

Appendix E

Test use by NROTC Instructors

**AN INTERPRETIVE SEQUENCE FOR THE STRONG
VOCATIONAL INTEREST BLANK**

INTERPRETING COLLEGE ADMISSION TESTS

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INTRODUCTION

Counseling instruments such as the Strong Vocational Interest Blank are utilized to understand the client and provide him with information for self-evaluation and decision-making. The counselor uses tests primarily as a means of getting to know the client. Tests help counselors to see through people in order to see them through. Tests, in this context are merely a means of reducing the time needed to get to know a person. If more time were available to spend with each individual, tests would be unnecessary. We could come to know people more insightfully by spending time with them, having dinner at their home, participating in their hobby with them and attending school or work with them. However, since our time is limited, we attempt to learn about people by asking them to respond to a series of questions about their occupational preferences, types of people they like, amusements, activities and characteristics. Their responses are summarized on scales that allow us to digest this information more efficiently. The results are plotted on a profile sheet, ready for interpretation. The following pages present a method of interpretation that may prove beneficial in coming to understand the motivation of the people you work with. It is intended to be a supplement to the Strong Vocational Interest Blank manual.

INTERPRETIVE SEQUENCE

The Strong Vocational Interest Blank (SVIB) profile sheet reports a variety of data. In order not to miss relevant information about a person, a systematic sequence of interpretation is preferable to a random, free association style. By ordering the differing types of data in a logical sequence, similarities and contradictions in interpretation become readily apparent. A five step sequence will be presented.

- I. Response set
- II. Basic interests
- III. Occupational interests
- IV. Non-occupational interests
- V. Integration

I. Response Set

As a first step in interpretation, we are interested in the mood of the client when he took the test. There are two stylistic variables to be considered in answering this question: administration time and response style.

A. Administration time

The counselor should be alerted when an individual takes an excessive amount of time to complete the inventory. Campbell reported in the manual that the median time for high school seniors is about a half hour. Only eleven percent required more than fifty minutes.¹ The counselor should begin to pay attention when the subject takes more than an hour to complete the task. The interpreter may entertain several questions as to the reason for the client's "slowness": 1.) Can he read at the expected level of effectiveness? 2.) Is he legalistic and overly cautious? and 3.) Is he able to perform the decision-making task each item requires?

B. Response style

To evaluate the client's response style we look to the administrative indices which are merely results of routine clerical checks. The last three are of interest in this regard. The trio are percentage of items endorsed as like (LP), indifferent (IP) and dislike (DP). These percentages are based only on the first one hundred items. The typical expectation is a fairly balanced split (33-33-34) but wide deviations from this are within normal limits (e.g. 25-50-25; 40-20-40).

In terms of interpretation, the counselor may hypothesize that subjects who like many occupations are expressing a sociable, cheerful, enthusiastic, and active outlook about the world. Many dislike responses may reflect an unsociable, depressive outlook. Many indifferent responses may reflect a passive, apathetic outlook. A disproportionate number of indifferent and dislike responses may reflect poor morale and even depression. Clinically interpreted, many dislikes may reflect self-depreciation and an extreme number of dislikes may reflect depression. Many like responses may reflect self-confidence and an extreme number of like responses may reflect poor judgment and lack of personal integration. For example, a client with a 3-10-84 distribution was found to be very depressed, while another client with a 99-0-1 distribution was found to be very naive and confused.

It is important to remember that these interpretations are intended as hypotheses to be investigated during the counseling interview.

II. Basic Interests

The basic interest scales result from a simple count of endorsements of homogeneously grouped items. The basic interest scales (BIS) use only 186 of the 399 items. The median number of items on the BIS is ten compared to a median of 64 on the occupational scales. Scale scores are determined almost exclusively by like responses. BIS attempt to measure the client's preference for broad interest areas. They are viewed as representative of the client's conscious communication to the counselor. BIS are quite subject to manipulation by the client and should be viewed as claimed or expressed interests, as opposed to the occupational scales which are conceptualized as measured interests. Because they contain homogeneous item content, the BIS have greater parsimony and psychological interpretability than do the heterogeneously constructed occupational scales. They do, however, give us clues as to the client's preferred life style, needs and values. When interpreting the BIS the counselor asks such questions as:

What does he say about himself?
What does he like?
How does he characterize himself?
How does he approach life?
What motivates him?

The BIS may answer these motivational type questions. In terms of a conceptual framework for interpretation, two questions should be prominent. "What does he want out of life?" and "How does he propose to get it?" The what question pertains to values, while the how question pertains to interests. Though the BIS directly measure the how, they do give clues to the what because of their high degree of psychological interpretability.

Allport has stated that we can best know a man by his hierarchy of interests.² From this hierarchy, it is possible to speculate about which values a man subscribes to. In this context, we look at values as an attitudinal readiness to behave in certain ways. Values become "tendency systems". A group of axioms of behavior (values) is highly characteristic of each person and forms the basis for an active philosophy of life. This philosophy of life does not necessarily reside in intellectualized formulations, but rather in general attitudes (active principles which manifest themselves in certain characteristic, more or less consistent, directions of a person's behavior).

The arrangement of expressed interests offers us clues to the client's values and goals in life. Each of the BIS can be construed as reflecting a value type. For the purposes of interpretation, many counselors utilize Spranger's notion of six value types. Spranger was a nineteenth century philosopher-psychologist who grouped men into six types: theoretical, economic, aesthetic, social, political and religious.

High scores on the science and mathematics basic interest scales may reflect theoretical values. Men who subscribe to theoretical values often have a dominant interest in a search for knowledge. They take a cognitive, problem-solving approach to life. They tend to be analytical, curious, rational and scholarly. They frequently have high needs for achievement and hard work, with a below average need to dominate others.

High scores on the mechanical, nature, agriculture, adventure, technical supervision and military activities basic interest scales may reflect economic values. These people are characteristically interested in what is useful and practical. They are often pragmatists. Vocationally, they are typically business, skilled trade or mechanically oriented. They frequently seek economic sufficiency. They are often motivated to seek luxury and an abundance of creature comforts. Typically they have a need to work hard.

High scores on the music, art and writing basic interest scales may reflect aesthetic values. Aesthetic type persons see life as a series of artistic episodes. They are interested in art, music, history, foreign languages, poetry, writing and other cultural pursuits. Their interests reflect their desire to be self-expressive. They typically have high needs for independence and creativity, and low needs for order and structure.

High scores on the recreational leadership, social service and teaching basic interest scales usually reflect social values. Social persons are often altruistic and humanistic. They are interested in making a difference in other people's lives. They tend to be sympathetic and sociable. They often have a high need for nurturance, affiliation and dominance.

High scores on the public speaking, law/politics, business management, sales and merchandising basic interest scales usually reflect political values. Political type persons often desire leadership and power. They are frequently interested in persuading and influencing people to their point of view, and find their outlets in sales, law, politics and management. They often have high needs for dominance, prestige and status.

High scores on office practices and religious activities, combined with low score on the adventure basic interest scale, may reflect religious values. Religious type persons seek unity with the cosmos. They like to belong to something larger than themselves. They often are interested in religious life, clerical work, accounting and military life (typically as an enlisted person rather than an officer).

Persons characterized by each of the six value types look for different rewards in their work. The theoretical type looks for intellectual stimulation and challenges. The economic type looks for money, practical rewards and efficiency of job design. The aesthetic type seeks role ambiguity, job autonomy, variety, creativity and minimal supervision. The social type desires opportunities to deal with people and to form interpersonal relationships with their associates. The political type looks for job importance, prestige, status and leadership opportunities. The religious type seeks job feedback, job standards, order, close supervision, group morale and cohesiveness.

Using the analogy of how and what, we can consider choice of a military career to be a how — a way of implementing a person's what. Probably the majority of military officers share political values. They focus on the power and leadership aspects of their careers. Probably most enlisted men share religious or economic values and choose military life because it offers them routine, security, structure, and membership in a larger whole (religious type) or because it offers an opportunity to utilize technical skills and adventure (economic types).

Officer candidates (the same how) of different value types can be expected to emphasize different aspects of the role. Theoretical types, for example, may prefer military strategy and theories of politics. Economic types may prefer practical decision-making and concern themselves with making things happen on a daily basis. Aesthetic types may have the hardest adjustment to the organizational structure and look for individualistic positions that call for creativity, such as public relations and journalism. Social types may be leaders who are the "buddy" type or a father to their men. Political types may emphasize the leadership and control aspects of the role. They may enjoy working on the big picture but will let others work out the details. Religious types may make better contributions as second or third in command. They may prefer someone else take responsibility, but they will implement commands thoroughly and usually with great loyalty.

Curricular choices are, of course, closely related to the BIS and one's choice of college major should be fairly consistent with expressed interests.

The degree of harmony among a client's top BIS may reflect his psychological integration. Consistency and harmony among the highest BIS are suggestive of maturity. For example, if a client's highest scores are public speaking, law and politics, management (political type) and social service (social type), he may be concerned with using power to help people. This is consistent. These values fit together well. However, a person who values aesthetic and religious orientations does not seem as consistent. He wants independence but also dependence. He wants to be creative yet fit in. Conflicting motivations of this sort are difficult, but not impossible, to integrate. They may cause internal conflicts, indecision and confusion in the person. Inconsistent preferences may reflect immaturity. Highly consistent types of value orientations are:

- theoretical and aesthetic — creative ideas (research)
- theoretical and economic — practical ideas (engineering)
- aesthetic and social — sensitivity/sociability (communications)
- social and political — social leadership (personnel)
- political and religious — leadership and organization (management)
- social and religious — people and organization (teacher/counselor)

Highly inconsistent types are:

- aesthetic and religious — independence versus dependence
- economic and social — money versus people
- theoretical and political — thought versus action

III. Occupational interests

The occupational scales (OS) assess how similar the client is to men already employed in specific occupations. The basic interest scales have greater interpretability than the occupational scales, but they are generally less effective for predicting occupational membership. The specific occupational scale is the better method for predicting occupational membership and satisfaction.

If a client scores in the A or B + range, his interests are similar to men employed in that field. He seems to share their point of view and speak their language. Chances are approximately three to one that he would enjoy their type of work. Scores in the C and B - range suggest that the client is so different from these type men that it is unlikely he would enjoy the work they do. Chances are about seven to one against his finding satisfaction in the occupational role. Should he enter it, the prediction is that he would leave it within a three year period.

The occupational scales are grouped into general fields. All scales within a group meet statistical criteria of relatedness. The groups are:

- I. Biological Science
- II. Physical Science
- III. Technical Supervision
- IV. Technical and Skilled Trades
- V. Social Service
- VI. Aesthetic-Cultural
- VII. CPA Owner
- VIII. Business and Accounting
- IX. Sales
- X. Verbal-Linguistic
- XI. President, Manufacturing Concern

In interpreting a profile, one pays attention to the pattern of interests. Primary patterns are the groups with the highest proportion of A and B + scores. Technical criteria for objectively identifying primary, secondary and reject patterns can be found in Stephenson (1961).³ One of the advantages of pattern analysis is that it facilitates projection of the results (though caution is indicated) to occupations that the SVIB does not assess. For example, if a person whose primary pattern is group II asked if it would be realistic for him to consider geology, the answer would be yes, since it falls in the cluster of his primary interests. There are four steps useful in interpreting the occupational scales.

1.) First, look at the scales which assess the client's expressed vocational choice. If lawyer is the expressed choice, and the lawyer scale indicates that the client is similar to men employed in this profession, the results support his intention. If a different scale is higher than law in this instance, it is very important that this be pointed out to the client, since it may be quite significant. If the law scale were low, the counselor would explore with the subject the possibility that this is an uninformed interest. The possibility exists that if the client were to explore the field in greater detail, he would find aspects of it that do not appeal to him.

2.) The second step is to seek supporting evidence by looking at the occupational group within which the expressed choice or highest scores fall. For example, if a student is considering becoming a physician, and his score on the physician scale is high, but all others in group I are low and group II is rejected, it might be difficult for him to negotiate a pre-med curriculum. How does one become a doctor if he hates biology and chemistry?

3.) Next look for support in the scales of groups other than the relevant group. For example, most subjects interested in clinical psychology who score a primary in group I, with clinical psychologist highest, will have a high score on the lawyer scale, which supports this intention. If psychologist is high, but lawyer is low, and group V is rejected, a question arises as to whether clinical psychology is a wise choice. Possibly experimental or academic psychology or some other fields should be explored by the client.

4.) Finally, analyze the pattern of interests. For example, if group X and V are both primaries, and the subject is considering law, he may prefer civil law to corporate law.

In comparing BIS (expressed choice) with the occupational scales (measured similarity to men employed in specific occupations), contradictory scores may appear for a small percentage of clients. Johnson has presented four basic patterns of like and dislike responses that may produce contradictory results between BIS and OS.⁴ The first two patterns produce high BIS scores and low OS scores. There are several possible explanations when one, for example, scores high on law/politics but low on lawyer: 1.) The client likes occupationally relevant activities, but dislikes other activities liked by members of the occupational group. 2.) The client likes relevant occupational activities, but likes other activities disliked by members of the occupational group. The second two patterns produce high OS scores and low BIS scores. 3.) The client dislikes relevant occupational activities, but likes other activities liked by members of the occupational group. 4.) The client dislikes relevant occupational activities, but also dislikes other activities disliked by members of the occupational group.

To help analyze contradictory profiles, Johnson has also published the content of BIS related to each occupational scale.⁵ He presents a case example that may clarify this discussion. Student A scored 58 on law/politics but C on the lawyer scale. Inspection of Johnson's table reveals that lawyers like the following BIS: law/politics, public speaking and writing. They dislike the following BIS: technical supervision, mechanics, business management, sales, merchandising, office practices, social and medical service. "Aside from law/politics, the client's SVIB profile indicated that his basic interests were essentially opposite of lawyers. He shared only one part of the total interest pattern of most lawyers." "His law/politics interests actually blend better with those of individuals in various supervisory positions (Air Force Officer, Army Officer, Personnel Director) as indicated by his high scores on these occupational scales."⁶

IV. Non-occupational scales

The non-occupational scales are empirically derived and similar to the occupational scales in construction techniques utilized to develop them. The non-occupational scales seem to vary widely in their usefulness and validity. Four of the eight seem useful in yielding insights into the client's personality.

A. Motivation

Two scales seem to give clues to the client's motivation. The academic achievement scale is related to persistence in school. High scorers on this scale frequently seem to be of the theoretical type, while low scorers often subscribe to economic or political values. High scores on this scale reflect an interest in mathematics, science, medical service, teaching, writing and music. Low scores usually reflect an interest in technical supervision, management, merchandising, and mechanics. According to the manual, the correlation with college grades is in the .30's. Other studies have typically not shown such a high correlation of these scores with college grades. The mean score for students attaining a B.A. is 39; an M.A., 45; and a Ph.D., 62. Wagman (1971) gives fourteen clinical examples of interpretation of this scale.⁷ He concluded that a low score on this scale correlated with changes in the student's vocational goals and educational major, which can be characterized as movement away from more academic type

studies to more practical jobs and physical activity-type goals. High scores on this scale are associated with movement in the opposite direction or with maintenance of academically-oriented curricular and career choices.

The second scale that seems to assess a type of motivation is specialization level. High scorers are highly motivated to become experts or specialists. A score of 35 is considered appropriate for students expressing an interest in graduate school studies.

Configurational analysis of the academic achievement and specialization level scales is often productive.

	High AACH	Low AACH
High SL	intellectually oriented scholarly	expert in non-academic areas; (e.g. star athlete)
Low SL	curious, a generalist	minimal academic or specialization drive

B. Interpersonal orientation

Two non-occupational scales seem relevant in assessing a client's interpersonal orientation. The managerial orientation scale assesses the client's similarity to effective managers. A score of fifty indicates strong leadership potential, while thirty-five is similar to less effective managers. A low score may reflect lack of dominance and assertiveness.

The occupational introversion-extroversion scale indicates a client's tendency to move toward or away from people. Clients who score forty or lower are usually very outgoing, and they usually feel they must have a job that gives them many opportunities to interact with people. A score of fifty is considered average. A person scoring sixty or higher has described himself as shy and introverted. Scores in the seventies usually reflect a serious degree of withdrawal from people. Configurational analysis of these two scales is usually beneficial in coming to understand the client's general orientation toward people.

	High MO	Low MO
High OIE	one who leads by competence	a shy, unassertive person
Low OIE	an outgoing leader	outgoing, but not usually a leader

V. Integration

The final step in this interpretive sequence is to synthesize the interpretations produced thus far. The fragmented understanding of the client gained in the first four steps must be integrated into an understanding of a dynamic, holistic organism. This integration should be useful in providing a skeletal understanding of the client which the counselor can "flesh in" during the counseling interview.

INTERPRETING COLLEGE ADMISSION TESTS

Two widely used college admission tests are the Scholastic Aptitude Test and the American College Testing Program Assessment. As in the case of the SVIB interpretive suggestions, the following comments are to be considered supplemental to the test manuals.

The Scholastic Aptitude Test (SAT) assesses the verbal and mathematical reasoning abilities a student has developed. Each student receives a verbal and a mathematics score. These scores should be converted into percentiles before proceeding with interpretation. A score of approximately 320 may be considered equivalent to an intelligence quotient of 100. A score of 560 is roughly equivalent to an intelligence quotient in the 115-120 range.

Many counselors believe that a mathematics score that is slightly higher than the verbal score (with a difference of perhaps thirty points between the scores) suggests that the student is a hard worker. They reason that verbal skills can be attained more easily, especially in a cultured home, than mathematical skills. A student with mathematical skills is assumed to have worked hard to get them. However, if the mathematics score is too much higher than the verbal score (a difference of approximately seventy points or more), the possibility exists that the student may be overly conventional, inhibited and/or dependent.

The American College Testing Program Assessment (ACT) reports scores in four subject areas: English, mathematics, social studies and natural science. The ACT assesses general educational background-development and the ability to perform college level work. The tests focus on problem-solving and reasoning skills. The average score is twenty, with a score of twenty-six placing in the top quartile and a score of thirteen in the bottom quartile.

Students may score lower on these college admission tests than their performance in high school or other tests may suggest. Six possible categories of reasons for this are:

1. The student has poorly developed reading skills.
2. The student may have been unfamiliar with the test item format.
3. Temporary poor health or subjective states (e.g. nervousness) may have interfered with optimal performance.
4. The student might have responded to the questions with an inappropriate set (e.g. guessing, omitting items, working too fast).
5. Conditions of the test administration may have been less than adequate (e.g. too noisy, distractions).
6. Chance could have played a part in lowering scores (e.g. unlucky in guessing, knowledgeability in areas not sample).

In terms of interpretation, the counselor is advised to be generous.

FOOTNOTES

1. Campbell, David P. SVIB Manual Supplement, Standord, California: Stanford University Press, 1969, page 6.
2. Allport, Gordon W. Pattern and Growth in Personality, New York: Holt, Rinehart and Winston, 1967.
3. Stephenson, R.R. "A New Pattern Analysis Technique for the SVIB," Journal of Counseling Psychology, 8:355-362, 1961.
4. Johnson, R.W. "Contradictory Scores on the Strong Vocational Interest Blank," Journal of Counseling Psychology, 19:487-490, 1972.
5. Johnson, R.W. "Content Analysis of the Strong Vocational Interest Blank for Men," Journal of Counseling Psychology, 19:479-496, 1972.
6. Ibid.
7. Wagman, M. "Clinical and Research Use of the Strong Vocational Interest Blank Academic Achievement Scale," Journal of Counseling Psychology, 18:337-340, 1971.