

APP/EX.

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~~LÄNEEXEMPLAR~~

ÖREBROPROJEKTET

Delstudier

22.

SOME NOTES ON THE STUDY OF VALUES IN EXPERI-
MENTAL PSYCHOLOGICAL RESEARCH FROM
1933 - 1971

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RESEARCH IN PSYCHOLOGICAL RESEARCH FROM
1930-1970

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Förord

Örebroprojektet är ett forskningsprojekt som startades år 1964 för att arbeta med problem om anpassning och beteende. Anpassning betraktas som en fortlöpande process, som måste studeras genom att den deltagande gruppens utveckling följs under hela den period som är av betydelse för de problem som står i centrum.

Projektet har alltså fått en longitudinell utformning. Två årsklasser följs från de år då barnen var tio respektive tretton år gamla. Huvudgruppen, barn som föddes 1955, har nu deltagit i undersökningarna i nära tio år. En del går ännu kvar i ungdomsskolan. Det är de som är elever på treåriga linjer i gymnasiet.

Ett antal studier har nu genomförts inom flera problemområden. Ett särskilt intresse har ägnats tonåren och utvecklingen av värderingar under den perioden. Undersökningar har gjorts av normer i situationer som är relevanta för ungdomar i relationer till hem, skola och kamrater (Henricson, 1973) och av värderingar av brott och andra icke önskvärda beteenden (Dunér & Haglund, 1974). Tonåringarnas relationer och beteenden har beskrivits (Marnell, Dunér & Magnusson, 1973). Vidare pågår studier av studie- och yrkesvalets process (Dunér, 1972; Hjortzberg-Nordlund & Marnell, 1974). I flickgruppen har en grundlig beskrivning gjorts av symtom och relationsmönster (Crafoord, 1972).

För ungdomarnas utveckling, som kan ses ur många synvinklar, är värderingarna av stor betydelse. Vi genomför empiriska studier, som siktar på att kartlägga ungdomarnas värden eller livsmål, av vad som på längre sikt kan antas styra deras handlande och deras vidare utveckling.

Föreliggande rapport utgör en genomgång av litteratur på detta område, som är av så central betydelse för projektets problem. Sammanställningen och diskussionen av tidigare forskning har gjorts av James Sidanius.

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I. INTRODUCTION

Contrary to the views of some major contributors to the field of values & attitudes research, the study of values and their contribution to the complexity of human behavior has been going on for some time now. Eduard Spranger, in his volume *Lebensformen, Geisteswissenschaftliche psychologie und ethik der persönlichkei*(1925), laid the theoretical groundwork for much of the rather fruitful research on values in the U.S. since 1931. Shortly described, Spranger states that the personalities of men are most effectively and parsimoniously understood through the nature of their values or evaluative attitudes. Spranger goes on to posit the existence of 6 main personality types having 6 main value differences.

1. The theoretical type

This type is predominantly interested in the discovery of "truth" and knowledge. This man is critical, rational and analytical. He is interested in the investigation of identities and dissimilarities. He takes a distinctly cognitive attitude toward objects in the world and the relationships between these objects. The type is, according to Spranger, not interested so much in the beauty or utility of objects but rather in their structure. This man is obviously the one who would become a teacher, scientist, doctor, philosopher, etc.

2. The economic type

This man is primarily interested in the acquisition and accumulation of wealth. He is oriented towards the practical and the useful as they are instrumental to the accumulation of material wealth. This man is dedicated to "Mammon" in all its regards. This man is motivated to pursue the careers of business, trading, banking, etc., and is stereotyped as the cigar smoking american business executive.

The religious orientation of this type is more than likely to be of a strongly calvinistic-protestant-ethic variety in which God is conceived of as rewarding the industrious, the intelligent, the competitive, the aggressive and consequently, the "Good" with material wealth. This protestant-ethic is also conceived as a dominant cultural theme in american society.

3. The Aesthetic Type

Harmony and form are the most important values to the aesthetic man. He is oriented to the immediate enjoyment of the everpresent NOW in his pursuit of grace, harmony, symmetry and balance. The aesthetic man is most unlike the theoretical and the economic man. He is interested in people as beautiful or exciting, but he is not interested in "their human or social welfare". The aesthetic man is obviously motivated to become a poet, artist, musician, etc.

4. The social type

The social man's greatest value in life is "love of people". He is primarily concerned with the world of feelings and emotions, with human beings as prized ends in themselves. He is apt to be philanthropic, altruistic and self-sacrificing. Spranger comments that in his "purest form" the social man approaches to religious man. The social type is most likely to be motivated to become a social worker, psychotherapist, occupational therapist, etc.

5. The political type

This man is predominantly interested in power for its own sake. This power need not restrict itself to political power, but power in any field. Through his competitiveness and lust for power, he will be likely to become a leading or dominant figure in whatever occupation he happens to be engaged.

6. The religious type

Spranger defines this man as "one whose mental structure is permanently directed to the creation of the highest and absolutely satisfying value experience". The highest value for this type is "unity", the unity of the cosmos and everything within it. Spranger relates this value preference to that of mysticism and goes on to distinguish between two separate types of mystics:

- (a) The immanent mystics - those who find religious experience in life itself and through active participation in life.
- (b) The transcendental mystics - or those who seek to become one with a higher and greater reality, greater than life or death, good or evil. This man seeks to unite himself with the cosmos, the Om, the Nirvana through a withdrawal from life and its menial pursuits, to a pursuit of contemplation and meditation. This transcendental mysticism is best exemplified by Buddicism as taught by the Mahatma.

Spranger's typology has served as a major impetus to the development of two major, American, empirical studies of values, to Allport and Vernon's development of the Study of Values in 1931, and to Holland's development of the Vocational Preference Inventory. Each of these theorists has been influenced to a different degree. The Allport-Vernon Study of values is based entirely upon Spranger's theoretical reasoning while Holland's theory and subsequent scales are only partially so. We will study each of these in turn, among others.

II. THE ALLPORT-VERNON-LINDZEY STUDY OF VALUES

A. Description of test

The Allport- Vernon- Lindzey Study of Values is beyond doubt the most well established and well studied value scale in the field. Since 1931, when the scale was first developed and published, it has gone through two revisions, one in 1951 and the last in 1960. The study consists of a number of questions concerning everyday familiar situations in which the S is asked to choose among Each situation represents a value. The test is divided into two parts. In part I S is asked to choose between two situations at a time. The final score for part I is the relative weight for each value given. On page 5 is given some examples of questions from the study. In part II the S is asked to choose between four alternatives at a time. There are 120 answers in all, 20 of which refer to each value: theoretical, economic, aesthetic, social, political, religious. In this regard, the scoring of this is somewhat similar to Rokeach's Value Survey in that S is asked to give a relative preference for each value. Among the many differences between the two (to be discussed in detail later) is that each of the Rokeach values is ranked once while each of the AVL values are ranked 20 times.

The reliability of measured values is rather high. The reliabilities were measured by a split-half technique. (using Sperman-Brown correction with z transformed r.) The reliability studies were performed on the 1951 edition (see table 1).

Table 1. Split-half reliabilities for the six AVL values

Values	Reliabilities (N = 100)
theoretical . . . . .	.84
economic . . . . .	.93
aesthetic . . . . .	.89
social . . . . .	.90
political . . . . .	.87
religious . . . . .	.95

The mean split-half reliability was .90.

Test-retest reliabilities were also computed at intervals of one month and two months (using 1951 edition and Z transformed r, see table 2).

Some examples of questions from the Allport-Vernon
Lindsay Study of Values.

Part I

1. The main object of scientific research should be the discovery of truth rather than its practical applications. (a) Yes; (b) No.

a

b

2. Taking the Bible as a whole, one should regard it from the point of view of its beautiful mythology and literary style rather than as a spiritual revelation. (a) Yes; (b) No.

a

b

3. Which of the following men do you think should be judged as contributing more to the progress of mankind? (a) Aristotle; (b) Abraham Lincoln.

a

b

4. Assuming that you have sufficient ability, would you prefer to be: (a) a banker; (b) a politician?

a

b

Part II

1. Do you think that a good government should aim chiefly at—(*Remember to give your first choice 4, etc.*)

- a. more aid for the poor, sick and old
b. the development of manufacturing and trade
c. introducing highest ethical principles into its policies and diplomacy
d. establishing a position of prestige and respect among nations

d

b

c

a

2. In your opinion, can a man who works in business all the week best spend Sunday in —

- a. trying to educate himself by reading serious books
b. trying to win at golf, or racing
c. going to an orchestral concert
d. hearing a really good sermon

b

c

d

a

3. If you could influence the educational policies of the public schools of some city, would you undertake —

- a. to promote the study and participation in music and fine arts
b. to stimulate the study of social problems
c. to provide additional laboratory facilities
d. to increase the practical value of courses

a

d

c

b

4. Do you prefer a friend (of your own sex) who —

- a. is efficient, industrious and of a practical turn of mind
b. is seriously interested in thinking out his attitude toward life as a whole
c. possesses qualities of leadership and organizing ability
d. shows artistic and emotional sensitivity

c

d

a

b

Table 2. Test-retest reliabilities of the six AVL values

Values	ONE-MONTH	TWC-MONTHS
	1951 N = 34	1957 N = 53
theoretical .....	.87	.85
economic .....	.92	.84
aesthetic .....	.90	.87
social .....	.77	.88
political .....	.90	.88
religious .....	.91	.93

The mean test-retest reliability was .89 for the one month interval and .88 for the two months interval.

Item analysis revealed that the correlation of each value item with the total sub-scale score (theoretical, social, etc.) was significant at .01 (N = 780 males and females from 6 different colleges in the U.S.).

The correlation among the values was also calculated using a sample of 100 males and 100 females. (See table 3.)

Table 3. Intercorrelation among AVL values

Males	eco.	aes.	soc.	pol.	rel.
theoretical	-.22	-.10	-.13	-.20	-.18
economic		-.41	-.36	.27	-.43
aesthetic			-.10	-.18	-.31
social				-.18	.23
political					-.42
Females	eco.	aes.	soc.	pol.	rel.
theoretical	-.02	.07	-.24	.02	-.48
economic		-.33	-.35	-.18	-.29
aesthetic			-.40	.01	-.46
social				-.33	.27
political					-.36

(All tables taken from Allport, Vernon & Lindzey, 1960.)

The authors point out that this intercorrelation matrix must be interpreted with caution because the scores are related or correlated with one another as a result of the scoring system alone, e. g. a high score on one value automatically leads to a lower score on another value, producing generally negative correlations among the values. The authors point out

that there is a positive correlation between social-religious, economic - political and theoretical-aesthetic and then state that "the degree of correlation, however, is not enough to indicate that a smaller number of more basic types can be derived", p. 10. This seems indeed to be a very peculiar reasoning given the fact that, as the authors themselves point out, the scores are necessarily negatively correlated as an artifactual result of the scoring system. If it were not for the scoring artifact there is every reason to believe that the above positive correlations would be even larger than they already are, which, in its turn, might and probably would lead to the possibility that this 6 order matrix is really of a rank less than 6 and thereby to "more basic types".

More basic factors have in fact been derived in subsequent studies (see for instance Sciortino, 1970; Duffy, '1940'. These studies will be reviewed in greater detail in a later section).

B. The Allport-Vernon-Lindzey study of values in experimental research from 1933 to 1970

1. Reliability & validity norms and sex differences

The Study of Values was first comprehensively reviewed in 1933 by Cantril & Allport. The authors concluded that "the reliability and validity originally claimed for it (the test) are approximately correct - if anything too low, and that the weakest feature of the scale is the low reliability of scores for the social value". Some evidence for this can be seen in Allport et al. own reliability coefficients (see table 2). The authors have reviewed the values' discriminability of occupational groups and are also rather convinced of their validity. Cantril & Allport conclude: "The evidence from recent applications of the Study of Values must be interpreted as establishing these values (with the exception of the social) as self-consistent, pervasive, enduring and above all generalized traits of personality" (p. 272).

Harris (1934, see Duffy, 1940, p. 598), using 338 Lehigh university students, found norms quite similar to those reported by Cantril & Allport for male students. The only exception was the religious value, which was lower than the Cantril & Allport findings.

In a study of 72 sophomores and 70 seniors at Reed College, Schoefer (1936, see Duffy, p. 598), found a monotonic increase in the theoretical and aesthetic values from the sophomore to the senior year. The Reed College norms for the theoretical and aesthetic values were also somewhat higher than the population reported in the Cantril & Allport study.

Whitely (1938, see Duffy, 1940) also found a slight tendency for the aesthetic scores to increase from the freshman to the junior year while the religious values had a slight tendency to decrease (N = 168 at Franklin Marshall College).

Duffy (1940), in reviewing the Whitely study, found a general tendency for an increase in aesthetic, social, and theoretical values and a general tendency for decrease in religious, political and economic values. Duffy attributes these changes to genuine value changes caused by the college experience rather than to unreability in the tests.

Duffy (1940), in reviewing studies by Duffy & Crissy (1940) and Hartman (1934), concludes that the differences in values between college men and women and between different colleges is generally in agreement with the findings of Cantril & Allport and lend solid support to the validity of the tests. (For a more detailed review of validity studies on college populations, see appendix 4.)

2. Values, academic achievement and cognitive ability

Cantril & Allport found a correlation of .25 between college grades and the theoretical value (Duffy, 1940, N = 150 Students at Dartmouth College).

Rothney (1936) used a revision of the AVL in a correlation study of the academic achievement scores of 306 11th grade boys from seven american high schools. Rothney correlated the value scores with teachers' marks in English, Latin, French, Geometry, Algebra and an average of the first four of these over a period of one year. The effects of intelligence and chronological age were controlled. The results showed that the range of correlations varied between -.13 and .24 with many correlations not significantly different from zero. The correlations between values and academic average varied between -.13 and .18. Duffy (1940) points out that Rothney's conclusions concerning the small practical utility of forecasting academic achievement from a value matrix is unjustified since the Rothney value revision falls seriously short of

attaining a respectable reliability. The reliabilities for the Rothney revision range from .00 for the social value to .60 for the religious value with a mean reliability of .42. This is, indeed, far short of the AVL reliabilities (see tables 1 and 2).

Schaefer (1936, reviewed in Duffy, 1940) discovered several significant correlations between the AVL and the American Council on Education College Sophomore Test (A. C. E.). The A. C. E. has the following seven sub-sections: Intelligence, Literature, Foreign Literature, Fine Arts, History, General Science and General Culture (N = 51 Reed College sophomores). Schaefer obtained the following significant correlations (see table 4).

Table 4. Correlations of the AVL with the A. C. E.

	I. Q.	Lit.	F. Lit	F. Arts	His.	G. sci.	G. Cul.
	N = 51						
theo.	.21	-	-	-	-	.31	-
eco.	-	-.47	-.37	-.28	-.37	-	-.42
aes.	-	.58	.48	.47	.37	-	.43
soc.	-	-	-	-	-	-	-
pol.	-.60	-	-	-	-	-	-
rel.	-	-	-	-	-	-	-

Schaefer concluded "scores on certain sections of the A. C. E. test can be predicted more accurately from certain "value" scores than from intelligence scores" (p. 443).

In studying 108 Sarah Lawrence College freshman, Duffy and Crissy (1940, see Duffy, p. 601) generated a multiple regression equation using the AVL scores as the independent variables and teachers' ratings of academic achievement at the end of the freshman year as the dependent variable. Results showed that the multiple regression equation yielded a correlation of .34 between AVL scores and academic achievement ratings. On the other hand, academic achievement had only .29 correlation with intelligence test scores (A. C. E.). It is also interesting to note that when the effect of intelligence was partialled out of the AVL, the multiple correlation only decreased moderately to .28. Duffy makes the point, which can be confirmed by an examination of the value profiles at the "better" colleges in the U. S. (see appendix 4), that academic achievement tends to vary as a positive function of the theoretical and aesthetic values and vary negatively as a function of economic and political values.

Niemieć (1970) found results somewhat congruent with the above findings although via an entirely different value estimation technique. Niemiec estimated the value hierarchies of superior 12th grade students through the use of structured interviews, taped and written information obtained from counselors in contact with the students and the students' own "representative statements" concerning the 4 values: material, recognition, social welfare and individual development. The results showed that all 3 methods gave reasonably reliable value hierarchies in which individual development was rated higher than material values (p less than .01). The results also showed that the criterion value hierarchies could be predicted as early as the 9th grade for "highest" and "lowest" values (p less than .01) and that the predictive accuracy increased with increases in the subject age.

Gable (1970) conducted an interesting study on the value orientations of Business executives (as measured by the AVL) and their actual and perceived level of economic understanding (as measured by the Test of Economic Understanding, published by Science Research Associates). Among other things, Gable was interested in discovering whether or not there was any relationship between the dominant economic value of businessmen and the actual level of economic understanding. The results showed that this relationship was not significantly different from zero. The results did show that executives weigh theoretical, economic, and political values more heavily than aesthetic, social and religious values and that executives perceive their own economic understanding as being greater than that of their peers. All of the other value patterns for this group were quite congruent with the research literature (see appendix 5). Weick (1970) conducted a study concerning the personal values preferences (AVL) and their relationships to perception of organisational elements (The Ss were staff members of the Arizona Cooperative Extension Service).

The organizational elements considered were grouped into five sets: legal, functional, structural, processes and personnel. The correlational analysis also considered the Ss' sex, tenure, position in the organization, educational level, curriculum, orientation and youth background. The distribution of Ss according to their highest values differed significantly from chance: 27 % economic, 14 % theoretical, 15 % political, 7 % aesthetic, 0 % social. Weick found significant

relationships between sex and aesthetic, political and social values, between level of degree, curriculum orientation and theoretical values and between tenure and high political values. High aesthetic values were found to be significantly associated with perception of the legal set, concerning sources and amount of influence on the organization. The perceptions of 20 of the 42 organisational institutions were significantly associated with high value orientations. Unfortunately, Wick was not able to find any interpretable structure in the data and I do not have enough data here to make an attempt.

3. Values, occupational groups and college major

In a review of research in this area, Duffy (1940) reports that there is strong evidence indicating that the AVL does, indeed, distinguish between different occupational groups and areas of concentration in college (see also the extensive data in appendix 5).

Harris (1934, in Duffy, 1940) found reliable differences among specialization at Lehigh University. These differences were all congruent with the AVL hypothesis, with the exception of the religious value, on which no reliable differences were found. Mean value scores were computed for the following faculties: Medicine, chemical engineering, business, law, teaching and engineering. The medical, chemical engineering, and teaching students were highest in the theoretical value. The law, business, and engineering students were highest in the political value. The engineering students were lowest in the aesthetic value while the law and medicine students were lowest in the religious value.

Schaefer (1936, see Duffy, 1940) found reliable and significant differences in value pairings for students at Reed College. Students in psychology (N = 15) valued theoretical significantly more than economic, students in literature and language valued aesthetic significantly more than economic, students in history valued aesthetic significantly more than economic, students in the natural sciences valued theoretical significantly more than political, students in political science and economics valued social significantly more than religious.

Anderson (1938, see Duffy, 1940) used the AVL to ascertain the relative value preferences of a group of 26 Y.W.C.A. secretaries and found that the dominant values were religious and social.

Duffy & Crissy (1940; see Duffy, 1940) conducted a study relation 10 scales of the Strong Vocational Interest Blank to the AVL (N = 108 freshman at Sarah Lawrence College, see table 5).

Table 5. Relationship between the Strong Vocational Interest Blank for women and the AVL

Occupations	values showing positive relationships	values showing negative relationships
lawyer	economic & political	aesthetic & social
physician	theoretical	-
artist	aesthetic	economic & social
author	aesthetic	economic & social
nurse	social	aesthetic
librarian	aesthetic	social
housewife	social	theoretical
office worker	economic & political	aesthetic & theoretical
secretary - stenog.	political	theoretical

(Revised and reproduced from Duffy, 1940.)

In a more recent study, Statman (1970) compared the value orientations of business students and social workers at determiners of their respective resolutions of a moral dilemma. The moral dilemma constructed was the Kidney machine dilemma (KMD) in which the subject is presented with a case of two persons said to be suffering from a terminal kidney disease and in need of immediate treatment on the one available kidney machine. The S must choose which of the two similar patients is to be saved on this machine.

Six KMD case history conditions were created in such a way that the industriousness and material success of the patients were made to vary. The results showed a relationship between Ss' AVL scores and their decisions in the KMD situation. Business students systematically saved patients showing the greatest amount of material success and coming closest to the Protestant-ethic ideal. Social workers did not make a systematic choice among patients on the basis of their material success, but rather made decisions in an effort to avoid the greatest family hardship.

Additional validation of the AVL in a slightly different area is provided in a study of the differential value and childrearing attitudes of Hippie and non-hippie parents (Blois, 1971). The AVL and the Parent Attitude Research Instrument (PARI) were given to 196 experimental and 147

control Ss in diverse areas of the west coast. The results showed that Hippie Ss had significantly higher values for aesthetic and social (p less than .001 and p less than .01) than non-Hippie Ss, while Hippie Ss had significantly lower theoretical (p less than .05) and economic (p less than .001) than non-Hippie adults. Significant differences between groups were also for 13 PSRI scales showing Hippies to have (1) more permissive child-rearing attitudes (b) fewer attitudes of parental guidance and protection (c) more parent-child communication (d) more "progressive" definitions of family roles (e) greater parent warmth and affection and (f) more non-pathogenic child-rearing attitudes than non-Hippie Ss.

The only study known to the writer at this point which has failed to show significant differences between occupational, interest or area of specialization groups is that reported by Ford (1933, see Duffy, 1940). Ford gave the AVL to 465 college freshman and correlated their value configurations with their academic group memberships (Teachers College, college of commerce, college of liberal arts and a "highly selected" teachers college group). There were no significant relationships of any kind reported, even when taking account of differences in sex, intelligence, size of high school and religion. It is not possible to account for these very atypical results since only an abstract of the Ford study is available.

4. The factor structure of the AVL and related tests

The factor structure of the AVL is somewhat less than totally clear. Because of different factor extraction and rotation methods, different scoring methods and different item selection, comparisons from study to study become somewhat problematical. In any case, we will review 4 major studies in the area.

Lurie (1935) developed a value inventory of 144 items based upon Spranger's theoretical system. The test was administered to 203 freshman and sophomores at the University of Chicago. The test was scored in such a way as to: (1) give an absolute score in each value independent of the scores on the other values (see comments on the scoring artifacts in the AVL, p. 6). (2) as to give 4 measures: interests, ideals, preferences in people and beliefs, corresponding to each of Spranger's 6 types of each S.

The tetrachoric correlation matrix was factored by Thurstone's centroid method. The orthogonal coordinates were then transformed to a set of oblique, seven dimensional coordinates. The oblique matrix gave 4 major factors and 3 minor factors.

The 4 major types were:

- I The social type, which emphasizes the value of human relations
- II The philistine type, which emphasizes utility and power at the expense of beauty and harmony
- III The theoretical type, emphasizing truth and cognitive values
- IV The religious type, emphasizing the spiritual aspects of life.

The 3 minor factors were:

- V open-mindedness-interest in theoretical and social values.
- VI practicality-interest in economic, political and social values.
- VII aesthetic-interest in people as spectators rather than as participants.

Lurie concluded by stating "It is believed by the writer that a more plausible and self-consistent system of personality classification can be founded on the four types derived by factor analysis than on the six types which Spranger developed by intuitive analysis of experience". (P. 32.)

Among the criticisms that can be and have been directed against the Lurie study are these:

- (a) a lack of consistency in the choice of items for certain categories (Duffy, 1940, p. 605).
- (b) a less than completely satisfying scoring system (Duffy, 1940, Sciortino, 1970). Duffy takes pains to criticize the Lurie scoring system on the grounds that:
 - (1) The absolute scoring method is susceptible to what amounts to social desirable response set and "extreme response style" bias.
 - (2) The relative scoring system used in the original (and present) AVL may actually be superior to the absolute scoring method because it forces S to choose among values, which is a situation often occurring in real life situations.

Among the virtues of the Lurie study I would undoubtedly include his decision to use an oblique transformation to simple structure, a decision which has, unfortunately, not been followed in subsequent factor studies reported here. We should perhaps, be reminded of Cattell's comments on the notion of orthogonality and simple structure.

"It needs to be said clearly at this point despite the fond theories on which the hopes of orthogonal rotators are invested - that orthogonality and simple structure are contradictions. Only in very rare cases do factors happen to be orthogonal (theoretically they are never perfectly so). Hence the pursuit of maximum simple structure with the restriction to orthogonality is an impossible goal, a worshipping of two Gods, and must end in some odd compromise" p. 186.

We should have this comment in mind as we consider the subsequent factor studies in this area.

Duffy & Crissy (1940) used an orthogonal extraction and rotation of the AVL from which 3 factors were generated. The 3 factors were labelled:

- I Philistine - or interest in business
- II Social - interest in people
- III Theoretical - interest in science

The aesthetic value loaded negatively on philistine and positively on theoretical. The religious value loaded negatively on philistine and negatively on theoretical. The economic and political values were highly correlated and jointly composed the philistine factor. There is severe doubt in the writer's mind that "simple structure" was achieved in this study.

Ferguson et al. (1941) studied the comparability of the Strong Vocational Interest Blank and the AVL (1931 edition). Both inventories were given to 93 male undergraduates. The intercorrelations of the tests were factored by use of Thurstone's centroid method. One of the resultant factors was totally defined by the Strong Vocational Interest Blank. Of the remaining 4 factors, two were mixed (m) being defined by both the Strong and the AVL. This feature alone makes it difficult to compare this factor structure with that from other studies. The factors were:

- I Aesthetic (m) & theoretical at one end, economic at the other.
- II Theoretical at one end and political at the other (M, bipolar).
- III Religious and social at one end and aesthetic at the other (AVL, bipolar)
- IV Political at one end and economic at the other (AVL, bipolar).

Sciortino (1970) factor analyzed the AVL (1960 edition) to what he described as "a set of orthogonal and psychologically meaningful factors". Of course, that these two criteria are somewhat in contradiction with each other is not considered to be unrelated to the "peculiar" nature of Sciortino's final factor structure. Sciortino specifically employed a principal components extraction using a varimax rotation to simple structure. It was hoped by Sciortino that use of the varimax procedure would stabilize the factor invariance specifically concerned with the theoretical and social values. The sample consisted of 102 male and 48 female (N = 150). The first thing of particular interest is the nature of Sciortino's correlation matrix in comparison with Allport et al.'s correlation matrix (see p. 5 and table 6).

Table 6. Matrix of correlations and varimax factors for scores in the AVL (N = 150)

Variables	Intercorrelations					Varimax factors			
	.1	2	3	4	5	A	B	C	h^2
1. theoretical						-.10	-.96	.07	.94
2. economic	-.01					-.76	-.07	-.42	.75
3. aesthetic	-.11	-.56`				.91	-.05	-.01	.84
4. social	-.49`	-.19	-.21`			-.26	.65	.54	.78
5. political	-.07	.25`	-.28`	-.36`		-.12	.12	-.88	.80
6. religious	-.29`	-.48`	.04	.16	-.38`	.29	.29	.60	.53
latent roots						1.59	1.45	1.60	4.64
% of h^2 total						34	31	35	

`p = .05 (reproduced from Sciortino, 1970).

It should be noticed that the Sciortino correlation matrix has many more and stronger correlations among values than is evident in the Allport et al. matrix. Particularly interesting are the correlations between the theoretical-social, theoretical-religious, aesthetic-social, aesthetic-political, and social-political values which are not at all so strongly interrelated in the Allport et al. matrix. What is even more interesting is that Sciortino is himself aware that the values are artifactually inter-correlated as a result of the scoring system alone, tending to produce a negative intercorrelation matrix in both the Allport et al. and the Sciortino matrixes. Despite this, Sciortino makes not the least mention of the introduction of any correction factor in dealing with these correlations in an effort to separate true value co-variance from artifactual covariance.

There is yet another point to be considered in regarding the Sciortino study. Examination of the Allport et al. correlation matrix (p. 5) reveals that there are considerable differences in the nature of the correlations between males and females, and that it would be, perhaps, better to consider these two matrixes separately. Sciortino, on the other hand, makes no mention of any possible difference between males and females and simply proceeds to combine the data and factor the intercorrelation matrix as if, in fact, there were no differences. This seems somewhat less than desirable.

With these precautions in mind, let us consider Sciortino's factors.

Factor A seems to be an aesthetic factor. Factor B seems to be a social factor and C a religious factor. Of course, whether we (1) think it is best, in this case, to designate these factors by their highest positive loadings or simply by their highest loadings. (2) Are satisfied that simple structure has been achieved and (3) are convinced that the combining of male and female samples was an aid to factor clarity, are debateable points which I still not spend time to discuss here.

In any case, I believe it is fair to say that the factorial nature of values in general and the AVL values in particular, is far from clear and could stand more research (see summary of factor studies in table 7).

Table 7. Summary table of the four factor studies using the AVL and related scales

Studies	Number of major factors	Nature of factors	Extraction & rotation	Final solution structure	N =
Lurie 1937	4	1. social 2. philistine (+ power & utility - aesthetic) 3. theoretical 4. religious	centroid	oblique	203 M+F
Ferguson 1941	4	1. aesthetic & theoretical - economic 2. theoretical vs. political 3. religious & social vs. aesthetic 4. political vs. economic	centroid	orthogonal	93 M
Duffy & Crissy 1940	3	1. philistine (economic & political vs. religious & aesthetic 2. social vs. theoretical 3. theoretical vs. religious & political	centroid	orthogonal	108 F
Sciortino 1970	3	1. aesthetic vs. economic 2. social vs. theoretical 3. religious & social vs. political	principal components	varimax orthogonal	150 M+F

III. OCCUPATIONS AND VALUES

In this section we shall spend some time discussing the relationship between values, conceived outside of the AVL framework, and occupational interests and goals.

As the frame of reference and orientation for section two was the theoretical formulations of Eduard Spranger, so shall the frame of reference in a discussion of occupational interests and values be the theoretical formulation of J.L. Holland.

A. Holland's theoretical formulations

It is not difficult, as we shall see, to discern the influence of Eduard Spranger in Holland's typology. But according to Holland's own reckoning, one must also pay some attention to Adler, Fromm, Jung, Sheldon and most especially to the factor analytic work of Guilford (see Holland, p. 10 for specific references).

Sharing the conceptual framework of almost all post-freudian psychologists interested in the morass of human behavior, the lynchpin in Holland's theory of vocational interest is that these interests can be conceived of as expressing distinctive and stable features of personality. This assumption is, by this time, such a commonplace that it is almost difficult to remember. Nonetheless, Holland's theory of vocational choice becomes at once both a theory of vocational choice per se and a theory of personality.

The major outlines of the theory can be summarized by four rather broad assumptions:

(1) that people can be categorized as belonging to one of six types - realistic, intellectual, social, conventional, enterprising and artistic. The superficial similarity between this and the Spranger typology is striking, but on closer examination we shall see several important differences. Each type is conceived of as a theoretical model, an interaction of hereditary, cultural, and personal forces, against which any given individual can be measured. Each type, resulting from all of these forces, can be conceived of as a qualitatively distinct coping mechanism, a complex set of a responses arising out of any set of C_i predisposing conditions.

(2) There are six distinct kinds of environments: realistic, intellectual, social, conventional, enterprising and artistic. Each of these environments is produced and dominated by a given personality type and each environment is characterized by physical settings posing special problems and stresses. As an example, intellectual environments are conceived of as predominated by intellectual people, therefore each environment can be classified according to the predominate personality type composing it.

(3) People search for environments and vocations that will permit them to exercise their skills and abilities, to express their attitudes and values, to take on agreeable problems and roles, and to avoid disagreeable ones. As a consequence, it can be seen that social types will seek out social environments, etc.

(4) An individual's behavior can be predicted from knowledge of his personality type and his environment.

Aside from the personality typology itself, this theory seems so general, almost simple-minded, as to appear practically useless in the prediction of the behavior of any one person or even any group of people. As we shall soon see, however, this first impression is unfounded.

B. Description of the types

Realistic - The realistic type is masculine, physically strong, unsocialable, aggressive, has good motor coordination and skill, lacks verbal and interpersonal skills, prefers concrete to abstract problems, conceives of himself as being aggressive and masculine and as having conventional political and social views. The goals and values of the realistic type can be described as: preferring conventional values, particularly economic values and holds aesthetic values of particularly little importance.

Empirical Definition. The realistic person prefers, is training for, or works at such occupations as the following:

master plumber	weather observer
photographer	radio operator
machinists	electronic technician
hunter-trapper	electrician
power station operator	house painter
aviator	crane operator
construction inspector	photoengraver
army officer	locomotive engineer
surveyor	tree surgeon
tool designer	carpenter
fish and wildlife specialist	filling station attendant
truck driver	ranch hand (cowboy)
automobile mechanic	draftsman
forest tanger	airplane mechanic
power shovel operator	

Intellectual - This person is task oriented, intrareceptive, asocial, prefers to think through rather than act out problems, needs to understand, enjoys ambiguous work tasks, has unconventional values and attitudes.

The goals and values of this type are primarily theoretical and secondarily aesthetic.

Empirical Definition. The intellectual person prefers, is training for or works in such occupations as the following:

physicist	writer of scientific or technical articles
surgeon	editor of scientific journal
scientific research worker	geologist
botanist	veterinarian
experimental psychologist	architect
interplanetary scientist	scientific authority
astronomer	archeologist
aeronautical design engineer	science-fiction-writer
anthropologist	meteorologist
zoologist	biologist
atomic scientist	scientific theorist
chemist	experimental laboratory engineer
independent research scientist	
mathematician	

Social - The social type is social, responsible, feminine, humanitarian, religious, needs attention, has verbal skills and interpersonal skills, avoids intellectual problem solving, physical activity and highly ordered activities, prefers to solve problems through feelings and interpersonal manipulations of others. The goals and values are social and religious.

Empirical Definition. The social person prefers, is training for or works at such occupations as the following:

world peace organizer	elementary school teacher
psychiatric case worker	YMCA secretary
personal counselor	truant officer
assistant city school superintendent	clinical psychologist
conciliator	playground director
judge	school principal
psychiatrist	physical education teacher
juvenile delinquency expert	marriage counselor
high school teacher	speech therapist
foreign missionary	director of welfare agency
employment interviewer	pediatrician
boy scout official	public relations man
social science teacher	social worker
	vocational counselor

Conventional - This type prefers structured verbal and numerical activities and subordinate roles, is conforming and extraceptive, avoids interpersonal situations and problems involving interpersonal relationships and physical skills, is effective at well-structured tasks, identifies with power.

The goals and values are economic, material. These people have low aesthetic and religious values.

Empirical Definition. The conventional person prefers, is training for, or works in such occupations as the following:

bank tellor	efficiency expert
court stenographer	insurance clerk
IMB equipment operator	budget reviewer
tax expert	quality control expert
cashier	bookkeeper
administrative secretary	certified public accountant
statistician	records supervisor
payroll clerk	cost estimator
real-estate appraiser	shipping and receiving clerk
post office clerk	banker
financial analyst	office manager
inventory controller	administrative assistant
traffic manager	chief clerk
credit investigator	bank examiner

Enterprising - This type has verbal skills for selling, dominating, leading, conceives of himself as a strong, masculine leader, avoids well-defined language or work situations requiring long periods of intellectual effort, is extraceptive, differs from the conventional type in that he prefers ambiguous social tasks, is orally aggressive. The values and goals of the type are strongly political and economic as opposed to theoretical and aesthetic.

Empirical Definitions. The enterprising person prefers, is training for work at such occupations as the following:

car salesman	restaurant manager
personnel manager	president of manufacturing company
liquor salesman	business executive
congressional lobbyist	television producer
buyer	industrial relations man
manufacturer's representative	business promotor
amusement park manager	speculator
real-estate salesman	life insurance salesman
sales manager	route salesman
traveling salesman	radio program director
auctioneer	stock and bond manager
master of ceremonies	travel consultant
politician	sports promotor
hotel manager	
insurance manager	

Artistic - This type is asocial, avoids problems that are highly structured or require gross physical skills, resembles the intellectual type in being intrceptive and asocial, but differs from that type in that he has a need for individualistic expression, he has less ego strength, is more feminine, and suffers more frequently from emotional disturbances, prefers dealing with environmental problems through self-expression in artistic media. The values are highly aesthetic and negatively political and economic.

Empirical Definition. The artistic person prefers, is training for or works at such occupations as the following:

furniture designer	mucial arranger
translator	art dealer
humorist	window decorator
art critic	newspaper reporter
stage designer	sculptor
poet	interior decorator
novelist	music critic
symphony conductor	clothing designer
dance band leader	composer
commercial artist	stage director
actor	playwright
free-lance writer	cartoonist
portrait artist	concert singer

Besides being classified as a member of one of any of the six types, Holland also makes provision for classifying people with respect to their first and second greatest type resemblance. So, for instance, a hotel manager might have a primary type of enterprising and a secondary type of social. Holland has consequently developed a convenient coding system for such an individual (see table 3).

Empirical Definitions. The enterprising person prefers, is training for work at such occupations as the following:

car salesman	restaurant manager
personnel manager	president of manufacturing company
liquor salesman	business executive
congressional lobbyist	television producer
buyer	industrial relations man
manufacturer's representative	business promotor
amusement park manager	speculator
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Table 8. The coding of interest inventory scales for the study of types and subtypes

Type and scales names							
Subject	real.	int.	soc.	conv.	ent.	art.	
Types & scale numbers							
	1	2	3	4	5	6	Code
A	10	20	70	60	90	50	53
B	80	90	20	30	40	10	21
C	10	40	50	35	40	85	63

(From Holland, 1966, p. 41.)

Of course, there is nothing preventing us from extending this coding system into all six dimensions in their order of magnitude. A latent class analysis in 6 dimensions would seem ideally suited to this purpose (specifically, a latent Q analysis). We should take note of the fact that all of the values ascribed to Holland's various personality types are the same values found in Spranger's typology, even though the personality typologies are somewhat different. As far as we are concerned, being primarily interested in values and not personality theory, we are essentially in the same universe (Spranger system). This is, of course, built on the assumption that Holland means the same thing with the words theoretical, artistic, social, etc. as Spranger and Allport et al. mean with the same words. As far as I have been able to detect there is no major difference in how these concepts are defined. Nonetheless, we must still be aware of the danger that even if the values, traits, etc. are similarly defined in the two instruments, they might not always be measuring the same thing. As a case in point, we shall examine a correlational comparison of the AVL (1951) with the Kuder Preference Record. In this study Iscor & Lucier (1953) compared both scales on a population of 90 males from the University of Texas. We have abridged the author's table somewhat to bring our point into sharper relief (see table 9).

Table 9. Correlations between scores of the Kuder Preference record and scores of the AVL for social and theoretical interests.

AVL	KUDER	
	($r = .85$) theoretical	social ($r = .86$)
theoretical ($r = .87$)	.20	
social ($r = .77$)		.10

(abridged from Iscoe & Lucier, 1953, r^2 = reliabilities.)

C. Research results within Holland's framework

Besides Holland's own empirical support for the theory, which we are not reporting in any detail, we shall examine two subsequent validation studies.

Folsom (1969) used a sample of 1,003 students at the university of Maine (M = 554, F = 449) to study the student's self-descriptions as derived from parts 2-7 of the College Students Questionnaire (CSQ) as correlated with Holland's personality types. The CSQ, part I, contains a list of 69 possible college majors. Ss were instructed to select the college major they are planning to pursue using Holland's criterion list of fields of study (Holland, 1966, p. 122-4). Three judges independently categorized these 69 college majors into 6 personality classifications proposed by Holland. The Ss were then given the remaining seven sections of the CSQ. Furthermore, with the exception of Holland's description of the enterprising type, the Ss' self-descriptions are generally consistent with Holland's theory (see table 10).

Williams (1972) investigated the validity of Holland's theory of vocational choice, value preferences and personality on a sample of 145 male graduate students at the university of North Dakota. The Ss were selected from 18 different graduate departments and these vocational choices were classified into one of the six Holland types, matched against their scores on the:

1. Holland vocational preference inventory
2. AVL (1960 edition)
3. The Miller Occupational values indicator
4. The Cattell and Eber Sixteen Personality Factor Questionnaire.

In each case the Holland typography was the criterion set to be discriminated and predicted on the basis of scores on the other 3 tests. Results showed, somewhat in support of the Folsom findings (1969), that the enterprising and realistic types were the least well discriminated types while the intellectual and conventional types were the most well discriminated. The results also showed that scores on all 4 tests were significantly related to vocational choice.

Table 10. Comparisons of the six personality types on the College Student Questionnaire (CSQ) scales showing significant F Ratios and Duncan Test results

CSQ	Duncan test						F ratios
MALE LIBERALISM	intell.	art.	enter.	soc.	conv.	real.	2.670'
	<u>25.40</u>	<u>25.97</u>	<u>25.24</u>	<u>25.23</u>	<u>24.40</u>	<u>24.09</u>	
cultural sophistication	art.	soc.	enter.	intell.	real.	conv.	6.903'''
	<u>23.13</u>	<u>21.11</u>	<u>20.77</u>	<u>19.98</u>	<u>18.75</u>	<u>18.25</u>	
female peer independence	art.	conv.	intell.	soc.	enter.	real.	2.270'
	<u>24.00</u>	<u>24.04</u>	<u>23.51</u>	<u>22.51</u>	<u>22.68</u>	<u>22.08</u>	
cultural sophistication	enter.	art.	intell.	soc.	conv.	real.	3.068''
	<u>24.16</u>	<u>22.85</u>	<u>22.31</u>	<u>21.68</u>	<u>20.87</u>	<u>20.76</u>	
MALES & FEMALES motivation for grades	art.	soc.	intell.	enter.	real.	conv.	4.425'''
	<u>28.08</u>	<u>27.57</u>	<u>27.21</u>	<u>27.06</u>	<u>26.14</u>	<u>25.48</u>	
family independence	real.	intell.	conv.	enter.	art.	soc.	4.501'''
	<u>22.12</u>	<u>22.04</u>	<u>22.00</u>	<u>21.41</u>	<u>20.97</u>	<u>20.51</u>	
peer independence	art.	intell.	real.	conv.	enter.	soc.	2.866'
	<u>24.32</u>	<u>24.08</u>	<u>23.99</u>	<u>24.04</u>	<u>23.24</u>	<u>23.10</u>	
liberalism	art.	enter.	intell.	soc.	conv.	real.	6.124'''
	<u>26.30</u>	<u>25.86</u>	<u>25.85</u>	<u>25.68</u>	<u>24.82</u>	<u>24.35</u>	
social conscience	soc.	art.	enter.	intell.	real.	conv.	13.186'''
	<u>29.42</u>	<u>28.89</u>	<u>28.55</u>	<u>27.67</u>	<u>26.68</u>	<u>25.31</u>	
cultural sophistication	art.	enter.	soc.	intell.	real.	conv.	17.812'''
	<u>22.91</u>	<u>21.89</u>	<u>21.60</u>	<u>20.84</u>	<u>19.02</u>	<u>18.81</u>	

Note - Underlined means are not significantly different, nonunderlined means differ significantly at the .05 level. Table taken from Folsom, 1969.

' p less than .05

'' p less than .01

''' p less than .001

There has, in general, been good agreement that values, as measured by different instruments from different frames of reference, do share a significant relationship to occupational choice. (See Humbert, 1966; Normile, 1967; Pallone, Rickard & Hurley, 1970; Belluci, 1970; Anderson & Bosworth, 1970; Shipman, 1970; England & Koicke, 1970.)

Unfortunately, the nature of these occupation motivating values vary substantially from theoretical system to theoretical system.

An example of some of these values, which are not shared by the Spranger-Allport et al. -Holland system are:

1. Job stability, job enjoyment (Anderson & Bosworth, 1970).
2. Self-meaning, creativity, prestige, association and independence (Pallone, Rickard & Hurley, 1970).
3. Accomplishment, freedom, unrestriction, cleanliness, authority, rights, obligations (Humber, 1966).
4. Leadership (Belluci, 1970).

What these values share in common with each other and with the values in the Spranger-Holland system, is, still a substantial mystery despite some of the factor analytic work outside of the Spranger-Holland system (to be reported below).

D. Factor analytic studies of vocational choice and value preferences outside of the Spranger-Holland system

Astin (1958) selected 21 items assumed to cover the following three areas of work satisfaction:

1. monetary & prestige rewards
2. intrinsic satisfactions
3. concomitant satisfactions (from the physical and social working environment).

The items were administered to 355 male college freshman at the University of Maryland. The matrix of intercorrelations between the scale scores of the items were cluster analyzed and 4 clusters were derived, 3 of which were interpreted. The clusters and their highly loaded items were:

- a) Managerial-aggressive
 - 1. control other employees
 - 2. influence, persuading others
 - 3. working under stress
 - 4. taking orders (negative)
 - 5. expressing personal ideas and feelings
 - 6. keeping very busy
 - 7. frequent change of duties
- b) Status-need
 - 1. high salary with uninteresting work
 - 2. high salary with uncertain success
 - 3. recognition by others with uninteresting work
 - 4. frequent travel
 - 5. living in a large city
- c) Organization-need
 - 1. making verifiable judgements
 - 2. attention to accuracy
 - 3. working at a set time schedule
 - 4. having co-workers with similar interests
 - 5. working closely with others
 - 6. keeping very busy

The intercorrelations among the clusters were essentially zero.

This study is interesting for a number of reasons. Firstly using just a little imagination, it is not too difficult to see a certain correspondence between these clusters and the political, economic and conventional types in the Spranger-Holland typologies. On the other hand, it is also clear that these 3 factors or clusters do not exhaust occupational motivation space. These 3 "factors", it seems to me, fall far short of being able to account for all of the motivations or values going into the occupational choice of "people in general".

In this case, the study was really interested in validating a theoretical viewpoint (Ginsberg's) and not in accounting for all of the various of occupational choice. Nonetheless, it is just this complete variance that we are really interested in. The best way to achieve factor invariance, of course, is to cover the complete variance space of any behavior. As far as I know (given my relatively limited reading in the area) no one has

attempted to first establish "how much" of the variance of occupational choice can be reliably accounted for by values, regardless of theoretical system. This could be easily accomplished via a multiple regression model. At that point where we have accounted for a reasonably high percentage of the variance of occupational choice we could then factor this system of independent predictor variables with a chance of thereby achieving much greater factor invariance and identifiability than has been achieved thus far. This lack is a weakness of value factor studies in general, not just of the Astin analysis. But let us go on.

Bendig & Stillman (1958), in a study of job incentives among college students (N = 100, U. of Pittsburgh), deliberately selected 8 "job incentives" they assumed to underlie the hypothesized dimensions of "need achievement" and "fear of failure". The 8 job incentives were rank ordered dichotomized and correlated (tetrachoric coefficients). As with the AVL, the correlation matrix of the rank ordered items tended to be negative, resulting in, among other things, bi-polar factors. The authors also used a centroid extraction with orthogonal rotation to "simple structure". Three factors were obtained accounting for 56 % of the common variance. The factors and the incentives are reported in table 11.

Table 11. Mean ranks (N = 267) and factor loadings (N = 100) for eight job incentives

Incentives	mean rank	ROTATED FACTORS			
		A	B	C	h^2
1. opportunities to learn new skills	4.4	-69	15	07	50
2. friendly fellow workers	4.8	27	61	07	45
3. freedom to assume responsibility	3.8	-53	44	24	53
4. good job security	3.6	32	17	84	84
5. good prospects for advancement	3.4	14	-54	-59	66
6. full insurance & retirement benefits	6.7	64	00	08	42
7. recognition from supervisor for initiative	3.4	03	10	-54	30
8. good salary	3.8	20	-84	21	79
percentage of total variance		18	20	18	56

(taken from Bendig & Stillman, 1958.)

The authors labelled A as "need achievement vs. fear of failure", factor B as "Interest in the job itself vs. the job as an opportunity for acquiring status", factor C as "Job autonomy of supervisor vs. supervisor dependency". I personally found these factor interpretations highly questionable. I leave it for the reader to decide.

Crites (1961) conducted a slightly more comprehensive analysis by correlating and factor analyzing an 11-variable correlation matrix based upon 300 Ss (150 = M, 150 = F) from the University of Iowa. The variables and their subscales are:

Hammond's Occupation Attitude Rating - OAR

1. materialistic
2. competitive
3. technical
4. humanitarian

Astin's Work Satisfaction Questionnaire - WSQ

5. managerial-aggressive
6. status-need
7. organization-need
8. working conditions

Bendig & Stillman Job Incentive Rating - JIR

9. achievement-need
10. intrinsic job interest
11. job autonomy

The intercorrelation matrix was factored according to the complete centroid method and the system was rotated to orthogonal simple structure. The solution yielded 5 factors which Crites labelled:

- I "material security vs. job freedom"
- II "personal status vs. social service"
- III "social approval" - unidentified in previous work but seeming to refer to the recognition rewards of hard and diligent work in the initiation and implementation of political and service programs through aggressive and purposeful action. This factor has a distinctly "philanthropic" tone.
- IV "system" - the main characteristics of this dimension are "planfulness, order, detail, perfectionism and impersonality."

V "structure" - is characterized by a need for routine, duties, tasks, in a well defined and structured environment. This factor is somewhat reminiscent of Holland's description of the conventional type. I say somewhat because Holland describes the conventional type as having a high valuation of material wealth as a main feature, whereas this factor, "structure", is rather indifferent to materialism.

On the whole, the correspondence between these results and the "types" or factors in the Spranger-Holland system is rather skimpy and discouraging.

Schultz & Mazer (1964) factored analyzed the responses of 153 graduate students in guidance and counseling. Listing the reasons for their entering that profession, a likert type, 60 item scale composed of these reasons (supplied by a pre-test sample, N = 30) was correlated with itself and factor analyzed using a principal components extraction with a normalized varimax rotation to simple structure. The results yielded 18 factors which are listed with their respective proportions of communality (see table 12).

Table 12. The Shultz & Mazer value factors

FACTOR	% OF h^2
1. status-prestige	16
2. interpersonal-directive	4
3. altruism-social service	12
4. global appeal-human behavior	5
5. avoidance-personal threat	5
6. avoidance-business world	5
7. research	4
8. instrumental utility	5
9. global appeal working conditions	5
10. avoidance-physical labor	6
11. listen & learn	5
12. avoidance-competition	4
13. extension of personal influence	5
14. attaining acceptance & support	5
15. global appeal-interesting work	4
16. opportunity for creativity	4
17. school-related incentives	3
18. avoidance-health threat	4

It can be seen from inspection that the major factors involved here are 1. status-prestige, which we have encountered before and 3. altruism-social service, which we also have seen before in both the AVL and the Holland inventories. It is of course, somewhat surprising, in light of this particular sample, that the social motivation does not account for an even larger proportion of the variance.

There are a few interesting points here deserving of comment. Firstly, how important are these remaining 16 reasons (here accounting for 72 % of the common variance) in determining vocational choice beyond the realm of counseling and guidance? Is the technique used here (to generate the 60 item scale) inherently better for exhausting the variance space of vocational choice? None of the questions can be answered just now but need further research to resolution.

E. Summary of factor studies and relationships to the Spranger and Holland models

If we accept the factor designations at face value for a minute, can we see anything approaching value stability in the factor studies? (see table 13)

Table 13. Summary of four factor studies, outside of the Spranger & Holland models, explaining occupational choice

Study	Main factors	% of variance	N	Factor solution
Astin 1958	1. managerial-aggressive 2. status-need 3. organization-need	-	355 male Ss	B-coefficient cluster analysis
Bendig & Stillman 1958	1. need-achievement vs. fear of failure 2. Interest in the job vs. job as opportunity for status 3. job autonomy of supervision vs. super- visor dependency	18 20 18	100 M+F	centroid orthogonal rotation
Crites 1961	1. material security vs. job freedom 2. personal status vs. social service 3. social approval 4. system 5. structure	- - - - -	150F 150M	centroid orthogonal rotation
Schultz & Mazer 1964	1. status-prestige 2. altruism-social service	16 12	153 graduate components students varimax	principal rotation

(- %s not found in studies)

The motivation or value found in all of the studies is "status". This term status seems to have at least two main components. One component is the person's relative position in a hierarchy and the other is associated with material rewards or salary. Another value or motivation relatively well established (Astin, Bendig & Stillman, Crites) is the need for organizational structure and well established routine. Interest in people as an occupational motivation has been established in two studies (Crites, Schultz & Mazer). Although the factor studies establishing these values- motivations are far from exhaustive and achieve nothing approaching factor invariance and stability, there are at least some rather tentative points of contact between the Spranger-Holland value system and the results in occupational motivations. Both systems established materialistic (economic), status (political), human contact, (social), as reasonably well established value components. That all of the expensive analysis has hardly established anything that a few minutes of common-sense could not have come up with is painfully clear. Furthermore, the analyses have not been conducted in such a way as to make their conclusions irrefutable, to say the least. The factor analytic value landscape is still quite hazy, there are a few rough landmarks here and there but no detail, no specification.

That a great deal more work needs to be done here hardly needs to be uttered.

IV: ROKEACH'S VALUE SURVEY AND VALIDATING STUDIES

Rokeach is a relative newcomer to the study of values and behavior, having come from intensive work in the field of political psychology and attitudes research. He is therefore apparently unaware of the rather active research that has been going on with values and occupational choice over the last 30 years or so. That is to say that I have been unable to find a single reference or citation in Rokeach's papers referring to the rather voluminous value research, only a tiny fragment of which we have been able to discuss in the preceding pages. But that naivité can also have positive effects. It can give a fresh perspective to the discussion, having escaped the ponderous and mind boggling discussions of the past.

This, indeed, seems to be what has happened, for since the short time Rokeach has been active in the study of values, he has already contributed an experimentally novel approach which has not gone unnoticed. But we must, of course, be careful. Not everything which is novel is useful, not even if it comes from Rokeach. To be more specific, not everything which is new is more useful than that which is old. It may even be the case that that which is new is less useful than that which is old.

Let us first review Rokeach's theoretical framework.

A. Theoretical framework

Rokeach's singularly most novel contribution to the discussion of values has been his distinction between instrumental and terminal values. This distinction is one between preferable modes of conduct and preferable end-states of existence. An instrumental value is defined as a single belief which always takes the form: "I believe that such and such mode of conducts personally and socially preferable in all situations with respect to all objects". A terminal value is defined as "I believe that such and such end-states of existence (equality, freedom) is personally worth striving for". (Rokeach, 1968)

Corresponding to these separate types of values are separate types of value systems: instrumental and terminal, which are organized into hierarchical structures and substructures. Rokeach states "operationally speaking, the concept of value system or hierarchy suggests a rank-ordering of values along a continuum of importance" (Rokeach, 1968, p. 17). We should keep in mind, however, that a hierarchy and a continuum in one dimension (importance) are far from being the same thing. Rokeach has operationalized his concept of value system by the use of a rank-ordering of values in one dimension. This is significantly different from his theoretical discussion of values hierarchy which implies more than one dimension (see Cattell's discussion of ramifying hierarchies, 1966, p. 214). One gets the distinct feeling that Rokeach is confusing the theoretical with the operational level.

Rokeach goes on to mention that value systems are essentially leaned organizations of rules for making choices and resolving conflicts between two or more desirable modes of behavior (instrumental system) and two or more end-states (terminal system). It is, of course, extremely difficult to see how such an "organization of rules" in one dimension would be of any use resolving a conflict between two or more, equally importance loaded values. Furthermore Rokeach makes no distinction between what could be called manifest (or socially desirable values) and latent values (true values). It seems almost self-evident that such a distinction is quite necessary if we are interested in 1) predicting how a person will resolve a value conflict and 2) the connection between values and long range behavior.

Rokeach distinguishes between attitudes and values by defining attitudes as an organization of beliefs about any object or situation predisposing one to act in any given manner. Therefore values are more basic than attitudes and terminal values are more basic than instrumental values. A person can possess thousands of attitudes towards specific objects or situations, perhaps several dozen instrumental values and an even fewer number of terminal values. These attitudes and values are conceived of as forming a value-attitude system, hierarchically organized with the terminal values at the top or as central components, instrumental values as the intermediate components and attitudes as the distal components. Furthermore, this system is "more or less" consistent and dynamic. By dynamic is meant that a change in any part will lead to a change in the interconnected parts. The magnitude of the change is

conceived to be a positive function of the centrality of the component effected. This value-attitude system and its changes are considered to be, of course, determiners of behavior.

Consistent with one of the primary fetishes in attitude change research in the context of the american social strain dislocation, Rokeach seems primarily interested in behavior change or behavior manipulation that can be brought about through deliberate changes on value-attitude systems. Simply stated and in line with cognitive dissonance theory, Rokeach believes that inconsistencies or contradictions in the value-attitude system, of which the individual is made aware, will result in a change or congruency shift in the system and consequently to a change in behavior. Using this technique, Rokeach and others hope to be able to alleviate some contemporary social problems in american society, specifically problems stemming from racial prejudice. That this is a simple-minded and ahistorical approach to social engineering has been forcefully argued in other places and will not be discussed here (see Brown, 1968).

In his 1968 paper, Rokeach presents some experimental evidence purporting to support his notion of value-attitude change (and assumedly behavior change) resulting from the bringing to awareness of an incongruence in S's ranking of the values Freedom and Equality. I will not discuss this in any detail, as much as I would like to, but merely state that I consider the conclusions of this study, supporting his value-attitude system - behavior change hypothesis, as being severely infirmed by at least 3 issues:

1. The behavior changed was not "behavior" in the real-world but behavior on a pencil and paper test, which in this case, is probably severely affected by social desirability response set. This is a result of, among other things, Rokeach's failure to distinguish between manifest and latent values.
2. There is not consideration of the situational effect of the laboratory setting dominated by liberal authority figures etc, in the determination of the pencil and paper behavior.

3. There is not discussion, in consideration of the other real environmental field forces which are responsible for the discrepancy between the valuations of Freedom and Equality in the first place and the effect of these forces in restabilizing or reestablishing the pre-experimental value structure (assuming that real value-structure was effected in the first place and not the manifest or socially desirable value structure) (see Rokeach, 1968).

Unfortunately we cannot spend much time on these issues here but instead will consider some validation studies using Rokeach Value Survey.

B. The Rokeach value survey in experimental research

The scale is composed of 18 instrumental and 18 terminal values (form D) which Ss are to rank-order according to their importance. Rokeach finds (form A, 12 instrumental and 12 terminal values) that the rank-order of the terminal value Salvation significantly distinguishes regular churchgoers from irregular churchgoers. Students ranking salvation first are found to be in church attendance "ones a week or more" but students who go to church once a month, once a year or never rank Salvation last, on the average (Rokeach, 1968, p. 23). The relative ranking of terminal values Freedom and Equality are found to differentiate between students who are sympathetic to civil rights demonstrations and have participated, Ss who are sympathetic to civil rights demonstrations and have not participated and Ss who are not sympathetic to civil-rights demonstrations (see tabel 14).

Table 14. Composite rang-order for freedom and equality and attitude toward civil-rights demonstrations

	Yes and have participated N=10	Yes; but have not participated N=320	No, not sympathetic N=114	P
Freedom	1	1	2	.01
Equality	3	6	11	.001

(Taken from Rokeach, 1968, p. 24. P obtained by Kruskal-Wallis one-way analysis of variance.)

The value rankings of freedom and equality are also found to distinguish between policeman, unemployed Whites, unemployed Blacks and calvinist students in a midwestern city. (See table 15.)

Table 15. Composite rank-order for freedom and equality for four samples

	50 policemen	141 White unemployed	28 Black unemployed	75 calvinist students
Freedom	1	3	10	8
Equality	12	9	1	9

(Taken from Rokeach, 1968, p. 25.)

Rokeach makes a great deal of this difference, but I believe this difference to be somewhat misleading. That is to say that the word "equality" in today's USA is a highly race loaded and sensitive term reflecting opposite sides of a major political struggle in the U.S., as can be easily seen from table 15. Whether this particular term would be discriminating in other cultures, faced with other political struggles is rather open.

In a later study (Rokeach, 1970) found that when students were grouped by political loyalty to presidential candidates: Kennedy, Johnson, McCarthy, Rockefeller, Nixon, Reagan and Wallace, significant differences arose on 8 of 18 terminal values and 6 of 18 instrumental values. The values discriminating between groups are presented on pages 39 and 40.

The overall results indicated that these groups were more similar than otherwise, or that these particular values failed to indicate significant differences between groups depending on how you look at it.

Feather (1970) tested for significant differences in value rankings (Rokeach Value Survey, form E) among 463 students at Flinders University, Australia. The first part of the study concerned differences in value rankings as related to educational choice. The Ss were divided into 3 groups based upon their areas of specialization:

Values discriminating between student groups with different political loyalties

(from Rokeach study 1970)

	Kennedy		Johnson		McCarthy		Rockefeller		Nixon		Reagan		Wallace		Median Test χ^2	p=
	N=															
	273		221		149		129		291		52		118			
	Med	Rnk	Med	Rnk	Med	Rnk	Med	Rnk	Med	Rnk	Med	Rnk	Med	Rnk		
A comfortable life	8.1	7	8.5	9	10.6	11	10.5	12	9.5	11	11.1	13	7.0	5	31.96	.001
An exciting life	15.3	18	15.7	18	15.0	17	14.6	16	15.2	18	14.7	17	14.4	17	8.80	.185
A sense of accomp.	9.5	10	9.3	10	8.4	8	7.8	6	8.6	8	8.2	8	8.9	10	12.13	.059
A world at peace	3.4	1	2.7	1	3.3	1	4.1	2	3.7	2	3.8	2	3.6	2	14.67	.023
A world of beauty	14.2	16	13.6	15	13.2	15	12.6	14	13.5	15	13.0	15	14.0	15	14.11	.028
Equality	6.2	4	7.0	4	7.3	6	8.6	9	9.8	12	10.3	10	13.0	14	72.86	.001
Family security	4.0	2	3.8	2	3.9	2	4.0	1	3.6	1	3.3	1	3.4	1	4.08	.666
Freedom	5.5	3	5.3	3	5.1	3	5.4	3	6.4	3	4.8	3	5.8	3	12.10	.060
Happiness	7.6	5	7.3	5	8.0	7	8.4	8	7.7	6	7.3	5	8.3	8	5.83	.443
Inner harmony	10.9	13	10.9	13	10.0	10	10.1	11	10.4	13	9.5	9	11.3	13	7.90	.245
Mature love	13.1	14	13.2	14	11.9	14	12.7	15	12.0	14	10.5	12	10.6	12	17.06	.009
National security	9.9	12	8.4	8	11.1	13	9.0	10	8.9	10	10.3	11	9.3	11	6.75	.345
Pleasure	14.6	17	14.2	16	15.1	18	14.8	18	15.0	17	13.4	16	14.3	16	7.06	.315
Salvation	9.3	9	8.1	7	10.7	12	11.3	13	7.6	5	7.3	6	6.5	4	18.90	.004
Self-respect	7.7	6	7.8	6	7.2	5	7.7	5	7.9	7	6.5	4	8.1	6	3.49	.745
Social recognition	13.6	15	14.3	17	15.0	16	14.8	17	14.7	16	15.5	18	14.6	18	11.79	.067
True friendship	9.9	11	9.8	12	9.4	9	8.2	7	8.8	9	11.7	14	8.1	7	19.44	.003
Wisdom	8.8	8	9.6	11	6.9	4	7.2	4	7.2	4	7.8	7	8.5	9	25.80	.001

Table 16.

(from Rokeach study 1970)

(N=1233)

	Kennedy		Johnson		McCarthy		Rockefeller		Nixon		Reagan		Wallace		Median Test χ^2	Test p=
	N= 273		221		149		219		291		52		118			
	Med	Rnk	Med	Rnk	Med	Rnk	Med	Rnk	Med	Rnk	Med	Rnk	Med	Rnk		
Ambitious	6.1	2	6.2	2	6.9	3	7.1	4	6.5	3	7.5	4	5.8	3	2.94	.816
Broadminded	7.6	6	7.5	6	6.6	2	6.8	3	7.8	6	10.0	13	7.7	6	5.14	.526
Capable	10.1	10	8.9	9	9.8	12	9.7	10	9.6	9	8.8	7	10.9	14	12.93	.044
Cheerful	8.9	9	10.1	11	9.7	11	9.9	12	10.2	12	10.2	14	9.8	11	1.89	.929
Clean	7.2	3	7.0	3	10.1	13	9.5	9	9.8	10	9.7	11	7.7	5	30.70	.001
Courageous	7.8	7	8.9	8	7.5	6	7.8	5	7.3	5	6.5	3	7.5	4	8.19	.224
Forgiving	7.3	4	7.3	5	6.9	4	8.0	6	6.9	4	8.5	5	5.7	2	7.29	.295
Helpful	8.0	8	8.2	7	7.7	7	8.1	7	8.5	7	9.6	10	9.3	10	7.98	.239
Honest	3.5	1	3.4	1	3.7	1	2.8	1	3.1	1	3.1	1	3.6	1	4.63	.592
Imaginative	15.4	18	15.7	18	14.5	17	14.7	18	15.7	18	14.8	18	15.8	18	10.18	.117
Independent	10.6	13	10.3	14	9.7	10	11.6	14	11.0	13	8.8	6	10.1	12	7.30	.294
Intellectual	13.0	16	13.6	16	11.7	14	12.5	15	12.7	15	13.8	16	13.7	16	8.38	.212
Logical	14.8	17	14.7	17	13.6	16	12.9	16	13.8	16	13.5	15	14.7	17	11.85	.065
Loving	10.5	12	10.2	13	9.6	9	9.8	11	8.6	8	9.5	9	8.6	9	7.35	.290
Obedient	12.2	15	12.9	15	14.9	18	14.4	17	14.2	17	14.0	17	12.8	15	30.61	.001
Polite	10.6	14	10.1	12	12.4	15	10.9	13	11.1	14	9.9	12	10.7	13	22.54	.001
Responsible	7.6	5	7.2	4	6.9	5	6.0	2	6.0	2	6.0	2	7.7	7	19.52	.003
Self-controlled	10.4	11	9.3	10	9.1	8	9.2	8	10.1	11	9.5	8	8.3	8	12.69	.048

Table 17

1. The Humanities (drama, English, fine arts, French, Music, philosophy, spanish).
2. The Social Sciences (American Studies, Economics, Education, Geography, History, Politics, Psychology, Social administration).
3. The Physical Sciences (Applied mathematics, Chemistry, Earth Sciences, Mathematics, Psysics, Biology).

The results showed that of the 18 terminal values, the 3 groups showed significant differences on only 2: "A world of beauty" ranked higher by the Humanities than the Social or Physical Sciences and "a comfortable life" ranked higher by the Physical and Social Sciences than the Humanities. These values can be reasonably assumed to correspond to the Spranger aesthetic and economic personality types and the aesthetic and economic value clusters measured by the AVL. Of the 18 instrumental values, the 3 groups showed significant differences with respect to the 6 values: "self-control", "forgiving", "capable", "ambitious", "intellectual", "imaginative". The direction of all of the differences, except one, are congruent with and predictable by Spranger-Holland theory. The one exception is the value "intellectual". Spranger-Holland theory would lead us to believe that the physical and social science students should rank this higher than the humanities students, but the reverse, in fact occurs.

A closer inspection, however, of the specific manner in which "intellectual" is defined by the Rokeach Value Survey (RVS) reveals that it is defined or specified with the two parenthetical terms "intelligent, reflective". "Intelligent" is not a term which we would assume to differentiate between groups. All university students would assumedly place a high value on "intelligence". There is reason to believe that the pivotal expression here is the word "reflective", which connotes introspection, introception and introversion. If we assume, as the evidence suggests, that these three connotations are responded to by the Ss, then the differences become quite consistent with Spranger-Holland theory. (Note: I am here using the expression Spranger-Holland theory as if the two terms denoted a single system, which, of course, they do not. I am using the hyphen between them nonetheless because I feel that they are quite similar, belong to the same theoretical family and quite capable of complete homogenization given just a little effort.)

The Ss were also grouped by sex and compared on the differential value rankings. The results showed, again congruent in almost every respect to Spranger-Holland theory, that the sexes differed with respect to the terminal values: "A world of peace, a comfortable life, pleasure, salvation" and the instrumental values: "honest, broadminded, loving, ambitious, capable, logical".

Rim (1970) in using the RVS, found significant differences in value rankings with Ss (Israel Institute of Technology, N=75) grouped according to: 1) width of cognitive category, (Pettigrew's category width scale). 2) locus of control (Rotter's I-E scale). 3) percentage increase in digit substitution test. The results showed, in line with the Rokeach and Feather studies, that the groups are more similar than otherwise.

Feather (1970) compared secondary school students in State (N=67) and Church (N=80) schools on the RVS. The senior boys were asked to rank their own values and the school's values. In this case, there were rather substantial differences between the groups as to the number of value ranking differences. Results showed that the Ss differed on 12 of 18 terminal values and 14 of 18 instrumental values. The overall nature of the differences was quite consistent with Spranger-Holland theory. Ministers at the church schools were also compared with the students' value rankings of their own and school values with both students from State and Church schools. In each case significant differences were found.

Shotland & Berger (1970) used the RVS in a study comparing the pencil returning behavior of 131 female line workers. The workers were given an attitude questionnaire and were furnished with a pencil. At the end of the questionnaire it was discovered that 39 % of the workers returned the pencils. It was also discovered that the worker's pencil returning behavior was significantly related to their rankings of the values "honest, salvation, a world at peace and helpful".

This study is particularly interesting in that it is one of the very few times that the RVS responses have been related to "real" behavior in the "real world".

C. Comparisons of the RVS and the AVL

We shall spend a little time comparing, specifically these two value inventories because they are the most likely competitors within the field of social psychology.

There are a number of important differences between these two scales, differences which I am convinced, recommend the use of one over the other in most research situations. If we begin with a comparison of the respective reliabilities we find that the average reliability of the RVS terminal items is .65, the instrumental items is about .60 (see table 18 for complete Rokeach reliability figures).

These reliabilities do not compare terribly favorable with the AVL reliabilities. The average test-retest (two month interval) reliability for the AVL is .88. For an interval of one-month it is .89 and its average split-half reliability is .90 (see tables 1 and 2).

The administration times for the two scales are roughly comparable (20 minutes) but nonetheless, Rokeach himself comments that Ss taking the RVS find the task somewhat difficult and annoying while Ss taking the AVL do not experience such difficulty. This ranking difficulty is a contributing factor, no doubt, to the lower value reliabilities in the middle range of importance, which in turn leads to overall lower reliabilities (see figure 1).

As far as validities are concerned, direct comparisons become very difficult to carry out and are beyond the scope of this paper. Nonetheless, it is not too difficult to conceive of a technique for such a comparison. One could choose a number of different variance techniques (multiple R for instance) and simply compare the amount of: 1) occupational choice, area of study specialization etc, variance accounted for by the two inventories. As far as I know, no such comparison has been attempted. As a result, we are in no position to say which scale is more valid. On the other hand, there is an impressive volume of literature attesting to the fact that the RVS can distinguish between some of the same groups. Nevertheless, experience has shown that by and large, the RVS shows more group similarity than group differences (Rokeach, 1968; Feather, 1970; Rim, 1970; Shotland, 1970). Needless to say, it is not possible, at this point, to determine whether this accurately reflects "real" group value similarity or merely the insensitivity of the RVS to detect major differences that "really" exist.

Table 18. Reliabilities of Individual Terminal and Instrumental Values, Form D. (N=250)

Terminal Value	r	Instrumental Value	r
A comfortable life (a prosperous life)	.70	Ambitious (hard-working, aspiring)	.70
An exciting life (a stimulating, active life)	.73	Broadminded (open-minded)	.57
A sense of accomplishment (lasting contribution)	.51	Capable (competent, effective)	.51
A world at peace (free of war and conflict)	.67	Cheerful (lighthearted, joyful)	.65
A world of beauty (beauty of nature and the arts)	.66	Clean (neat, tidy)	.66
Equality (brotherhood, equal opportunity for all)	.71	Courageous (standing up for your beliefs)	.52
Family security (taking care of loved ones)	.64	Forgiving (willing to pardon others)	.62
Freedom (independence, free choice)	.61	Helpful (working for the welfare of others)	.66
Happiness (contentedness)	.62	Honest (sincere, truthful)	.62
Inner harmony (freedom from inner conflict)	.65	Imaginative (daring, creative)	.69
Mature love (sexual and spiritual intimacy)	.68	Independent (self-reliant, self-sufficient)	.60
National security (protection from attack)	.67	Intellectual (intelligent, reflective)	.67
Pleasure (an enjoyable, leisurely life)	.57	Logical (consistent, rational)	.57
Salvation (saved, eternal life)	.88	Loving (affectionate, tender)	.65
Self-respect (self-esteem)	.58	Obedient (dutiful, respectful)	.53
Social recognition (respect, admiration)	.65	Polite (courteous, well-mannered)	.53
True friendship (close companionship)	.59	Responsible (dependable, reliable)	.45
Wisdom (a mature understanding of life)	.60	Self-controlled (restrained, self-disciplined)	.52

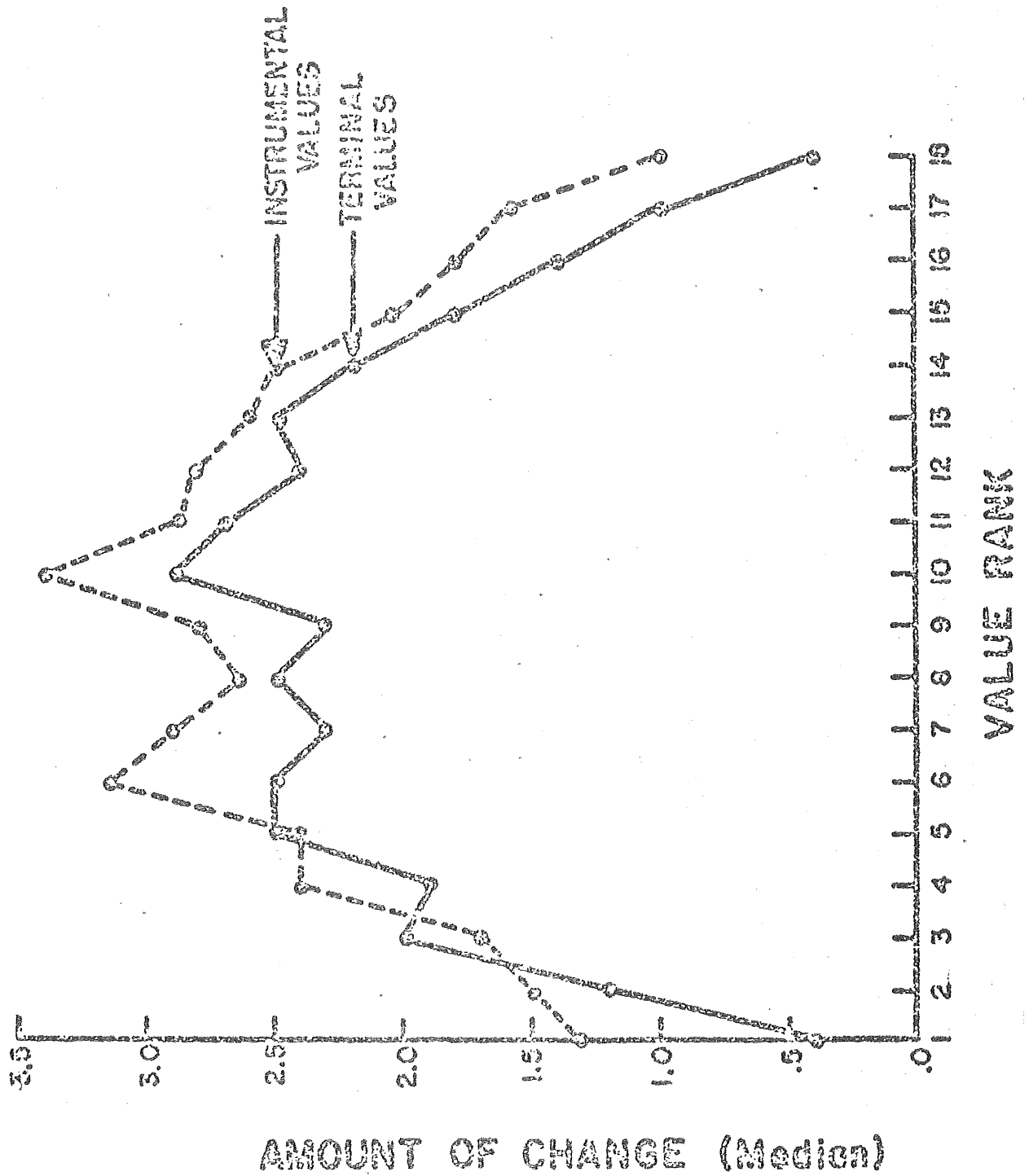


Figure 1. Median Amount of Change for Terminal and Instrumental Values Ranked First to Last (N=115)

There is, however, a difference which I feel is of major significance in evaluating the respective worth of these two instruments. The difference is, that the AVL (and the Holland Vocational Preference Inventory) is generated out of a theory of personality while the RVS is not.

This is especially important in enabling one to evaluate the significance or meaning of differences which are found. The theory enables one to make predictions about value differences before the experiment is run. After the experiment is run, one should have a slightly better theoretical or wholistic grasp on the nature of the "value universe" than one had before. That is one to make of, for instance, the difference between political and religious groups on the item "true friendship"? There is simply nothing in Rokeach which would or could predict or account for such a difference.

It would not be totally unfair to say that the RVS has to some extent, been generated by a certain mindless empiricism. We are shown differences, which may or may not be central or essential for distinguishing between the groups, but are not provided with any context in which to evaluate or understand these differences. The Spranger-Holland approach appears to strike a better balance between theory and empiricism. On the other hand, we must admit that the Spranger system represents more of a taxonomy than a theory. It is not a theory in the sense that psychoanalysis is a theory. It is not dynamic, ontogenesis or phylogenesis. Still, it is a great deal more than we are offered by Rokeach.

V. OTHER VALUE APPROACHES AND CORRELATES

A. Values and political behavior

Within the specific area of political psychology Rokeach's observation is accurate. Most work has been concerned with attitudes, specifically attitudes as they relate to political and social questions. Rokeach has done us a service, not so much in reminding of the importance of values per se, but in relating values to political behavior. Needless to say, Rokeach was not the first to investigate this specific relationship, however.

M. Brewster Smith (1949) performed a study relating personal values as determinants of political attitudes towards Russia at the beginning of the Cold war. Smith gave a list of 16 values tapping some of the main determining values as we have come to understand them. (N=250 New England males in 1947, see table 19). All of the responses were coded from interview material. The overall impression of this table seems to indicate a certain stability in the value preferences of Americans from 1947 to 1969 (Rokeach sample) even though the measuring techniques differ substantially. The sample is economically and ethnically mixed and all male while the Rokeach sample is more skewed economically and sexually mixed. For example, there is a substantial difference in the degree of importance given to "liberty" and "freedom" (mentioned by 28 %) and "racial and ethnic tolerance" (mentioned by 2 %). This has a certain isometry to the value ranking differences between "freedom" and "equality" in the Rokeach sample.

Table 19. Personal values of the respondents

Value	% who mention each value
economic security	56
home and family life	46
liberty and freedom	25
health	20
getting along well with people	13
world peace	13
happiness, enjoyment of life	12
comforts of life	10
education	10
religion	13
pride in work, doing job well	7
economic advancement, getting ahead on job	6
recreation, sports and hobbies	6
decency and morality	4
being a good citizen, community participation	2
racial and ethnic tolerance	2

Smith's results generally showed that the Ss' concern for "liberty and freedom" was the most discriminating item in terms of the Ss attitude toward Russia. The more important this value, the more negative the attitude toward Russia. That many of the Ss did not fully understand what they "really meant" by the term "liberty and freedom" and that many of their attitudes seemed to be highly subject to Mass-Media manipulation was another major conclusion.

Results also showed that values will only become determiners of political attitude to that extent that (1) the values or value is centrally integrating in the person's value-attitude hierarchy. (2) He has information (S) available to him to engage the value. (3) The scope of the value and of the individual's interest is sufficiently broad to extend to the focus of the attitude.

The idea is germinated, as a result of Smith's research, that perhaps attention should be paid to the role of the media in determining the political attitudes of the population, regardless of the population intervening variables. As far as I know, no research within the field of social or political psychology has been directed at this problem.

Evans (1952) conducted an interesting experiment in the relationship between value configurations and anti-semitism (N=169 Michigan State College students). The experiment is interesting for two reasons:

1. It is an additional confirmation of the usefulness of the AVL from the standpoint of construct validity.
2. It is congruent with authoritarian personality theory.

The results showed that:

1. There were significant negative correlations between aesthetic and social values and anti-semitism (measured by the Levinson-Sanford A-S scale, See Adorno et al, 1950).
2. There were significant positive correlations between political and economic values and anti-semitism.
3. There were no significant relationships between theoretical and religious values and A-S although a negative trend was found.
4. The value patterns, that is the relative value rankings for the 4 A-S quartiles were: (see table 20)

Table 20. Value patterns for four anti-semitic groups

	High A-S	Medium High A-S	Medium low A-S	Low A-S
1.	political	political	religious	aesthetic
2.	economic	religious	aesthetic	social
3.	religious	economic	social	religious
4.	social	social	theoretical	theoretical
5.	theoretical	aesthetic	political	economic
6.	aesthetic	theoretical	economic	political

Milton & Waite (1964), also working within the authoritarian theoretical framework, conducted an experiment relating traditional family and presidential preference in the 1964 american presidential election. Traditional family values were measured by a modified F scale and purportedly measuring the following personality aspects: Conventionalism, Authoritarian Submission, Exaggerated Masculinity and Feminity, Extreme Emphasis on Discipline, and Moralistic Rejection of Impulse Life.

The results showed the following: (see table 21)

Table 21. Presidential choice as a function of traditional family values

Presidential Choice	Number choosing	TFV mean score
Goldwater	163	152
Johnson	214	139
Wallace	24	161

(The Ss were students at the university of Georgia. A one-way analysis of variance showed the groups to differ significantly.)

Hogan (1970) performed an interesting study in the relationship between moral principles and social and political attitudes (N=149), students and non-students). The Ss were classified into two groups on the basis of their subscription to:

1. "the ethics of personal conscience" - emphasis on personal and intuitive notions of right and wrong.
2. "the ethics of social responsibility" as a rational instrument for the realization of the common good.

Results showed that Ss subscribing to the ethics of personal conscience tended to be: progressive, rebellious, unconventional, and social activists. The Ss subscribing to the ethics of social responsibility were: good-natured, thoughtful, well-socialized and somewhat conservative politically.

These results are quite interesting and offer some direct and a great deal of indirect support for a major role for "values" as determiners of political behavior. It is difficult to say for sure, however, precisely what is being measured here besides values. The ethics questionnaire used seems to be factorially quite complex.

Brown and Young (1970) performed a study relating personal values and political affiliation in Italy and came up with results quite congruent with those of Hogan (1970). These authors developed a scale labelled the Personal Philosophy Inventory and it consists of values in the area of Law, Religion, Philosophy, Politics, Marriage and Sexual relations, Art and the Education of children.

The results most germane with respect to the Hogan study (1970) are that leftists conceive of law more as a creative process and are interested in the spirit of the Law. This Spirit of the Law most probably is derived from some intuitive notions of Justice, again making the individual the final arbiter of "Just Law". The rightists, however, are more concerned with the procedure of Law. This emphasis is quite congruent with the "Ethics of Social Responsibility" as conceived by Hogan (1970). Among the other value differences between the leftists and rightists were that leftists were more atheistic, humanistic, relativistic, concerned with modern art, child-centered, permissive, emphasizing of love and selfregulation. The results are most consistent with the studies of Rightists and Leftists conducted in other countries. A major problem, however, in evaluating the significance of these findings for the present discussion is whether or not the above differences can be considered "Values" or "Attitudes" in the Rokeach distinction. Actually, at this exploratory point in research, the distinction between the two will not have any empirical significance so that we will not bother arguing or haggling over the matter.

Feather (1970), in a study mentioned earlier, also studied the relationships between certain political and non-political attitudes and value rankings, as measured by the RVS. The intercorrelations between the 7 attitudes are shown in table 22 (derived via the semantic differential technique).

TABLE 22
Intercorrelations of Attitude Scores for 1968 and 1969 Flinders Psychology Students

Attitude	1	2	3	4	5	6	7	1968 Sample	
								Mean	SD
Flinders University		.20**	-.02	-.10	---	---	---	18.66	2.26
Yourself	-.14		.17*	.05	---	---	---	14.09	2.41
Vietnam	-.16	.25**		.26***	---	---	---	11.10	5.69
White Australia	-.13	.13	.21*		---	---	---	10.77	5.32
Legalized Abortion	-.03	-.03	-.06	.06		---	---	---	---
Religious Instruction	.15	-.02	.21*	-.04	-.40***		---	---	---
S.R.C. Legal Aid	-.12	-.28***	-.45***	-.07	.14	-.24**		---	---
1969 Sample	Mean	18.52	14.47	10.57	11.23	14.88	12.32	10.73	
	SD	1.92	2.12	5.16	5.31	4.69	5.45	5.83	

Note. For attitude a score above 12 indicates a positive attitude; a score below 12 indicates a negative attitude. No data were available from the 1968 sample concerning the last three attitude issues. Intercorrelations for 1968 sample are in upper diagonal matrix; for 1969 sample in lower diagonal matrix.

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

The Ss were asked to rate: Flinders University, Yourself, American intervention in Vietnam, the White Australia Policy, etc. The results most interesting for our discussion, however, are shown in table 23. This table indicates that, for instance, a positive evaluation of the American intervention in Vietnam is positively correlated with a high value ranking for Salvation, indicating that some sort of religious "value" or motivation, among other things, underlies the Ss' pro-war attitude (the significance of these relationships were χ^2 tested).

The overall impression of table 23 seems quite consistent with what we already know in the area of political-psychology, although it is somewhat disappointing to see so few values significantly correlated with the attitudes.

TABLE 23
Relationships Between Attitude Measures and Terminal and Instrumental Values in Flinders Study 2

Group	Attitude						
	Flinders University	Yourself	Vietnam	White Australia	Legalized Abortion	Religious Instruction	S.R.C. Legal Aid
1968; All Ss			salvation (+)	equality (-) clean (+)			
1968; Males 1968; Females		family security (+) broadminded (-)	imaginative (-)				
1969; All Ss	broadminded (+)		capable (+)	equality (-) happiness (+) inner harmony (+) capable (+) helpful (-)	obedient (-)	a world of beauty (-) salvation (+)	salvation (-)
1969; Males		inner harmony (-)					an exciting life (+) independent (+) imaginative (+) courageous (-)
1969; Females					salvation (-)		

Note. The sign in brackets after each value indicates direction of relationship. Thus (+) means favourable attitude goes with high relative value, unfavourable attitude with low relative value; (-) means that favourable attitude goes with low relative value and vice-versa. No data were available from the 1968 Ss on the last three attitude issues.

Simpson (1970) performed an interesting study relating psychological need deprivation to the development of "democratic values". Psychic need was defined by Taylor's Manifest Anxiety Scale and the IPD based on Maslow's Need gratification theory. Democratic values were defined by: (1) belief in human nature as fundamentally good and trustworthy (Rosenberg's Faith in Human Nature Scale). (2) Belief in the individual as capable of acting autonomously (Hogan's Survey of Ethical Values). (3) Belief in the validity of the experiences and opinions of others (Gough's Tolerance Scale). (4) Belief that the rights of other human beings are to be respected (Gough's Socialization Scale) and (5) belief in the ability of the individual to control his environment, his life and his future (Rotter's I-E Scale). Results showed that psychic need was significantly related to (p less than .001) democratic socialization as defined above. The author concludes that institutional democratic socialization will not produce a democratic personality unless the child's basic needs are satisfied. This is a conclusion that has been firmly established elsewhere (see Adorno, et al., 1950, Brown, 1972).

Besides these strictly psychological approaches to values and political attitudes, the sociological literature has also shown some positive and interesting results using values as an avenue of attack (DeCharms & Moeller, 1962, Lipset, 1963, Thayer, 1968, Ross, 1970 and Donley & Winter, 1970).

B. Cross-cultural value constancies

What are the value similarities between countries and cultures? How safe is it to generalize results found in the U.S. with relationships found in Sweden? Neither of these two questions can be answered directly, but we can get some general impressions for the following 3 studies.

Cameron & Robertson (1970) made a comparison of the value rankings of Scottish (N = 1,189) and American children (N = 1,368) in 3 different sections of each country. Values were rated in a structured and open-ended questionnaire form. The overall results showed remarkable similarity of value rankings, especially in the structured questionnaire.

The values used in the structured interview were:

- (a) Usefulness- "feeling useful and worthwhile is ... doing something constructive is ... knowing you're needed is ..."
- (b) Living space ... having plenty of room so you're not always bumping into people is ... living in a place with lots of room is ... having a place to get away from people is ..."
- (c) Comprehension "understanding why and how things work knowing what you're supposed to do and how to do it is ... knowing where you stand is ..."
- (d) Freedom "being treated like everyone else, no better and no worse, is having the same rights and opportunities as others is ... being treated fairly is ..."
- (e) Lack of Physical Want "not feeling hungry or thirsty is ... feeling sure you'll always have the things you need is ... getting plenty of sleep so you feel rested ..."
- (f) Community "being liked by almost everyone is ... having one or two close friends is ... not having to be all alone too much is ..."
- (g) Status "having others admire you is ... having lots of nice things is ... knowing you're "in" with your friends is ..."

The results showed the following: (see tables 24 and 25)

Table 24. Rank ordering of the various values

		U.S.			Scotland		
		10-12yr.	13-15yr.	16-18yr.	10-12yr.	13-15yr.	16-18yr.
Boys	cmp	cmp	cmp	cmp	cmp	cmp	cmp
	use	use	use	use	use	use	use
	equal	equal	equal	equal	equal	equal	equal
	comm	comm	comm	comm	phys	phys	comm
	phys	phys	phys	phys	comm	comm	phys
	space	space	space	space	space	free	space
	stat	stat	stat	stat	stat	sp-stat	free
	free	free	free	free	free		stat
Girls	cmp	cmp	use	cmp	cmp	cmp	cmp
	use	use	cmp	use	use	use	use
	equal	equal	equal	equal	equal	equal	equal
	phys	comm	comm	phys	comm	comm	comm-phys
	comm	phys	phys	comm	phys	phys	
	stat	space	space	space	space	space	space
	space	stat	free	stat	stat	stat	free
	free	free	stat	free	free	free	stat

(the values are ranked from highest to lowest = top to bottom)
 Taken from Cameron & Robertson, 1970.)

These similarities are rather striking and might be aided by the fact that both the U.S. and Scotland are English speaking and share a common cultural heritage. Nonetheless, one should expect that certain major differences should emerge. Specifically, one might expect that the valuation of "equality" should be significantly different in the two countries due to markedly different sociological and historical conditions. One would expect "equality" to be rated lower by Americans than by Scots because of the high race loading of the expression (see Rokeach, 1968). Unfortunately such is not the case. The reason for this homogeneity is probably due to the fact that equality is defined differently here than by Rokeach (1968). Here equality is given the distinct denotation of how the S would like to be treated himself, by other people. In Rokeach, equality has the distinct connotation of how one should treat others and not of how one should by others. The Rokeach equality item is given a distinct racial overtone "brotherhood, equal opportunity for all". This racial tinge is distinctly connotative. On the other hand, nothing racial is implied in the Cameron & Robertson equality item.

More distinct value ranking differences begin to emerge in the open-ended questionnaire (see table 25).

Table 25. Scot and western U.S. national differences (in average percent)

U.S. (N=1341)		Scotland (N=1102)	
education	29.4	happiness, fun	24.5
family	19.1	health	24.5
career	16.0'	career	20.6
friendship	15.6	education	20.4'
religion	15.1	biological needs	16.4
happiness, fun	13.0'	family	12.4'
self-actualization	11.3	religion	12.4
love	5.8	friendship	10.5
health	4.4'	self-actualization	4.0'
biological needs	4.1'	love	1.4

('= p less than .001, table taken from Cameron & Robertson, 1970)

However, it is somewhat difficult to grasp the significance of the differences which are found. These values, like the Rokeach Value Survey (RVS), were chosen in a somewhat ad hoc fashion and without theoretical foundation. Aside from certain vague references to Assorie and Marx, little in the way of interpretation is given and even here the interpretation is directed at the value similarities and not the value differences.

Parsons (1971) compared the values of spanish-surname american students with those of national norms. The Polyphasic Values Inventory was used, which covers political, economic, educational, social, personal-moral and religious values, organized on a conservative to liberal continuum. Significant differences were found between the spanish-surname students and the normative groups. The only item for which spanish-surname students did not differ were on attitudes concerning the treatment of communists in the U.S. The overall differences indicated that spanish-surname Ss had generally more liberal values especially on items concerning the right to vote, the circumstances for american military action against another country, the development of good citizenship and man's responsibility for his deeds. The general results of the study are consistent with the principles of enlightened self-interest and Lipset's status anxiety hypothesis.

Another study in the same vein, using Mexican-Americans as opposed to Anglo-American Ss, found differences in the valuations of religious and political competition. Mexican-Americans were significantly higher in both areas (Del Campo, 1971). Unfortunately, because only an abstract of this study was available, precise comparisons are not possible here.

On the basis of the scanty cross-cultural research presented here, no general statements can be made on the value homo or heterogeneity of different countries and cultures.

C. Other studies having to do with values

I might add parenthetically and for the especially interested rather, that values have also been studied, with positive results, in the area of attitude change (Edwards, 1970, Nelson, 1968), as related to structured and institutional role characteristics (Ellenberg, 1970, Luzzi, 1970), as a function of sex-role (Stein, 1971), as related to figure preference and personality (Cornwell, 1970), as related to dogmatism and anxiety (Brooks, 1971), as related to perceptual rigidity (Blakey, 1970), as related to fraternity membership and critical thinking (1971).

New measures of values have recently been developed by Thomas (1970) and Henrickson (1971). Unfortunately, only the study abstracts were available so that intelligent comment was not possible here. The interested reader is referred to them.

Conclusion

As a result of our scanty persual in the experimental application of the value concept, there seems to be little doubt that values can be empirically demonstrated as related to many primary interests and occupations of human beings. The value preferences of individuals are of predictive utility in enabling us to predict the occupational choice, the major field of interest and the dominant political ideology of that individual. There is, therefore, every theoretical and empirical reason to believe that the value preferences of Swedish subjects would be of use in enabling one to make relatively accurate predictions about the future behavior of these individuals.

Unfortunately, the research is not yet sophisticated enough to enable us to know exactly how many primary value dimensions we are dealing with or how many we should be dealing with given certain specific behaviors to be predicted. Neither are we in any position to know exactly or even approximately which value dimensions will be more important to us in a Swedish milieu as opposed to an American milieu.

As to the choice of instrument to be used, I recommend the Allport-Vernon-Lindzey study of Values (1960 edition) unhesitatingly because of its high reliability, high validity, well established norms, well-research history and comparison potentiality, easy administration and the fact that it is established on some well articulated and testable theoretical grounds, enabling one to draw inferences beyond the immediate results.

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- I Planläggning
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