant SOV groups, where dominant value groups were determined by highest numerical score. Two separate analyses were performed, one for each sex group.

For the males, the analysis yielded an overall F-ratio of 1.11 whose probability of .209 indicated that the ACL profiles for males by dominant value group did not differ significantly. Thus, the hypothesis that the ACL would yield significantly different profiles for the six value groups was not confirmed. However, nine individual ACL scales did significantly differentiate among the dominant value groups; these were Endurance ($p < .001$), Total Number of Adjectives Checked ($p < .01$), Achievement ($p < .01$), Order ($p < .01$), Self-Confidence ($p < .05$), Dominance ($p < .05$), Succorance ($p < .05$), Abasement ($p < .05$), and Deference ($p < .05$). Scores for these ACL scales for the six dominant value groups are presented in Table 7. These are presented more graphically in Figure 1 so that a comparison of profiles for the dominant value groups can be made.

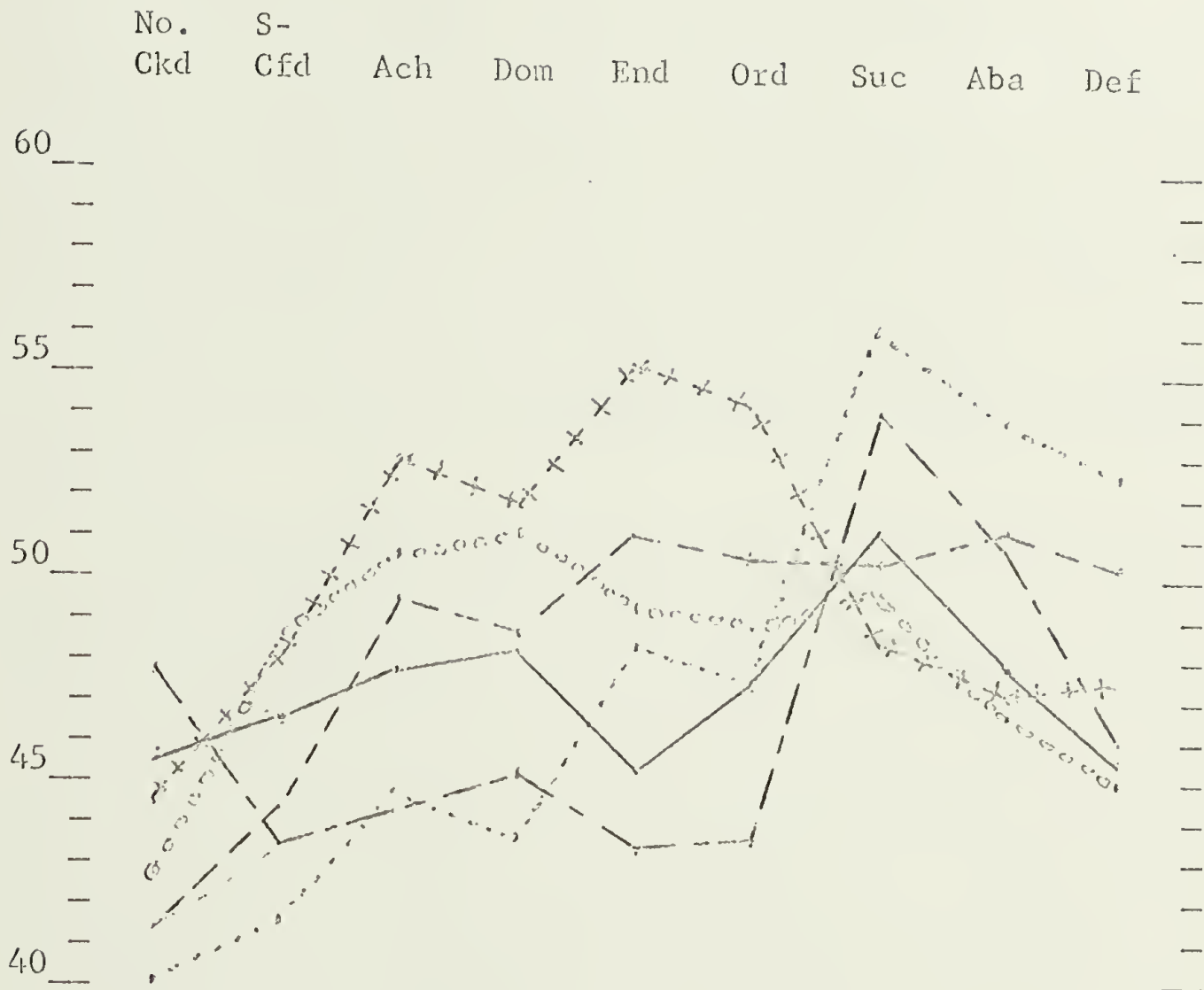
TABLE 7

ACL Scores For Males by Dominant SOV Score

Significant ACL Scale	SOV Dominant Value Group					
	Theo. N = 25	Econ. N = 38	Aes. N = 32	Soc. N = 22	Pol. N = 50	Rel. N = 26
No. Ckd	45.28	41.45	47.72	40.10	42.82	44.65
S-Cfd	46.44	44.24	43.31	41.86	48.64	48.31
Ach	47.76	49.58	44.25	44.62	50.70	52.88
Dom	48.24	48.95	45.31	43.90	51.02	51.73
End	45.20	51.16	43.63	48.52	49.26	55.00
Ord	47.24	50.61	43.63	47.24	48.80	54.35
Suc	51.12	50.47	54.09	56.05	49.74	48.65
Aba	47.92	51.29	50.72	53.90	46.62	46.88
Def	45.52	50.32	46.00	52.48	45.08	47.50

FIGURE I

Profiles of Male Dominant Value Groups on ACL
Scales Which Significantly Differentiated Them



Legend: Theoretical _____
 Economic - - - - -
 Aesthetic _ _ _ _ _
 Social
 Political oooooooooooooo
 Religious + + + + +

For the females, the overall F-ratio of 1.08 ($p = .275$) also indicated that the ACL profiles of the six dominant value groups did not differ significantly. Here again, as with the males, the hypothesis that the ACL would yield significantly different profiles for the six value groups was not confirmed. There were, however, seven of the individual scales which did significantly differentiate among the six dominant value groups; these were Counseling Readiness ($p < .01$), Endurance ($p < .05$), Nurturance ($p < .05$), Autonomy ($p < .05$), Aggression ($p < .05$), Abasement ($p < .05$), and Deference ($p < .05$). Scores for these ACL scales for the six dominant value groups are presented in Table 8. A comparison of profiles for the dominant value groups may be made by reference to Figure 2.

These results demonstrate that some ACL scales could distinguish among the six dominant value groups, but they provide only minimal evidence of the relationship between these values and the ACL. In order to explore this relationship more precisely, separate multiple discriminate analyses were performed for each value for males and for females divided into High, Middle, and Low groups based on their scores on the given value.

The Religious value was the only value for which the ACL profiles significantly ($p < .01$) differentiated among the High, Middle and Low groups for the males. For the females there were three value scales for which the ACL profiles could significantly differentiate among the High, Middle, and Low groups. These were Economic ($p < .01$), Aesthetic ($p < .05$) and Religious ($p < .01$).

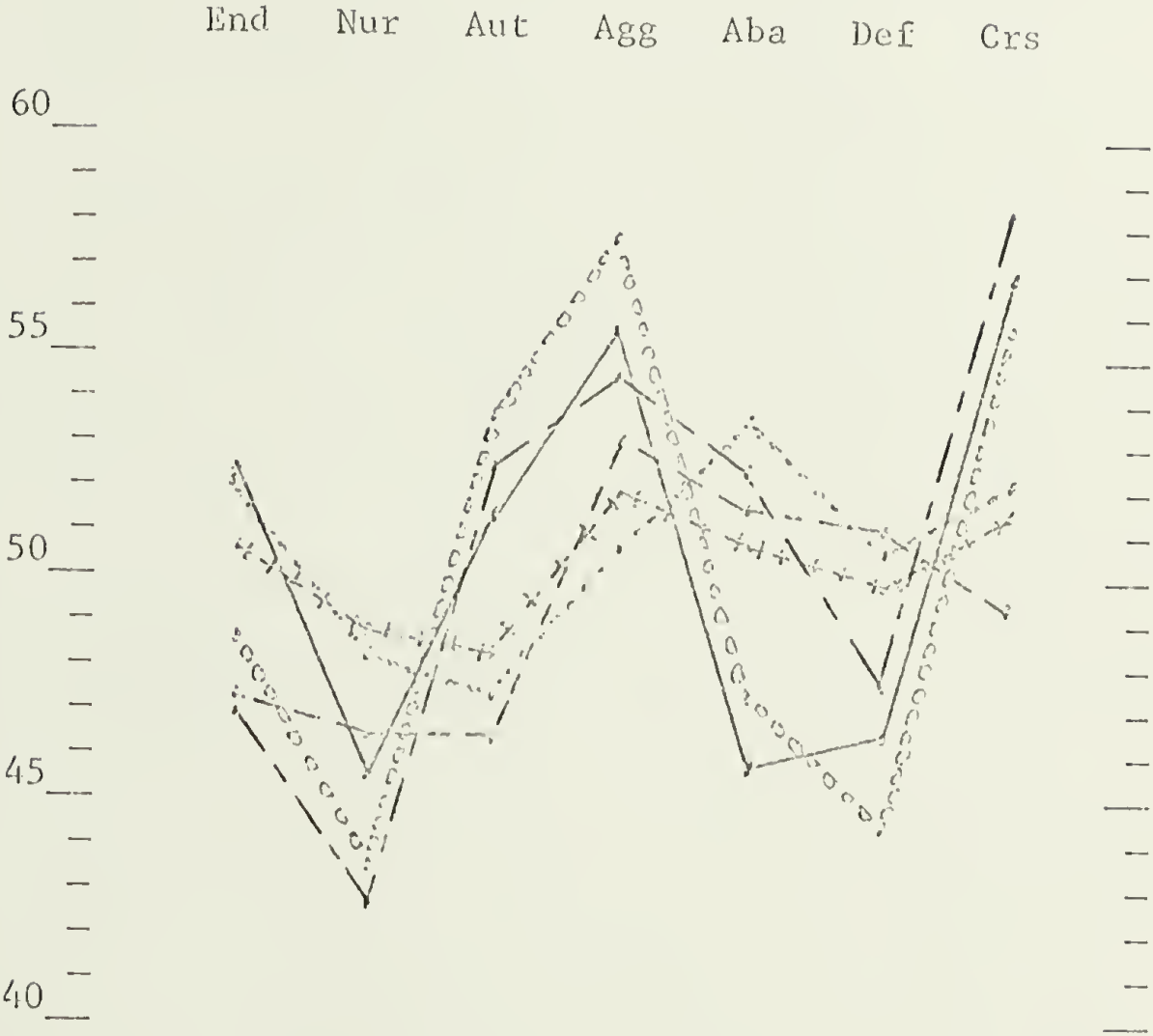
For the males no individual ACL scales could discriminate among the High, Middle, and Low Theoretical groups. Two scales discriminated among the High, Middle, and Low Economic Groups. Eleven scales individually

TABLE 8

ACL Scores For Females by Dominant SOV Score

Significant ACL Scale	SOV Dominant Value Group					
	Theo. N = 6	Econ. N = 12	Aes. N = 70	Soc. N = 55	Pol. N = 26	Rel. N = 44
End	52.33	47.50	47.37	52.02	48.81	50.73
Nur	45.50	46.58	42.86	48.26	43.88	48.82
Aut	51.33	46.42	52.19	47.41	53.58	48.27
Agg	55.33	53.00	54.51	50.67	57.46	51.80
Aba	45.67	51.75	52.40	53.67	47.42	50.77
Def	46.50	51.25	47.49	50.83	44.50	49.91
Crs	57.00	49.58	58.24	52.15	55.73	51.55

FIGURE 2
Profiles of Female Dominant Value Groups on ACL
Scales Which Significantly Differentiated Them



Legend: Theoretical _____
Economic - - - - -
Aesthetic - - - - -
Social
Political oooooooooooooo
Religious + + + + +

discriminated among the High, Middle, and Low Aesthetic groups while five, eight, and six ACL scales significantly differentiated among the High, Middle, and Low Social, Political, and Religious groups respectively. The scores and levels of significance for these scales are presented in Table 9 (see Table 9). Since the subjects were divided as nearly as possible into thirds, the SOV scale scores which determined the High, Middle, and Low groups vary from value to value. They are also presented in Table 9.

For the females, three, six, and ten ACL scales individually discriminated among the High, Middle, and Low Theoretical, Economic, and Aesthetic groups respectively while twelve discriminated among the High, Middle, and Low Social groups. No ACL scale could significantly discriminate among the High, Middle, and Low Political groups while three discriminated among the High, Middle, and Low Religious groups. The scores and levels of significance for these scales are presented in Table 10 (see Table 10).

Tables 11 and 12 summarize the relationships between the values and the ACL scales and can be compared with the predicted relationships of Table 4. In reporting the results for each value group, if the High, Middle, and Low groups have scores in ascending order on the ACL scales, then the results will be listed as a positive relationship (+), if in descending order than a negative relationship (-). Results not conforming to either of these patterns will be specifically described by initials in ascending order. Thus "HLM" will represent the attainment of the highest score on the given ACL scale by the Middle value group and the lowest score on the ACL scale by the High value group. (see Tables 11 and 12).

TABLE 9

Scores on Significant ACL Scales^x for Males Classified
As Low, Middle, or High on SOV Value^{xx}

ACL Scale	SOV Group		
	Low	Middle	High

Economic Value

	N = 61 Scores to 36	N = 72 Scores 37 to 45	N = 60 Scores From 46
Het *	44.56	48.94	45.95
Crs *	54.39	50.29	53.32

Aesthetic Value

	N = 63 Scores to 33	N = 63 Scores 34 to 42	N = 67 Scores From 43
Df ***	49.75	47.63	43.67
Fav *	45.73	43.37	40.77
Unfav *	52.02	54.76	56.66
S-Cfd *	47.20	47.14	43.18
Per Adj **	47.11	44.00	40.93
Ach **	51.60	49.14	45.30
Dom **	50.57	50.03	45.37
End **	51.39	49.89	45.58
Ord *	50.63	49.34	46.15
Nur *	49.71	46.31	45.60
Aff **	47.73	46.98	45.25

Social Value

	N = 60 Scores to 35	N = 64 Scores 36 to 41	N = 69 Scores From 42
Int *	46.60	45.70	50.10
Nur **	44.73	45.98	50.41
Aff *	44.82	44.03	47.91
Aut *	52.53	52.14	48.64
Agg **	53.65	55.38	50.19

x = Significantly differentiating among High, Middle, and
Low Groups

xx = Divided into thirds.

(continued next page)

TABLE 9 (Continued)

ACL Scale	SOV Group		
	Low	Middle	High
Political Value			
	N = 58 Scores to 40	N = 68 Scores 41 to 47	N = 66 Scores From 48
S-Cfd *	43.81	44.85	48.55
Ach *	46.69	48.03	51.02
Dom *	46.36	47.76	51.47
Nur **	50.38	47.34	44.02
Aut *	50.00	49.46	53.59
Agg **	50.88	52.16	55.92
Aba **	51.16	50.51	46.21
Def *	49.34	48.63	44.60
Religious Value			
	N = 67 Scores to 29	N = 63 Scores 30 to 39	N = 63 Scores From 40
Unfav **	58.12	52.11	53.11
Nur ***	42.58	49.92	49.32
Aut **	54.18	47.90	50.75
Agg *	55.61	50.57	52.60
Aba *	47.31	51.41	49.07
Def **	44.16	50.65	47.89

Legend: * $p < .05$
 ** $p < .01$
 *** $p < .001$

TABLE 10
 Scores on Significant ACL Scales^x for Females Classified
 As Low, Middle, or High on SOV Value^{xx}

ACL Scale	SOV Group		
	Low	Middle	High

Theoretical Value

	N = 71 Scores to 33	N = 72 Scores 34 to 40	N = 69 Scores From 41
Aut *	48.82	48.82	52.38
Agg *	51.87	52.52	55.48
Def *	49.46	50.22	46.20

Economic Value

	N = 70 Scores to 30	N = 71 Scores 31 to 37	N = 71 Scores From 38
No. Ckd **	46.83	43.70	41.75
Lab *	51.46	50.44	46.51
Aut *	52.46	48.21	49.30
Cha *	51.23	47.69	46.69
Def *	46.53	50.21	49.21
Crs *	56.81	53.66	52.96

Aesthetic Value

	N = 67 Scores to 40	N = 76 Scores 41 to 48	N = 69 Scores From 49
Unfav *	50.18	51.84	55.79
S-Cn *	49.42	47.74	44.88
Per Adj *	47.58	44.66	42.64
End *	51.97	49.01	47.87
Ord *	50.85	48.47	47.04
Nur **	48.28	46.68	42.67
Aut ***	46.78	49.76	53.32
Agg *	51.16	53.07	55.54
Def *	50.62	48.88	46.51
Crs ***	51.36	53.93	58.07

x = Significantly differentiating among High, Middle, and Low groups.

xx = Divided into thirds.

(continued next page)

TABLE 10 (Continued)

ACL Scale	SOV Group		
	Low	Middle	High

Social Value			
	N = 69 Scores To 39	N = 71 Scores 40 to 46	N = 72 Scores From 47
Df *	42.46	44.34	46.63
S-Cfd *	45.75	48.99	45.60
S-Cn *	45.71	46.07	50.15
End *	47.96	49.11	51.58
Int *	44.62	48.31	49.71
Nur **	43.48	45.42	48.64
Exh **	47.51	49.63	44.75
Aut **	52.00	51.21	46.82
Agg **	54.59	55.04	50.25
Aba *	50.49	50.18	53.90
Def *	47.28	47.24	51.39
Crs *	57.33	54.24	51.94

Religious Value			
	N = 75 Scores To 35	N = 62 Scores 36 to 44	N = 74 Scores From 45
Fav *	42.84	45.85	47.16
Nur **	42.99	46.11	48.47
Agg *	55.55	52.56	51.74

Legend: * $p < .05$

 ** $p < .01$

 *** $p < .001$

TABLE II

Relationships^x Between Values and ACL Scales for Males

ACL Scale	Theo	Econ	Aesth	Soc	Pol	Rel
No. Ckd						
Df			-			
Fav			-			
Unfav			+			MHL
S-Cfd			-		+	
S-Cn						
Lab						
Per Adj			-			
Ach			-		+	
Dom			-		+	
End			-			
Ord			-			
Int				MLH		
Nur			-	+		LHM
Aff			-	MLH		
Het		LHM				
Exh						
Aut				-	MLH	MLH
Agg				HLM	+	MHL
Cha						
Suc						
Aba					-	LHM
Def					-	LHM
Crs		MHL				

Note: A blank space indicates no significant difference among the Low, Middle, and High value groups on that scale. A + indicates a positive relationship while A - indicates a negative relationship. If the groups differ significantly but in neither an ascending or descending fashion, then the initials are listed in ascending order.

X = As determined by scores of Low, Middle, and High Value groups.

TABLE 12

Relationships^x Between Values and ACL Scales for Females

ACL Scale	Theo	Econ	Aesth	Soc	Pol	Rel
No. Ckd		-				
Df				+		
Fav						+
Unfav			+			
S-Cfd				HLM		
S-Cn			-	+		
Lab		-				
Per Adj			-			
Ach						
Dom						
End			-	+		
Ord			-			
Int				+		
Nur			-	+		+
Aff						
Het						
Exh				HLM		
Aut	xx	MHL	+	-		
Agg	+		+	HLM		-
Cha		-				
Suc						
Aba				MLH		
Def	HLM	LHM	-	MLH		
Crs		-	+	-		

Note: A blank space indicates no significant difference among the Low, Middle, and High value groups on that scale. A + indicates a positive relationship while a - indicates a negative relationship. If the groups differ significantly but in neither an ascending or descending fashion, then the initials are listed in ascending order.

x = As determined by scores of Low, Middle, and High Value groups.

xx = Low and Middle value groups tied to low score.

C H A P T E R I V

DISCUSSION

The first hypothesis to be tested was that there would be no significant difference between the Canadian population used here (with males and females combined) and the American standardization population of Allport et al. (1960) on any of the SOV scales. The rejection of this hypothesis for each of the values except Theoretical ran contrary to the prediction of this writer. It does in fact add to the heavy weight of evidence for cross-cultural differences in value patterns which was summarized in Chapter I, (Nobechi & Kimura, 1957; Ray-Chowdhury, 1959; and Rodd, 1959), and indicates that the author's opinion that the American and Canadian cultures were essentially similar was invalid.

The second hypothesis, namely that the males and females would not differ on any of the six value scales, was solidly rejected as it was expected to be. This was in accordance with all previous research.

As was pointed out in Chapter I, the view of Katz and Schank (1938) that the male-female differences are culturally dependent has been minimally substantiated by the research in the area. In the present study the results appear inconclusive in this respect. The males tended to obtain higher scores than the females on the same values as the American males obtained over the American females. However, the two sexes here rank order the values differently than their American counterparts (see Tables 2 and 6). While one must use caution in the interpretation of rank orders, this tends to indicate that the role of the sexes in Canada may in fact differ from that in America.

Because of the significant differences between the males and females on the SOV all further analyses were done separately. One such

analysis was the comparison of SOV profiles of three broad classifications of academic majors: Humanities, Social Sciences, and Natural Sciences. The third hypothesis was that these groups would not be distinguished by their SOV profiles. It was predicted that for both the males and the females this hypothesis would be rejected. This prediction was verified in both cases (see Table 5). In addition, three of the SOV scales significantly differentiated the major areas for females and three significantly differentiated the major areas for males.

Several predictions concerning the relationships of these majors and the specific values were made. Both male and female Humanities majors scored highest on the Aesthetic scale as predicted. In addition the female Humanities majors fulfilled expectations by scoring lowest on the Social scale. The corresponding confirmation cannot be made for the males since the Social scale did not significantly differentiate among the males major areas.

Natural Science majors (male and female) placed significantly high on the Theoretical value scale as predicted. The Religious scale was not significant for either sex so the predicted low score for Natural Science majors can be neither confirmed nor denied. In an unpredicted result, male Natural Science majors scored higher than the other two major areas on the Economic scale.

It was predicted that Social Science majors would score high on the Political and Social scales and low on the Religious scale. Of these, only the Social scale was significant and then only for females. Their high score on this scale was in accordance with predictions. Judgment must be withheld on the other predictions. In fact, few clues are available since the Social Science majors ranked in the middle on the other scales

mentioned, except that the female Social Science majors did score lowest by a small margin (.16) on the Religious scale.

The one unpredicted result, namely that male Natural Science majors scored highest on the Economic value may be due to the fact that they can, on the average, expect high paying jobs. This fact may be one reason for this result. The lack of significance on the Economic scale for females may be due to the fact that the problem of providing for financial security is not as important to them as to males. This observation is supported by the tendency for males in general to score significantly higher than females on the Economic scale.

The fact that the SOV was able to differentiate among these broad major areas provides confirmation for several studies mentioned in Chapter I (Golden, 1940; Seashore, 1947; Kelley & Fiske, 1950; Deignan, 1958; Kennedy & Smith, 1963; Huntley, 1967; and Pol, 1967).

The second part of this study attempted to establish a relationship between values and personality. The fourth hypothesis was that the six (male or female) dominant value groups would not be distinguished by their profiles on the twenty-four ACL scales. It was predicted that this hypothesis would be rejected but this prediction was not in fact confirmed. Because of this lack of significance based on overall ACL profiles no general conclusions can be stated. However, since nine ACL scales could, by themselves, discriminate among the six male dominant value groups and seven could discriminate among the six female value groups, there appears to be sufficient evidence to justify further exploration of the relationships between values and the ACL scales.

This analysis was accomplished by dividing the entire male population into three groups for each value based on their scores on this value. A similar division was made with the females. Then the profiles

of the High, Middle, and Low value groups on the twenty-four ACL scales were compared.

Hypothesis five stated that no significant differences in ACL profile would be obtained for any of the six values for either sex. It was predicted that this hypothesis would be rejected for each case. However, it was rejected for the males only for the Religious value. In the case of the females hypothesis five was rejected for the Economic, Aesthetic, and Social values.

These results establish that, for the scales mentioned, there is a definite relationship between values and certain aspects of personality as measured by the ACL. Much more light is shed upon this relationship when one examines those individual ACL scales which were able to discriminate among the High, Middle, and Low value groups.

Hypothesis six states that none of the ACL scales could discriminate among the High, Middle, and Low groups on any value. This really consists of 144 hypotheses for each sex, since there are twenty-four ACL scales and six values. The predictions for these sub-hypotheses were summarized in Table 4. The results are summarized in Tables 11 and 12. A comparison will show that several predictions of rejection were made that were not verified. In these cases judgment is reserved. For several other cases the hypothesis was rejected when in fact it was predicted that it would be accepted. These cases will be discussed shortly.

It will be recalled that predictions of acceptance or rejection were based solely upon the descriptions of the ACL scales provided by Gough and Heilbrun (1965) and the descriptions of the value types provided by Spranger (1928) and utilized by Allport et al. (1960). If the descriptions sounded similar, then a positive relationship was predicted; if they sounded opposite then a negative relationship was predicted

(where "positive relationship" consists of rejection of hypothesis six with the Low, Medium, and High value groups scoring in ascending order on the ACL scale). It might be suspected that so subjective a prediction method might yield a high rate of incorrect predictions. However, there was no case for the males for which a positive relationship was predicted and a negative relationship was obtained or vice versa. Six positive relationships were obtained, each of which had been predicted. Fourteen negative relationships were obtained, eleven of which had been predicted; in the other three cases no difference had been predicted.

Similarly for the females there was no case in which a relationship of one type was predicted and a relationship of the other type was obtained. Twelve positive relationships were obtained all but one of which had been predicted; thirteen negative relationships were obtained, eight of which had been predicted. It might be remarked at this stage that the somewhat better record of prediction for the positive relationships could be due to the tendency, at least for this writer, to more easily recognize similarities in descriptions than opposites.

For several of the comparisons for which the ACL scale significantly differentiated among the High, Middle, and Low value groups, the highest or lowest ACL scale score was achieved by the middle value group. Thus neither a positive or negative relationship was obtained. However, if one merely compares the High and the Low value groups, calling a relationship positive if the High value group scores higher than the low value group on the ACL scale the predictions are still safe from contradiction.

This verification is quite reassuring in terms of the accuracy of the subjective descriptions accompanying the ACL and the SOV. However, by its nature it confirms old knowledge rather than establishes new knowledge.

What is perhaps more enlightening are those cases in which no relationship was predicted and yet a significant relationship was obtained. These cases shall be examined value by value and compared with previous research.

None of the ACL scales could discriminate among the High, Middle, and Low Theoretical groups for the males, while the three ACL scales which differentiated among the High, Middle, and Low Theoretical females were each predicted to do so. Thus, no new information about the Theoretical value was obtained. One can, however, fill in this gap by noting the results of other researchers.

Allport and Cantril (1933) and Warren and Heist (1960) reported low positive correlations between Theoretical values and introversion. The former study produced a correlation coefficient of .32 between these two attributes for both sexes with Heidebreder's Extroversion-Introversion test. The latter study found differential correlation coefficients between these two characteristics for the sexes. The coefficients varied from .1 to .2 for the males and .4 for the females. Schaffer (1936) found a positive correlation for males and females between the Theoretical value and intelligence as measured by the American Council on Education's College Sophomore Test (ACECST). Supporting evidence for this relationship is provided by Warren and Heist (1960) who found that the gifted students and science majors held the Theoretical value more highly than did other students. Duffy and Crissy (1940) found a consistent positive relationship between the Theoretical value and class grades. However, this relationship did not attain significance. Pintner (1933) found a positive relationship between the Theoretical value and an intelligence test. Cantril and Allport (1933) also found a positive correlation between grades and the Theoretical value.

The two ACL scales which significantly differentiated among the High, Medium, and Low Economic males were not predicted to do so. One must be cautious in interpreting this information since neither of these attained a strict positive or negative relationship. It is noted, however, that on the Heterosexuality scale the High Economic group scored higher than the Low Economic group. According to Gough and Heilbrun (1965) "the high scorer on Het is interested in the opposite sex as he is interested in life, experience, and most things around him in a healthy, direct, and outgoing manner." The male High Economic group scored lower on the Counseling Readiness scale than the Low Economic group. This relationship is strengthened by the fact that the females exhibited a strictly negative relationship between the Economic value and the Counseling Readiness scale. Based on these scores one could say that the person with High Economic value is "self-confident, poised, sure of himself, and outgoing" (Gough & Heilbrun, 1965). In addition, the females established an unpredicted significant negative relationship between the Economic value and the Total Number of Adjectives Checked scale. This indicates a tendency for those females with higher Economic value to be "quiet and reserved, . . . taciturn and aloof" (Gough & Heilbrun, 1965).

Other studies help to give added information about individuals who score high on the Economic scale. Pintner (1933) found a negative correlation between intelligence and the Economic value. This finding is supported by Duffy and Crissy (1940) who found a tendency for "poor" students to have higher Economic values than "good" students. Agreement is also found in Warren and Heist's (1960) study. They found that gifted male and female students have lower Economic values than do average students.

For both the males and females an unpredicted negative relationship

was established between the Aesthetic value and the Endurance scale. The description of the Endurance scale indicates that those who have high Aesthetic scores are not persistent in their efforts. Negative and positive relationships between the Self-control and Aggression scales respectively were also obtained by the females but not predicted. These indicate a "competitive" and "headstrong" aspect of the highly Aesthetic female. The males established negative relationships between the Aesthetic value and the Self-confidence and Number of Favorable Adjectives Checked scales, indicating an aspect of self-doubt for the highly Aesthetic males.

Warren and Heist (1960) found that the Complexity scale of the Omnibus Personality Inventory correlated .4 with the Aesthetic scale of the SOV. They define the Complexity scale as "distinguishing between people who perceive and react to complex aspects of their environment and those who react to more simple stimulus patterns." The fact that the Aesthetic individual sees himself as a thinker and not a doer is supported by the results of Sisson and Sisson (1940). They found that persons who had high Aesthetic values were significantly more introverted than subjects who had other dominant values.

There exists the popular notion that the high Aesthetic person is neurotic. The high Aesthetic individual does tend to worry about himself and his abilities, yet Duffy and Crissy (1940) found that students with high Aesthetic values tend to make high grades. Warren and Heist (1960) found that high Aesthetic scores correlated positively with the Thinking Introversion scale of the Omnibus Personality Inventory. This scale measures liking for abstract ideas and concepts. The results of Smith, Hansell, and English (1965) did suggest that high Aesthetic subjects were more likely to be related to high levels of psychopathology than subjects with other values. (Mental health status was measured by a semi-objective

questionnaire.) The results did not attain significance. Pintner and Forlando (1939a; 1939b) did not find any relationship between the value scales of the SOV and emotional stability as measured by the Thurstone Personality Schedule. The hypothesized relationship between neuroticism and Aesthetic values is also not supported in Wheatly and Sumner's (1946) study. The results of these studies cast doubt on the contention that the highly Aesthetic person is neurotic.

Each of the significant relationships established between the Social value and the ACL for the males was predicted. Three unpredicted results were obtained for the females on the Social value. A negative relationship was exhibited with the Counseling Readiness scale, indicating a large amount of self-assuredness. While the High, Middle, and Low Social females were discriminated by the Self-confidence scales there was only .15 difference between the High and Low group, the discrimination being due to the dominance of the Middle group on this scale. The Low Social females scored higher than the High Social females on the Exhibition scale, indicating a certain amount of inhibition associated with High Social females.

Pintner (1933) found a positive correlation between intelligence and Social values. The relationship between Social values and achievement is supported by studies which show that college graduates have significantly higher Social values than those students who withdraw (Seagoe, 1945; and Arsenian, 1943).

The ability of the Social individuals to adjust to their surroundings is reflected in their low Counseling Readiness score (for females). This finding is corroborated by Todd (1941) who found that ratings of adjustment were correlated positively with Social values. Persons with this value also score high on the Almsck Sense of Humor Test (Stump, 1939). Possessing a sense of humor is often considered to be a sign of positive

mental health.

Each of the ACL scales which significantly differentiated among the High, Middle, and Low Political groups for the males was predicted to do so and no ACL scale significantly differentiated among the High, Middle, and Low Political females. Thus, no new information was obtained concerning the Political value.

Other studies have emphasized the fact that high Political values are correlated with low scores on measures of intelligence (Schaeffer, 1936; Pintner, 1933; and Duffy & Crissy, 1940). The description of the Political individual as one interested in power is supported by other studies. A positive correlation has been found between the male scores on the A-S Reaction Study and the Political value scale. This result "signifies that a man who is distinctively either ascendant or submissive is likely . . . to have a rather marked interest in power (Cantril & Allport, 1933).

Each of the cases for which the ACL was able to discriminate among the High, Middle, and Low Religious groups for the males or females was predicted. Thus, one must again turn to the results of other studies for those aspects of the Religious scale which may not have been apparent.

Other studies have found the Religious value to correlate positively with class grades (Pintner, 1933). This correlation with grades may be due to their perseverance and hard working ability rather than to any superior intellectual ability. Male subjects who scored high on the religious value tended to score low on the A-S Reaction Study (Cantril & Allport, 1933). This result indicates that the Religious male is more submissive than his high scores on the Aggression, Dominance, and Autonomy scales would indicate.

These indications which have been obtained here must of course be regarded as tentative until verified by further research, but should be useful in presenting avenues of investigation which may have been hitherto unnoticed.

C H A P T E R V

SUMMARY AND CONCLUSIONS

The purposes of the present study were: (1) to provide comparative data on the SOV from a Canadian college population, and (2) to explore the relationship between SOV profiles and personality attributes as measured by the ACL for the same sample. Z-tests and multiple discriminant analyses were employed to identify the variables that discriminated among the various groups compared.

It was found that the Canadian males and females in this sample differed significantly from each other on each of the six values. The males were higher on Theoretical, Economic, and Political values; females were higher on Aesthetic, Social, and Religious values. American males and females differ from each other in the same direction and on the same values (Allport, et al., 1960). Comparisons with other cultures further confirmed that sex differences are always found although they are not always on the same scales.

When the results of both sexes were combined to produce an overall Canadian profile in order for the results to be comparable to other cross-cultural studies, it was found that the Canadians differed significantly from the Americans. The former scored higher on Aesthetic, Social, and Political values and scored lower on Economic and Religious values. There was no significant difference between the two countries on the Theoretical value.

Because of the significant sex differences, males and females were separated in all further analyses. An analysis by college major showed the following results: for males, Humanities majors scored significantly

higher on the Aesthetic value than the other two groups while Natural Science majors scored significantly higher on Theoretical and Economic values; for females, Humanities majors scored higher on the Aesthetic value, Natural Science majors were high on Theoretical value, and the Social Science majors were significantly higher on the Social scale.

An individual cannot, of course, be described as having one value; rather all of the values must be interpreted in relation to his dominant value, i.e., we must describe a values profile. Thus, a person is high on some values and low on others. This interpretation must also be applied to the personality characteristics. Each value type not only must be described according to those personality attributes which are highest but also according to those which are lowest, i.e., we must again deal with a profile of characteristics.

Subjects were grouped according to dominant SOV value and a multiple discriminant analysis of their ACL profiles was done. This analysis yielded several significant differences. In addition, all subjects were divided into three groups for each value depending on whether their score on that value was in the highest, middle, or lowest third of the scores. It was found that for several values some of the ACL scales could discriminate among these groups.

Multiple discriminant analysis made it possible to consider several different variables that operate in each given situation at the same time. It gave a weight to each value scale when the subjects were grouped by sex and academic areas. Similarly, weighting was applied to each personality scale derived from the ACL when the subjects were separated into value groups.

Results on the SOV allow several conclusions to be drawn: (1)

students can be differentiated according to their dominant value profile; (2) Canadian male students have dominant Theoretical, Economic, and Political values; (3) Canadian female students have dominant Aesthetic, Social, and Religious values; (4) Humanities majors have high Aesthetic values and low Theoretical values; (5) Natural Science majors have high Theoretical interests and low Aesthetic interests; (6) Social Science majors tend to have high Social values and low Aesthetic values.

Comparison of the SOV with the ACL also allows two important conclusions: (1) the ACL scales have differential success in distinguishing among the six dominant SOV scales (nine scales for the males and six for the females); and (2) the ACL scales have differential success in distinguishing among subjects scoring high, medium, and low on each of the value scales, with a total of 32 successful discriminations for the males and 34 successful discriminations for the females out of 144 possible.

Several implications for future investigations suggest themselves. One interesting study would be to replicate that part of the study that dealt with the relationship between the SOV and the ACL with another population to see if these relationships would hold up. Also, since values and personalities are dynamic rather than static entities, the study of persons before and after they become assimilated into another culture would add to knowledge concerning the acquisition of values, since personality is defined as "a configuration of responses which the individual has developed as a result of his experiences," (Linton, 1945, p. 133).

Another extension of research in this area could focus on the degree of relationship between the ACL personality scales and choice of major. Because persons in the same major area tend to have the same values, and as this study has also pointed out, persons with the same values have

similar personality characteristics, then it is reasonable to suspect that persons with the same majors would have similar personality attributes.

This hypothesis has already found some support in Roe's (1957) personality theory of vocational choice.

This study has shown that a person's values can influence his choice of broad major area while Schlarb's (1968) study with the same subjects examined this relationship with the specific academic major. These results might be useful in counseling students concerning their academic and vocational development, particularly in their choice of major and future vocation.

The SOV has already been shown to be and it continues to be a viable research tool. The results from the correlation of the SOV with the ACL produced data that gave added information concerning the subscales of each test, thus providing a larger picture of the nature of each test. Because of the stature of the SOV, the significant correlations of the various ACL scales with each of the value scales support the usefulness of the ACL as a tool of research. This study has shown, as has others, that both the SOV and the ACL are, and with more research can continue to be, useful instruments in the understanding of certain facets of personality organization.

REFERENCES

- Adorno, T. W., Frenkel-Brunswik, Else, Levinson, D. J., and Sandord, R. N. The Authoritarian Personality. New York: Harper, 1950.
- Allport, G. W. and Kramer, D. W. Some roots of prejudice. J. Psychol., 1946, 22, 9-39.
- Allport, G. W., Vernon, P. E., and Lindzey, G. A Study of Values: A scale for measuring the dominant interests in personality. Boston: Houghton Mifflin Company, 1960.
- Anderson, R. G. Some technological aspects of counseling adult women. J. Appl. Psychol., 1938, 22, 455-469.
- Appley, D. G. Presenting problems of self-referred university students - theory and fact. Proceedings of the Canadian Association of University Student Personnel Services, October, 1966, 32-43.
- Arsenian, G. The relation of evaluative attitudes to vocational interest and social adjustment. J. Soc. Psychol., 1943, 17, 17-24.
- Beck, S. The Rorschach Test and the organization of personality: Basic processes. Amer. J. of Orthopsychiatry, 1933, 13.
- Beck, S. The Rorschach Test and the organization of personality: Balance in personality. Amer. J. Psychiatry, 1933, 13.
- Deigman, F. J. Note on the values of art students. Educ. Rec., 1959, 40, 118-122.
- Didato, S. V. and Kennedy, T. M. Masculinity-femininity and personal values. Psych. Reports, 1956, 2, 231.
- Duffy, Elizabeth. A critical review of investigations employing the Allport-Vernon Study of Values and other tests of evaluative attitude. Psychol. Bull., 1940, 33, 597-612.
- Duffy, E., and Crissy, W. Evaluative attitudes as related to vocational interests and academic achievement. J. abnorm. soc. Psychol., 1940, 35, 226-245.
- Dukes, William. Psychological studies of values. Psychol. Bull., 1955, 52, 24-50.
- Festinger, L. A Theory of Cognitive Dissonance. California: Stanford University Press, 1957.
- Golden, E. M. and Maller, J. B. The measurement of interest values. Char. & Pers., 1940, 9, 67-81.
- Gough, H. G. and Heilbrun, A. The Adjective Check List Manual. California: Consulting Psychologists Press Inc., 1965.

- Harris, D. Group differences in values within a university. Psych. Bull., 1933, 30, 555.
- Harris, D. Group differences in values within a university. J. Abnorm. Soc. Psychol., 1934, 29, 95-102.
- Hereford, C. F. Estereotipos de la cultura norteamericana en Mexico y Chile. (North American cultural stereotypes in Mexico and Chile). Revista Mexicana de Psicología, 1964, 1, 344-349.
- Huntley, C. W. Changes in study of values scores during the four years of college. Genetic Psychology Monographs, 1965, 71, 349-383.
- Katz, D. and Schanck, R. Social Psychology. New York: Wiley & Sons, Inc., 1938.
- Kelly, E. L. and Fiske, D. W. The Prediction of Performance in Clinical Psychology. Ann Arbor: University of Michigan Press, 1951.
- Kennedy, W. A. and Smith, A. H. Values of future scientists. Percept. & Motor Skills, 1963, 16, 703-704.
- Kerr, W. Untangling the liberalism-conservatism continuum. J. Soc. Psych., 1952, 35, 111-125.
- Linton, Ralph. The Cultural Background of Personality. New York: Appleton-Century Company, 1945.
- Mandell, M. and Adkins, D. The validity of written tests for the selection of administrative personnel. Educ. psychol. Meas., 1946, 6, 293-312.
- May, W. T. Differences between nursing student drop outs and remainders on the Study of Values. Psychol. Reports, 1966, 19, 902.
- Montagu, M. R. The Direction of Human Development: Biological and Social Bases. New York: Harpers, 1955.
- Nobechi, M. and Kimura, J. "Study of Values" applied to Japanese students. Psychologia, 1957, 1, 120-122.
- Pal, S. K. Values of students in four professions under Indian conditions. J. Soc. Psychol., 1967, 72, 297-298.
- Pintner, R. A. A comparison of interests, abilities, and attitudes. J. Abnorm. Soc. Psychol., 1933, 27, 351-357.
- Pintner, R. and Forlano, G. A note on the relation between divergent interests and emotional stability. J. Abnorm. Soc. Psychol., 1939a, 34, 539-541.
- Pintner, R. and Forlano, G. Dominant interests and personality characteristics. J. Gen. Psychol., 1939b, 21, 251-260.

- Pugh, T. J. A comparative study of the values of a group of ministers and two groups of laymen. J. Soc. Psychol., 1951, 33, 225-235.
- Ray-Chowdhury, K. Allport-Vernon Study of Values (old and new forms) and sex differences in Indian situation. Indian Psychol. Bull., 1959, 4, 52-57.
- Reddy, K. and Parameswaran, E. G. Some factors influencing the value patterns of college students. Research Bulletin of the Department of Psychology, Osmania U., 1966, 2, 7-14.
- Rodd, William. Cross-cultural use of "The Study of Values". Psychologia, 1959, 2, 157-164.
- Roe, Anne. Early determinants of vocational choice. J. Counseling Psychol., 1957, 4, 212-217.
- Sanai, M. The relation between social attitudes and characteristics of personality. J. Soc. Psychol., 1952, 36, 3-13.
- Schlarb, Lora. Self-concept and choice of major. Honors thesis York University, 1968.
- Schaefer, B. The validity and utility of the Allport-Vernon Study of Values Test. J. Abnorm. Soc. Psychol., 1936, 30, 419-422.
- Seagoe, M. Permanence of interest in teaching. J. Educ. Res., 1945, 38, 678-684.
- Seashore, H. G. Validation of the study of values for two vocational groups at the college level. Educ. Psychol. Meas., 1947, 7, 757-753.
- Singh, Paras; Huang, Sophia; and Thompson G. A comparative study of selected attitudes, values and personality characteristics of American, Chinese, and Indian students. J. Soc. Psychol., 1962, 57, 123-132.
- Sisson, E. D. and Sisson, B. Introversion and the aesthetic attitude. J. Gen. Psychol., 1940, 22, 203-208.
- Smith, Madorah. The values most highly esteemed by men and women in Who's Who suggested as one reason for the great difference in representation of the two sexes in those books. J. Soc. Psychol., 1962, 58, 339-344.
- Smith, W.; Hansell, N.; and English, J. Values and mental health in a college population: A follow-up report. J. Nerv. & Ment. Disease, 1965, 140, 92-95.
- Spoerl, Dorothy. The values of the post-war college student. J. Soc. Psychol., 1952, 35, 217-225.

- Spranger, E. Types of Men. Translation of 5th German edition, by P. J. W. Pigon. Halle: Niemeyer, 1928.
- Stromwell, G. E. Reviewed in Cantril, H. and Allport, G. W. Recent applications of the Study of Values. J. Abnorm. Soc. Psychol., 1933, 28, 259-273.
- Stump, N. Senses of humor and its relationship to personality, scholastic aptitude, emotional maturity, height and weight. J. Gen. Psychol., 1939, 20, 25-32.
- Titchener, E. B. A Beginner's Psychology. New York: Macmillan, 1915.
- Thurstone, L. A factorial study of perception. Chicago: Univ. of Chicago Press, 1944.
- Todd, J. Social norms and the behavior of college students. Teach. Coll. Contr. Educ., 1941, No. 833.
- Triplett, R. J. Interests of commercial students. J. Abnormal Soc. Psychol., 1935, 29, 409-414.
- Veldman, Donald. Fortran Programming for the Behavioral Sciences. New York: Holt, Rinehart and Winston, 1967.
- Vernon, P, and Allport, G. A test for personal values. J. Abnorm. Soc. Psychol., 1931, 26, 231-248.
- Warren, J. R. and Heist, Paul. Personality attributes of gifted college students. Science, 1960, 132, 330-337.
- Weybrow, Ben and Molish, H. B. Approaches to the study of motivation of officer candidates for the submarine service. USN Med. Res. Lab. Rep., New London, 1959, (Oct.) 18 (16, Whole No. 321), IV, 47p.
- Wheatley, L. A. and Sumner, F. C. Measurement of neurotic tendency in Negro students of music. J. Psychol., 1946, 22, 247-252.
- Wickert, F. The interrelationships of some general and specific preferences. J. Soc. Psychol., 1940, 11, 275-302.

A P P E N D I X I

THE ALLPORT-VERNON-LINDZEY STUDY OF VALUES

The six value scales, and their descriptions as given in the SOV manual (Allport, Vernon, & Lindzey, 1960), are as follows:

1. The Theoretical. The dominant interest of the theoretical man is the discovery of truth. In the pursuit of this goal he characteristically takes a "cognitive" attitude, one that looks for identities and differences; one that divests itself of judgments regarding the beauty or utility of objects, and seeks only to observe and to reason. Since the interests of the theoretical man are empirical, critical, and rational, he is necessarily an intellectualist, frequently a scientist or philosopher. His chief aim in life is to order and systematize his knowledge.

2. The Economic. The economic man is characteristically interested in what is useful. Based originally upon the satisfaction of bodily needs (self-preservation), the interest in utilities develops to embrace the practical affairs of the business world - the production, marketing, and consumption of goods, the elaboration of credit, and the accumulation of tangible wealth. This type is thoroughly "practical" and conforms well to the prevailing stereotype of the average American businessman.

3. The Aesthetic. The aesthetic man sees his highest value in form and harmony. Each single experience is judged from the standpoint of grace, symmetry, or fitness. He regards life as a procession of events; each single impression is enjoyed for its own sake. He need not be a creative artist, nor need he be effete; he is aesthetic if he but finds his chief interest in the artistic episodes of life.

4. The Social. The highest value for this type is love of people. In the Study of Values it is the altruistic or philanthropic aspect of love that is measured. The social man prizes other persons as ends, and is therefore himself kind, sympathetic, and unselfish. He is likely to find the theoretical, economic, and aesthetic attitudes cold and inhuman. In contrast to the political type, the social man regards love as itself the only suitable form of human relationship. Spranger adds that in its purest form the social interest is selfless and tends to approach very closely to the religious attitude.

5. The Political. The political man is interested primarily in power. His activities are not necessarily within the narrow field of politics; but whatever his vocation, he betrays himself as a Machtmensch. Leaders in any field generally have high power value. Since competition and struggle play a large part in all life, many philosophers have seen power as the most universal and most fundamental of motives. There are, however, certain personalities in whom the desire for a direct expression of this motive is uppermost, who wish above all else for personal power, influence, and renown.

6. The Religious. The highest value of the religious man may be called unity. He is mystical, and seeks to comprehend the cosmos as a whole, to relate himself to its embracing totality. Spranger defines the religious man as one "whose mental structure is permanently directed to the creation of the highest and absolutely satisfying value experience." Some men of this type are "immanent mystics," that is, they find their religious experience in the affirmation of life and in active participation therein. A Faust with his zest and enthusiasm sees something divine in every event. The "transcendental mystic," on the other hand, seeks to unite himself with a higher reality by withdrawing from life; he is the ascetic,

and, like the holy men of India, finds the experience of unity through self-denial and meditation. In many individuals the negation and affirmation of life alternate to yield the greatest satisfaction.

The SOV attained a mean split-half reliability of .90, a mean repeat reliability of .89 for a one month interval, and a mean repeat reliability of .88 for a two month interval.

External validation was accomplished by comparison of scores in occupational groups expected to be high on certain value scales. For a listing of the results see Allport, Vernon, and Lindzey (1960).

A P P E N D I X II

THE GOUGH-HEILBRUN ADJECTIVE CHECK LIST

The twenty-four personality scales with brief descriptions are as follows. For more complete descriptions see the ACL manual (Gough & Heilbrun, 1965).

1. Total number of adjectives checked: No. Ckd. This scale is used to adjust the raw scores on the other scales as well as for its own empirically determined content.
2. Defensiveness: Df. This scale measures attempts by the test-taker to make himself look perfectly well adjusted.
3. Number of favorable adjectives checked: Fav. Favorable adjectives were determined by choosing the 75 adjectives most often checked by a group of 97 undergraduates who had been asked to choose the 75 most favorable words.
4. Number of unfavorable adjectives checked: Unfav. This scale was determined in a similar fashion as the favorable adjectives.
5. Self-confidence: S=Cfd. This scale was constructed by contrasting the self-descriptions of men and women rated in assessment as higher and lower on such traits as poise, self-confidence, self-assurance, and the like.
6. Self-control: S=Cn. The self-control scale was also developed empirically and is intended to parallel the responsibility-socialization cluster of scales on the California Psychological Inventory.
7. Lability: Lab. This scale was based on item analyses of experimental subjects rated high on characteristics such as spontaneity, flexibility, need for change, rejection of convention, and assertive individuality.
8. Personal Adjustment: Per Adj. The personal adjustment scale

was derived from item analysis of assessment subjects scored higher and lower on personal adjustment and personal soundness.

9. Achievement: Ach. This scale and the fourteen following it are called "the need scales." Nineteen graduate students in psychology were given the definition of the needs and asked to judge which adjectives, if endorsed, would indicate the presence of each need in the endorsers. A requirement of at least 9 out of 19 agreements was adopted for inclusion of an adjective in a scale. The definition of this scale is: to strive to be outstanding in pursuits of socially recognized significance.

10. Dominance: Dom. Definition: to seek and sustain leadership roles in groups or to be influential and controlling in individual relationships.

11. Endurance: End. Definition: to persist in any task undertaken.

12. Order: Ord. Definition: to place special emphasis on neatness, organization, and planning in one's activities.

13. Intraception: Int. Definition: to engage in attempts to understand one's own behavior or the behavior of others.

14. Nurturance: Nur. Definition: to engage in behaviors which extend material or emotional benefits to others.

15. Affiliation: Aff. Definition: to seek and sustain numerous personal friendships.

16. Heterosexuality: Het. Definition: to seek the company of and derive emotional satisfactions from interactions with opposite-sexed peers.

17. Exhibition: Exh. Definition: to behave in such a way as to elicit the immediate attention of others.

18. Autonomy: Aut. Definition: to act independently of others or of social values and expectations.

19. Aggression: Agg. Definition: to engage in behaviors which attack or hurt others.

20. Change: Cha. Definition: to seek novelty of experience and avoid routine.

21. Succorance: Suc. Definition: to solicit sympathy, affection, or emotional support from others.

22. Abasement: Aba. Definition: to express feelings of inferiority through self-criticism, guilt, or social impotence.

23. Deference: Def. Definition: to seek and sustain subordinate roles in relationship with others.

24. Counseling Readiness: Crs. This scale was developed empirically based upon the protocols of clients showing more and less positive responses to counseling.

The mean repeat reliability for the ACL over a six month period with a group of adult males was .54.

The assessment of validity is accomplished by comparison with several other personality measures. For a listing of the results on these external validation attempts see Gough and Heilbrun (1965).

