

Use and Interpretation

The VS has been developed for national and cross-national use. The reliability of most of the scales is generally good for survey purposes. It is adequate for individual assessment at the adult level; at the university level the reliability of 10 of the scales is high enough for individual use, and at the high school level 8 of them have high enough reliability, while the others have alphas of .65 to .77 and require caution in counseling use (see Chapter V and Table 7). The 13 or 14 factors that emerge from factor analyses (see Tables 11, 12, and 13 in Appendix B) may prove to be better for individual assessment even though they eliminate some desirable content distinctions. The VS is now ready for (a) use in validation research, including studies of career development at various ages and different cultural groups, and (b) exploratory use in career and vocational counseling.

Validation Studies

The most important types of validity data are those that show that the instrument actually measures what theory has said it should measure. This is known as construct validity. The most readily available type of construct validity data come from analyses of the psychometric qualities of the VS (see Chapter V). The next most readily available data are studies of the VS's concurrent validity (another type of construct validity): studies that relate the VS scores to scores from other measures or to other data that theory states should be related to the VS scales. When collecting concurrent data the populations that should be studied include different levels of occupational status (e.g., professional and managerial, clerical and sales, skilled and semi-skilled or unskilled), unemployed individuals seeking work and unemployed not seeking work, various occupational specialties, age differences, males and females, etc.

Career Development Studies

Because the VS measures both work and general values and includes a greater number of intrinsic and extrinsic values than other values measures, it will be a valuable asset in many kinds of research. It will be particularly relevant in research on the values associated with occupational and cultural differences, socialization, and life-stage processes. Examples of completed, ongoing, and potential research are reviewed below.

Occupational Differences. The values to which one is committed vary greatly from person to person, not only as a function of age and status, but also in relation to many other personal and situational variables. An individual's occupation is one variable to which increasing attention has been given over the last 50 years. Despite the value overlap, occupations vary in the degree to which workers can find opportunity for realization of values (Centers, 1949).

Holland (1985) describes six types of individuals who seek out six kinds of environments that will allow them to "exercise their skills and abilities, express their attitudes and values, and take on agreeable problems and roles" (p. 4). These six types are called Realistic, Investigative, Artistic, Social, Enterprising, and Conventional. Because Realistic individuals tend to work with machines, tools, or animals, their Physical Prowess and Physical Activity values scores should be higher than their Aesthetic and Cultural Identity scores. Investigative people tend to be analytical, curious, methodical, and precise and thus would be expected to value Autonomy over Risk. The values of Aesthetics and Creativity would be important to Artistic individuals whereas Economic Security might not be as important. Because Social individuals enjoy working with and helping others, the values of Social Interaction and Social Relations would be higher than those of Physical Prowess and Autonomy. Enterprising individuals tend to promote

economic gain and organizational goals and thus should value Economic Rewards but consider Aesthetics, Altruism, and Physical Prowess of little importance. Conventional types should value Economic Security over Authority and Risk.

In a nationwide sample of 383 military personnel, Yates (1985) found that Realistic individuals significantly valued Physical Prowess more than did Enterprising types and, less expectedly, that Social types valued Economic Security more than did Realistic.

Cultural Differences. The VS is a particularly appropriate instrument for cross-cultural research as it was developed by a multi-national team and is available in more than seven languages. Two research projects are described below as examples of the kinds of questions that can be asked with the VS cross-national forms.

In a preliminary study, using available cross-national data, Ferreira-Marques (1983) gave the Portuguese version of the VS to 231 12th-grade students from Lisbon secondary schools, which are rather selective for economic reasons. He compared these students with data on 196 11th and 12th graders in New Jersey, a more nearly adequate sample of this age group. He found that the values of Advancement, Authority, Economics, Prestige, and Physical Activity were significantly more important to this sample of American high school students than to the Portuguese. In contrast, he found that the values of Ability Utilization, Achievement, Creativity, Life Style, Personal Development, and Social Relations were significantly more important to the Portuguese high school students sampled than to the American. Ferreira-Marques concluded that the US students (in more comprehensive schools) favored more material and active values while the Portuguese students (in more selective schools) favored the more personal and social-oriented values.

Studies can also be made of cultural differences within a country. A distinctive feature of Canada is that it is a nation of people with essentially two dominant cultures, identified linguistically as Anglophones and Francophones. Casserly (1983) gave the appropriate forms of the *Values Scale* to approximately 3,000 Canadians from high school age through mature adulthood. Two-thirds of the sample used the English form and one-third used the French form. Casserly compared the two groups' average ranking of each value. Anglophones ranked Altruism, Associates, and Social Interaction lower, and Prestige, Autonomy, and Authority higher. The Francophones rated Advancement and Responsibility lower and Social Interaction, Altruism, Life Style, Aesthetics, and Cultural Identity higher. The picture that emerged is congruent with the social conditions in Canada: Anglophones, specifically British-Canadians, dominate the higher levels of business and government and it is not surprising that they value the organizational values of Prestige, Autonomy, and Authority. Although social mobility is possible in Canada, movement is primarily into the middle class. It is not surprising that the Francophones

stress more family-oriented and social values. Casserly noted that differences are "not due to some special genetic coding, or even to some unique process of socialization, but due to what is required of a group to live successfully with the cultural majority" (p. 20).

Socialization. Each culture thus defines what is appropriate behavior for its members. Individual behavior rests upon a value system. Variables such as sex, age, and socioeconomic status are major determinants of the values that one holds.

The values of males and females are different in important measurable ways in this society. Allport and Vernon (1931) categorized values into six classes: theoretical, economic, aesthetic, social, political, and religious. Studies (e.g., Walberg, 1969) using this scale have consistently found large sex differences in all the values. Women are much higher in aesthetic, social, and religious values, while men show more strength in theoretical, economic, and political areas. Thus this same pattern of values should be evident in VS research to demonstrate construct validity.

In his nationwide study of military personnel Yates (1985) found that American adult females placed significantly greater importance on the values of Aesthetics, Personal Development, Working Conditions, and Altruism than did males. Males valued Risk and Physical Prowess more than did females. However, the two sexes had almost identical rankings for the seven most important values: Economic Security, Achievement, Ability Utilization, Personal Development, Advancement, Economic Rewards, and Life Style, perhaps because of social change as well as the greater scope of the newer inventory.

In the comparison of Portuguese and US high school students Ferreira-Marques (1983) found that Portuguese girls valued Altruism and Personal Development more than boys, while boys valued Authority and Physical Activity more than girls. Among the American students, girls placed significantly greater importance on the values of Achievement and Aesthetics than did boys, while the value of Risk was more important to boys.

Shears (1982) gave the Australian VS to a representative sample of 1,400 10th-grade students in Melbourne, Australia. She found that value endorsement followed established, stereotypic, expectations: Boys valued Risk, Physical Activity, and Authority more than did girls, while girls valued Altruism, Aesthetics, and Social Relations more than did boys.

Other socialization studies focusing on the effects of different educational experiences or of urban-rural environment would be appropriate for the *Values Scale*.

Life Stage. Increasingly more attention is being paid to developmental changes over the life span (Baltes & Brim, 1983; Baltes & Schaie, 1973; Levinson, 1978; Lowenthal, Thurnher, & Chiriboga, 1975; Vondracek, Lerner, & Schulenberg, 1986). It is reasonable to assume that values also vary with life stage as individuals face changing

developmental tasks. The values inherent in an Establishment stage would be different from those in a Growth stage. The former might stress Economic Security, while the latter might value Economic Rewards.

Yates's (1985) study is particularly relevant. Yates divided his sample into life stages based on age. Subjects who were 17 to 25 years old were more concerned with the initial challenges of job performance (Achievement, Ability Utilization, and Advancement) than with the external aspects and rewards of work (Economic Security and Rewards, Working Conditions, and Autonomy). This age group also valued Physical Activity and Prowess, which would presumably be characteristic of young adults not yet committed to family responsibilities and with more time and stimulation for active leisure activities. The values of the adults who were 25 to 35 years old were appropriate to individuals entering the Establishment period who are trying to match personal traits and needs with job requirements. They valued Economic Security, Advancement, Achievement, Ability Utilization, Economic Rewards, and Personal Development; a pattern which suggests that this age group was indeed concerned with self-realization in their work, but also with material welfare. The subjects who were 36 to 45 years old valued primarily Economic Security and Rewards. They did not appear to particularly value personal growth through their work. In this group, during the middle of the Establishment period, the adults begin to question their value systems and the central material importance of work. The oldest group of workers, aged 46 to 62, valued Autonomy, Personal Development, Creativity, Aesthetics, Altruism, Authority, Prestige, Social Relations, and Cultural Identity. In this stage the importance of meeting personal goals and values becomes paramount.

Correlations with Other Scales

Shears (1982) administered the Australian VS and the *Work Aspect Preference Scale* (WAPS) (Pryor, 1981) to about 400 high school students in Melbourne, Australia. The WAPS measures 13 work values, one of which, Detachment, is not on the VS, and several VS scales (e.g., Risk Taking and Variety) have no equivalent on the WAPS. Scales were correlated with each other with the expected results. For example, the VS Economic Rewards scale was most positively correlated with the WAPS scales of Money, Autonomy with Independence, Associates with Co-workers, Authority with Management, and Environment with Surroundings. Shears concluded that the correlations between the WAPS and the VS provided support for the construct validity of the VS, especially because the WAPS had only work values and the VS contained both work and general values.

Further evidence for the construct validity of the VS was also shown by Shears (1982) who gave 700 high school students in Melbourne, Australia, the VS and Taylor's (1975) *Work Quiz* (WQ) which is rather different in item content. The WQ has three scales: Traditionally

Comfortable, Passively Unconcerned, and Responsibly Committed. The significant correlations between the two instruments were consistent with their definitions: for example, the Passively Unconcerned scale of the WQ was *negatively* correlated with the VS values of Creativity, Achievement, and Ability Utilization. The Responsibly Committed scale of the WQ was *positively* correlated with Aesthetics, Altruism, and Ability Utilization and *negatively* correlated with Economic Rewards and Prestige. Shears concluded that a clear and theoretically correct picture of interrelationships between the WQ and VS was demonstrated.

Counseling

In counseling, values information is expected to be especially helpful with clients who have flat interest profiles, whose interests pull them in differing directions, or who are immature enough so that one must doubt the validity of their expressed and even of their measured interests. This is because, values being more fundamental than interests, ascertaining what it is that a student or client wants to get out of life is often helpful in pursuing the question of the field or activity in which to seek those values (Super, 1973).

In surveys, values inventories have long been used in order to throw light on the motivations and objectives of succeeding generations of students, blue-collar workers, and white-collar workers including clerical, professional, and managerial occupations. Most opinion surveys rely on single questions to obtain such data, but single questions often correlate only about .25 with each other even when designed to assess the same value; for this reason, a purified five-item scale such as those on the VS is a more reliable measure and a more valid assessment of values.

Ipsative Interpretation

At present the VS is ready for career counseling use only with ipsative interpretation, a common and valuable use but not to be confused with normative interpretation. In ipsative interpretation the score (raw or standard) that the counselee has made on one scale of a test or inventory is compared with his or her scores on other scales of the same instrument. If the weighting of items and the item numbers in each scale are the same (such as is true for the VS), raw scores may be compared; standard scores or percentiles can be used if norms are available. In normative interpretation the score the counselee makes on one scale is compared with the scores made by other comparable people on the same scale.

Ipsative interpretation thus makes it possible to identify an individual's strong and weak areas if the test is one of aptitude or achievement — strong and weak, that is,

when the person is compared with him- or herself, regardless of how others score. If the instrument is one in which there are no right or wrong answers, but only answers that describe a person (such as the VS), the comparisons, often in the form of the profile of the scores, permit the analysis of the internally relative strength of the traits measured. The VS thus makes it possible to ascertain the relative strength of the 21 values for the individual. An illustrative case follows.

A Sample Case: Sam, 25-Year-Old Male

For the past three years Sam has been teaching mathematics and coaching football and tennis while also serving as an assistant housemaster in a prep school. He is thinking seriously of resigning to embark upon a combined Law and Business Administration program next year. This graduate program at a university near his home takes four years to complete and gives degrees in both fields.

His isolation in the boarding school, the great distance from his family home, and his desire for more challenge and a higher standard of living have made him feel that he should give up teaching. He states that his goal is to become an investment analyst. He views "managerial or professional" work as a means of self-expression.

Sam's academic record and background suggest that he should be successful in the law and business program, as he has always been a good student, enrolled in gifted and honors programs, graduated in the top fifth of his high school class, and had *Scholastic Aptitude Test* scores of 670 Verbal and 590 Mathematics. He graduated from college with a major in psychology and a minor in mathematics. During his college years he was a residence counselor, waited on tables, and was largely self-supporting.

Sam's father is a chemistry professor in a small college and his mother is a teacher of home economics in the local high school. An older sister is a graduate of a selective university and a successful fashion writer.

Before making a major career change and starting a four-year graduate program, Sam sought counseling at a nearby state university which operates a well-known and respected counseling center. As is customary in career counseling cases, he was given two standard inventories, the *Strong-Campbell Interest Inventory* (Hansen & Campbell, 1985; Strong, Campbell, & Hansen, 1981) and the *Career Development Inventory* (Super et al., 1979, 1981). He was also given the *Adult Career Concerns Inventory* (Super et al., 1986), the *Saliency Inventory* (Nevill & Super, 1986; Super & Nevill, 1986a), and the *Values Scale* (Super & Nevill, 1986b). The results of all of these instruments are considered here because of the greater richness provided by a multifactor interpretation.

The Strong-Campbell Interest Inventory (Strong). On the Strong, Sam made high scores in Social Service and Teaching, including School Administration. In his proposed fields of Law and Business, however, he showed interests only slightly like those of people employed in

these two fields. This seeming discrepancy between his expressed and his inventoried interests made it especially important to assess Sam's career maturity, values, and life-role involvements.

The Career Development Inventory (CDI).

Although Sam has been out of college for three years and holds a teaching job, he was given the College and University Form of the CDI and compared to college seniors. This was done in order to get a multidimensional picture of his career maturity. Sam scored in the 77th percentile on the Career Exploration Scale which showed that he has been willing and able to use the resources available to him to learn about careers. This interpretation of this score was confirmed by his self-referral to the counseling center. Sam scored on the 47th percentile on the Decision Making Scale when compared to 21-year-olds. This score may show that at age 25 some of his current indecision is due to a relative lack of knowledge of what factors to consider and of how to weight them in making vocational choices. His relatively low percentile on the Career Planning Scale (33rd) combined with his lower score on the World of Work Scale (21st percentile) and very low score on the Knowledge of Preferred Occupational Group Scale (2nd percentile) further support the interpretation that this young man lacks self-understanding in relation to the world of work, an essential aspect of choosing a career.

Sam considers himself a good worker and says he wants a self-expressive career; however, the CDI shows that he does not really know what such a career might be or how to go about choosing a field of work. Further exploration such as he has now voluntarily undertaken seems called for, and his openness to it is encouraging.

The Adult Career Concerns Inventory (ACCI).

Sam's scores on the ACCI were those one might have expected from the intake interview and from the CDI. He is concerned with the tasks of Exploration; these are tasks such as crystallizing and specifying a preference for an occupation. He is not yet concerned with the tasks of Establishment, Maintenance, or Disengagement. His concern for the tasks of exploration and innovation may be a function of his expressed need to break out of teaching to explore and to find better occupational outlets for expressing himself. It is interesting that he shows little concern for implementing an occupational preference (as measured by the CDI); perhaps this is a function of his confidence in the counseling center placement resources and his ability to earn the required academic credentials.

The Saliency Inventory (SI). An ipsative analysis of Sam's scores on the SI reveals what appears to be a fairly even balance of role involvements. He expects to realize his values (VS scales) equally through the roles of Worker (3.9), Student (4.0), Family Member (4.0), and Leisurite (3.9), with somewhat less importance attached to his role as a Citizen (2.7). These scores must be considered in relation to his age, marital, and occupational status, because Sam is a young bachelor living in a boarding school in which his life is relatively circumscribed. It may

be presumed that he does not value a larger community role because he has not yet really experienced one, but it is clear that he values the family role from which boarding school life separates him. The roles of student, worker, and leisurite are, however, both known and currently accessible to him, and he expects to attain his values in them. His participation in and commitment to each of the five roles are similar to his value expectations: herein lies his balance, a balance that might be changed or upset were situational demands to change with marriage or with increasing job demands.

The Values Scale (VS) (the major focus in this presentation). Ability Utilization ranked highest in Sam's value hierarchy. He made his highest score, 4.0, on this value. (Here the scoring of the VS is ipsative, the focus on the relative strength of a given value in the individual's own value system. Normative information, when available, is also valuable for interpretation in relation to the normative group.) Personal Development was Sam's next highest value, with a rating of 3.8. Also high were Achievement, Economic Security, Economic Rewards, and Social Relations, all rated 3.6. Closely following were Physical Activity, Advancement, Creativity, Social Interaction, Life Style, and Working Conditions, all rated 3.4. This combination of intrinsic (seven) and extrinsic (five) values suggests a person motivated to make the most of his potential, to have a comfortable life style, and to associate with congenial people. Self-expression and a good life are his goals. It is perhaps this combination and his lack of occupational information that lie at the root of his current career indecision. Altruism and Authority are also important to Sam, although less so than his other notable values. One is inclined to wonder, with no normative data to guide the speculation, whether the relative unimportance of Risk Taking might contraindicate a career in investments, a career which Sam is thinking of entering.

The distinctive contribution of a values measure in career counseling is the light it throws on *what* a person wants from life, and thus from the work and other roles, as distinct from *how* he or she thinks it might be found, the activities that might lead to value attainment. What does the VS tell us about Sam's prospects of happiness in finance as opposed to education? Would he, in changing to business, be more likely to achieve self-realization? The Strong has already indicated that his interests are more like those of people in teaching and school administration than they are like those of people in business and law. The *Values Scale* has indicated that he values self-expression (Ability Utilization, Personal Development, Social Relations, and Creativity) and good material living conditions (Economic Rewards and Security, Advancement, and Working Conditions). In view of this mixture of intrinsic and extrinsic values, his Life Style score should probably be interpreted as indicative of wanting both a self-fulfilling and a comfortable life.

The Strong and the VS thus join in contraindicating Sam's present occupational preference of combining business and law for investment analysis, and strengthen the suggestion that he might better look for ways of finding a more satisfying life style and more satisfying work outlets in education. Administration is the logical career objective to explore with him in further interviews. He should explore an administrative occupation by talking with educators in the better educational systems in his region and in a graduate school of education; one that knows the job opportunities in his area, its needs and rewards.

Summary. At the age of 25 Sam's proposed plan to enter a graduate program in law and business appears to be based on the desire to find an occupation that offers a richer life and more economic rewards, as well as opportunity for self-expression and personal development. His plan does not appear to be based on matching his abilities and interests with those of people in the business and legal fields. It appears that Sam's values motivate him, values unguided by knowledge of occupations and careers, unguided by knowledge of how to make decisions, and not used in careful and extensive career planning.

If Sam were to go ahead with the proposed training program he is very likely to be successful in it, and he may find it possible to attain his values and find self-expression in a combination of work, family, and leisure roles. It seems unlikely that the work of an investment analyst will in itself prove more self-fulfilling for him than does teaching. A more promising plan should be explored: he could change to public school teaching and pursue work in educational administration. Thus he would seek both self-expression and a more economically satisfying life in a public school system. In educational administration he could, if the measured interest becomes manifest in study and incidental tasks, and if his present values persist, combine the pursuit of personnel administration and helping people with business finance and the development of his own personality more than he could in investment analysis.

Normative Interpretation

In its development the VS has been administered to some 3,000 youths and adults in the United States. Until 1985 the subjects have been samples of convenience rather than representative samples. They have been suitable for instrument refinement, but not for the development of national norms. To be fully useful, the VS must be provided with grade, age, curricular, sex, and selected occupational groups norms. The authors are open to receiving normative data to add to those now being systematically collected. Normative information can be sent to the authors care of the publisher.

National Samples. Means and standard deviations of the available American data are provided in Tables 8, 9,

and 10 in Appendix A. These tables should be interpreted with caution since they consist of the following restricted list:

<i>High School</i>	Total <i>N</i>
Ocean County, New Jersey	199
<i>College and University</i>	
University of Florida, Gainesville	548
<i>Adult</i>	
Managerial employees of AT&T, IBM, and Eastern Airlines	66
Continuing education classes at Santa Fe Community College, Gainesville, Florida	330

The data that are being collected from high school, college, and adult samples will be used to develop national norms. High school samples are designed to represent urban, suburban, and rural populations, various socio-economic levels, and both sexes. Colleges and university samples are designed to represent arts, letters, science, and technical students as well as the major regions of the country. Adult samples are being chosen to represent all the Holland-type occupations (Realistic, Investigative, Artistic, Social, Enterprising, and Conventional), and the literate socio-economic levels. Sampling is designed to obtain a diversity of regions, ages, and both sexes.

Cross-National Samples. Because the Work Importance Study is international, one of its strengths is that inventories are available in seven different languages. Each national team is responsible for the development of its version of the VS and is involved in gathering normative data based on the guidelines mentioned above. Each national team owns its own national version; three countries (Canada, Yugoslavia, and Portugal) are sufficiently far along in data collecting to share their results. The means and standard deviations of these populations are reproduced in Appendix C.

Canadian Norms. As described by Fitzsimmons, Macnab, and Casserly (1984) in their report on the Canadian Work Importance Study, two parallel forms of the VS were developed; one in French and one in English. The high school sample was collected from a number of school districts across Canada. The college sample was collected from a diverse national selection of universities, technical colleges, vocational colleges, and community colleges. The adult sample was collected from a large publishing company, a large national department store, a hospital in a large city, a petrochemical company, a large computer manufacturing company, and a number of departments of the federal government including Energy, Mines and Resources, Employment and Immigration, the National Research Council, and the Canadian Broadcasting Corporation. Tables 14 through 20 in Appendix C give the

Canadian high school, college, and adult data. For the high school sample, 10th- and 12th-grade norms are available for both Anglophones and Francophones (Tables 14, 15, 16, and 17 respectively). Only Anglophone sampling is available for the college data (Table 18). Both Anglophone and Francophone data have been collected for the adults (Tables 19 and 20).

Yugoslavian Norms. Data from Yugoslavia have been collected by Sverko, Jerneic, Kulenovic, and Vizek-Vidovic (1984). The high school sample consists of 2 percent of the population of all 10th and 12th graders in Croatia. Classes of students in all of the districts were sampled proportionally to the total number of students in each district. The university sample consists of students who were enrolled in all the universities of Croatia, from different departments (mechanical, electrical, and civil engineering; economics; architecture; medicine; social work; education; and psychology). Students were tested in courses appropriate for sampling their major. The adult sample was collected by psychology students who were instructed to find subjects of both sexes, various ages, and various educational levels. The adult sample was thus one of convenience and may not be representative for the adult workers as a whole. Means and standard deviations for the high school, college, and adult samples are shown in Tables 21 through 24 in Appendix C.

Portuguese Norms. High school data is available from Portugal, where secondary schools are still selective de facto (Ferreira-Marques, Miranda, Pinto, & Afonso, 1984). The sample was collected from high schools throughout the capital city of Lisbon. Means and standard deviations for both the tenth and twelfth grade are shown in Tables 25 and 26 in Appendix C.

Development, Reliability, and Validity

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Development

The Work Importance Study (WIS) is an informal consortium of autonomous research teams in a dozen countries in Europe, North America, and Australia, with corresponding members in Asia and Africa. The WIS was launched by Donald Super while a senior research fellow at the National Institute for Careers Education and Counseling and a fellow of Wolfson College, Cambridge, England, in 1976-79. The WIS brought together a group of psychologists interested in the values and satisfactions people seek in work and in other life-career roles, and in the relative importance of work and life-career roles.

The original member countries were: the United States, the United Kingdom, France, the Netherlands, the Federal Republic of Germany, Switzerland, Poland, Yugoslavia, Spain, Portugal, and Canada. Funding problems and personnel changes caused some of these countries to drop out after the first two years. Australia and Greece soon joined the WIS; and Czechoslovakia and Zimbabwe became unofficial corresponding members. Since then, Israel and Italy have become members, and India and South Africa have become corresponding members. Active participants now include Australia, Canada, the United States, Portugal, France, Italy, Yugoslavia, and Israel, with correspondents in Czechoslovakia and India.

The national teams consist, in some instances, of members of the psychology faculties of major universities such as Florida, Lisbon, and Zagreb, and in other instances of researchers in national departments of labor such as Canada Employment and Immigration. Each national team finds its own funding, although until late 1979 the European Research Office of the US Army Research Institute funded the semi-annual working conferences of national project directors and the coordinating work of Dr. Super.

The objective of the WIS was to assess the relative importance of the work role in the context of other life roles and the values that individuals seek through their work and other roles. The first step was for each national team to review its national literature. These reviews were synthesized and shared by the Anglo-American team in Cambridge, England.

The literature review turned up a number of values measures including Dr. Super's. Even though the *Work Values Inventory* (WVI) (Super, 1970) identified more values than most values measures (including extrinsic values measured in job satisfaction studies) it had two limitations: (1) some significant values were not covered by the WVI or any other measure; and (2) some of the WVI scales were less reliable than they might have been had they been based on five instead of three items per scale.

It was therefore decided that the WIS would develop an instrument to measure work and general values. The team worked collaboratively trying to develop an instrument which had utility for both cross-national and national research and service projects. Each country was to own its instrument, acknowledging the collaboration. New participants were to be accepted provided they would work in the same manner.

Procedures

The WIS began, in effect, at the International Congress of Applied Psychology in Munich in July 1978. It met in Europe twice yearly until 1982 for working conferences of from three to five days each, rotating between Cambridge, Lisbon, and Dubrovnik. Since then it has met once yearly, in Edinburgh, Montreal, Florence, Jerusalem, Lisbon, and Dubrovnik. Meetings are convened by the coordinator by common consent.

Each team studied the national reviews of the literature and the synthesis done by the Anglo-American team,

together with the lists of values that had been previously identified. Working groups of three or four participants, representing countries with somewhat differing traditions, economic systems, and conditions, wrote definitions of each assigned value. These definitions were distributed to each participant and were discussed in plenary sessions. Revisions were then made, reviewed, and again revised.

Once the definitions were agreed upon, sample items were written in the same manner as the definitions. At the first working meeting only a few items were written for each value, reviewed, and revised as prototypes. Then the items were assigned to at least two diverse national teams for further writing and refinement between meetings. These draft items and definitions were circulated in English in advance of or at the next meeting of the project directors. The draft items were reviewed and sometimes revised in plenary session.

An important aspect of the project was having the different cultural perspectives of Catholic and Protestant countries, of capitalist, socialist, and communist economic systems, and of developed and developing economies. The varying perspectives were helpful in the writing of meaningful but at the same time cross-culturally acceptable definitions and items for values such as Altruism, Economic Rewards, Life Style, and Spirituality (religion). (Spirituality was merged with Altruism after it was evaluated by the item factor analyses.)

Each national team, working with the English versions at meetings, put items into its own language by having colleagues with a good knowledge of English review the translations. The items were then pilot tested on small samples. Members of other teams who knew the languages also carefully reviewed the translations.

Refinement

The 1980 version of the VS contained 10 items for each of the 23 original scales. In the United States these literature- and workshop-derived scales were administered to convenient samples of high school males and females in 10th and 11th grades ($N = 686$), and university students in their first three years ($N = 1,042$).

Item-scale correlations and item-factor analyses were calculated for all samples. Each national team identified the scales it considered worth retaining on grounds of internal consistency and scale independence using customary standards, and tentatively selected the 5 best items (of the 10) for each scale, including the best possible mix of general and work-specific items in each scale.

At their fifth meeting, in Lisbon in October 1981, the teams pooled their results, dropping the scales for Intellectual Stimulation, Participation in Organizational Decision Making, Responsibility, Spirituality, and Supervisory Relations because their items correlated with those of other scales to become, respectively, the scales for Ability Utilization, Autonomy, Authority, Altruism, Personal

Development, and Social Relations. In most countries the two Economic Values scales (Economic Rewards and Economic Security) were highly correlated; but in the United States their correlation was only .66, low enough to permit some respondents to be high on one but not on the other, and lower than their alpha coefficients, which ranged from .80 to .91. Table 3 shows the scales and all intercorrelations of .65 or more for the two large samples. Table 4 shows their internal consistencies. It should be noted, in Table 4, that the reliabilities (alpha coefficients) for the 10-item scales ranged from .72 to .90 in high school, and from .78 to .91 in college, with medians of .82 and .87 respectively.

In writing specifications for the VS a major issue was the feasibility of measuring life values and work values with the same instrument and the same items. One argument was that in order to assess values sought in work the inventory would have to specify this objective; otherwise values that are sought primarily in other activities might dominate and confuse what values are being assessed. To assess this issue the trial forms in each country had five general values items for each scale at the beginning of the test booklet, followed by the five items written with specific work content in the second half of the booklet. Table 5 shows that the interscale-item correlations were high for the combined item scales. Table 6 shows that the structures of the general and work-specific scales were very similar.

In order to maximize the facility of test administration the current version of the VS was reduced to scales of five items each, of which two are general values, two are work-specific values, and the final item is either as empirically selected. Each country agreed to use the three best cross-national items as identified in data presented at the 1981 Lisbon meeting. Each country could add the two items that, in their national analyses, had the highest correlations with the three cross-national items. The final list of the scales, which constitutes the current VS, appears in Chapter III, Table 2.

Reliability

Two measures of reliability were computed for the VS: (1) internal consistency (alpha coefficients) for high school, college, and adult samples and (2) stability (test-retest) for the college sample. At the high school level values are still forming and more variability in responding is expected; however, by college the value structure should be stabilized; thus test-retest reliabilities were only sampled from college populations. No adult sample was used for a test-retest study because of the difficulty of obtaining adult data.

The alpha coefficients for the final version of the five-item VS scales were generally above .70 for all three

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Table 3
Interscale correlations, 1980 version: High school and college

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1 Ability Utilization	87	74	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2 Achievement		79	-	-	-	-	-	-	-	66	-	74	-	67	-	68	-	-	-	-	-	-
3 Advancement			-	-	-	-	-	-	-	68	-	76	-	72	66	72	-	-	-	-	-	-
4 Aesthetics			-	-	-	-	-	-	-	75	-	66	-	69	68	66	-	-	-	-	-	-
5 Altruism			-	67	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6 Associates			-	-	66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7 Authority			-	-	-	-	-	-	-	-	-	-	-	-	-	-	73	-	-	-	-	-
8 Autonomy			-	-	-	-	-	-	-	-	-	-	-	-	-	-	76	-	-	-	-	-
9 Creativity			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10 Economic Rewards			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11 Economic Security			-	-	-	-	-	-	-	-	-	80	65	-	73	-	-	-	-	-	-	-
12 Environment			-	-	-	-	-	-	-	66	67	-	-	-	-	-	-	-	-	-	-	65
13 Intellectual Stimulation			-	-	-	-	-	-	-	-	65	-	-	-	-	-	-	-	-	-	-	-
14 Life Style			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 Participation in Organizational Decision Making			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16 Prestige			-	-	-	-	-	-	-	-	-	-	74	-	71	-	-	-	-	-	-	-
17 Responsibility			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65	65	-	-	-
18 Risk Taking			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19 Spirituality			-	-	-	-	-	-	-	-	-	-	-	-	74	-	-	-	-	-	-	-
20 Supervisory Relations			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21 Variety			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22 Cultural Identity			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23 Physical Activity			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

N = 1,728

Notes: Correlations of less than .65 are omitted.
All correlations are positive.

Occupational Group

The answer sheet asks you, "What kind of work do or did you do?" Select your occupational group from the table below. The table contains occupational group titles and examples of occupations in each group. Select the group that matches the work you do or have done. Each group is identified by a letter; mark the letter on the answer sheet of the group you have selected.

<p style="text-align: center;">Physical Science: Research</p> <p>Chemist Geologist Mathematician Physicist Statistician</p> <p style="text-align: center; font-size: 2em; opacity: 0.5;">A</p>	<p style="text-align: center;">Physical Science: Applied</p> <p>Architect Engineer (all types) Geographer Industrial Engineer Systems Analyst</p> <p style="text-align: center; font-size: 2em; opacity: 0.5;">B</p>	<p style="text-align: center;">Biological and Medical Science</p> <p>Dentist Medical Doctor Pharmacist Scientific Farmer Veterinarian</p> <p style="text-align: center; font-size: 2em; opacity: 0.5;">C</p>	<p style="text-align: center;">Social Science: Research</p> <p>Anthropologist Economist Market Research Analyst Social Psychologist Sociologist</p> <p style="text-align: center; font-size: 2em; opacity: 0.5;">D</p>	<p style="text-align: center;">Social Science: Teaching/Social Service</p> <p>Guidance Counselor Marriage Counselor School Psychologist School Teacher Social Worker</p> <p style="text-align: center; font-size: 2em; opacity: 0.5;">E</p>
<p style="text-align: center;">Writing and Law</p> <p>Editor Lawyer Librarian Reporter Script Writer</p> <p style="text-align: center; font-size: 2em; opacity: 0.5;">F</p>	<p style="text-align: center;">Art and Music</p> <p>Art Director Commercial Artist Dress Designer Interior Decorator Musician</p> <p style="text-align: center; font-size: 2em; opacity: 0.5;">G</p>	<p style="text-align: center;">Public Performance</p> <p>Actor/Actress Announcer (Radio/TV) Dancer Musical Entertainer Professional Athlete</p> <p style="text-align: center; font-size: 2em; opacity: 0.5;">H</p>	<p style="text-align: center;">Business: Financial</p> <p>Auditor Bursar/Controller Computer Analyst Cost Accountant Credit Analyst</p> <p style="text-align: center; font-size: 2em; opacity: 0.5;">I</p>	<p style="text-align: center;">Business: Management</p> <p>Supt.-Bldgs./Grounds Bank Manager Hotel Manager Personnel Manager Store Owner/Manager</p> <p style="text-align: center; font-size: 2em; opacity: 0.5;">J</p>
<p style="text-align: center;">Business: Sales/Promotion</p> <p>Advertising Manager Broker/Acct. Executive Buyer Public Rel. Manager Sales Manager</p> <p style="text-align: center; font-size: 2em; opacity: 0.5;">K</p>	<p style="text-align: center;">Business: Office/Clerical</p> <p>Bank Teller Bookkeeper Clerk/Typist Postal Clerk Stenographer</p> <p style="text-align: center; font-size: 2em; opacity: 0.5;">L</p>	<p style="text-align: center;">Business: Merchandising</p> <p>Car Rental Clerk Dept. Store Salesperson Life Insurance Agent Real Estate Agent Retail Salesperson</p> <p style="text-align: center; font-size: 2em; opacity: 0.5;">M</p>	<p style="text-align: center;">Technical: Physical Science</p> <p>Air Traffic Controller Electronic Technician Photoengraver Surveyor Weather Analyst</p> <p style="text-align: center; font-size: 2em; opacity: 0.5;">N</p>	<p style="text-align: center;">Technical: Health Service</p> <p>Dental Hygienist Dietician Nurse (Registered) Occupational Therapist Optician</p> <p style="text-align: center; font-size: 2em; opacity: 0.5;">O</p>
<p style="text-align: center;">Technical: Crafts</p> <p>Auto Mechanic Dress Maker Electrician Jeweler Printer</p> <p style="text-align: center; font-size: 2em; opacity: 0.5;">P</p>	<p style="text-align: center;">Technical: Outdoor</p> <p>Dairy Farmer Fish/Game Warden Flower Grower Grain Farmer Landscape Gardener</p> <p style="text-align: center; font-size: 2em; opacity: 0.5;">Q</p>	<p style="text-align: center;">Technical: Mechanical</p> <p>Appliance Repair Bulldozer Operator Bus Driver Dry Cleaner Sewing Machine Operator</p> <p style="text-align: center; font-size: 2em; opacity: 0.5;">R</p>	<p style="text-align: center;">Personal Service</p> <p>Beautician Hospital Attendant Host/Hostess Receptionist Waiter/Waitress</p> <p style="text-align: center; font-size: 2em; opacity: 0.5;">S</p>	<p style="text-align: center;">Manual/Physical</p> <p>Gas Station Attendant Parking Lot Attendant Porter Radio Assembler Stevedore</p> <p style="text-align: center; font-size: 2em; opacity: 0.5;">T</p>

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Table 4

Alpha coefficients, 1980 version: High school and college

	High School (N = 686)	College (N = 1,042)
Ability Utilization	.82	.88
Achievement	.83	.87
Advancement	.83	.87
Aesthetics	.90	.91
Altruism	.88	.89
Associates	.85	.88
Authority	.84	.87
Autonomy	.80	.86
Creativity	.87	.88
Economic Rewards	.80	.83
Economic Security	.88	.91
Environment	.76	.78
Intellectual Stimulation	.83	.88
Life Style	.79	.82
Participation in Organizational Decision Making	.81	.82
Prestige	.84	.88
Responsibility	.72	.81
Risk Taking	.87	.89
Spirituality	.82	.83
Supervisory Relations	.82	.84
Variety	.80	.84
Cultural Identity	.77	.80
Physical Activity	.80	.79

Table 5

Correlations between work and general items, 1980 version:
High school and college

.70 and Above	.60 to .70	Below .60
Ability Utilization	Achievement	Autonomy
Aesthetics	Advancement	Economic Rewards
Altruism	Associates	Environment
Creativity	Authority	Life Style
Economic Security	Supervisory Relations	Responsibility
Intellectual Stimulation	Spirituality	Variety
Prestige	Cultural Identity	Physical Activity*
Risk	Participation in Organizational Decision Making	

N = 1,728

* Below .30

Table 6

Factor structure of work items and general items, 1980 version: High school and college

Factors			
Material	Activity and Risk	Group-Oriented	Inner-Oriented
Advancement*	Physical Activity*	Aesthetics	Ability Utilization*
Economic Rewards**	Risk Taking**	Altruism	Achievement*
Economic Security*	Authority	Associates	Autonomy*
Environment*	<i>Creativity</i>	Spirituality	<i>Creativity</i>
<i>Life Style</i>		Cultural Identity	<i>Life Style</i>
Prestige*		<i>Supervisory Relations</i>	Responsibility*
<i>Supervisory Relations</i>			Intellectual Stimulation**
			Participation in Organizational Decision Making*

N = 1,728

Notes: * denotes factor loadings of .60 to .79.

** denotes factor loadings of .80 to .90.

All other factor loadings are between .50 and .59.

Italic denotes scale appearing in more than one factor.

On principal axis, equamax rotation, 17% of the variance was accounted for.

populations; only in relatively few instances did the coefficients fall below that level. Test-retest correlations of less than .70 were found for several of the 5-item scales, a surprising finding given the reliability data on the 10-item scales. Consequently, a second test-retest study was undertaken using a larger college sample. Table 7 shows the reliability data for all samples. Ability Utilization, Life Style, and Personal Development failed to reach reliabilities of .70 on both internal consistency and stability measures, and are therefore less coherent scales than the others and should be interpreted with more caution. Factor scales are now being developed with consideration for internal consistency and stability.

Validity

Content Validity

There are three methods for assessing the content validity of a values inventory: (1) examining the content of the items for face validity; (2) reviewing the methods used to develop the items; and (3) the item-scale correlations.

The face validity of the VS was assured by the writing of items according to the agreed upon definitions of the values. As stated earlier, teams of at least three specialists from differing countries wrote the items, and all project directors reviewed the items for face validity.

The methods used in deriving the items were: (a) reviewing the values literature of each participating country; (b) studying the lists of values thus developed; (c) equating categories with similar meanings and eliminating item meaning duplication; (d) writing definitions in small cross-national working groups; and (e) reviewing the definitions in the general meetings of project directors. Sample items were developed in the same way. The sample items served as models for the national teams of psychologists who wrote additional items. At least two countries of differing cultures worked on the same values to assure generalizability. The items were then reviewed in plenary cross-national meetings.

The item selection process is described in the section on development of the scales. The process included item-scale correlations (Table 3) and factor-analytic procedures (Table 6), designed to assure internal consistency and appropriate scale independence. However, it was recognized that some scales would have significant intercorrelations (e.g., Economic Rewards and Prestige) and that other scales would be negligibly intercorrelated (e.g., Risk Taking and Cultural Identity).

Construct Validity

Some of the 21 VS scales appear to inherently tap more traditionally masculine values, whereas others tap more traditionally feminine values. For example, following the stereotype in our culture, females may be expected to value aesthetics and altruism more highly than males. Males, on

Table 7

Internal consistency (alpha coefficients) and stability (test-retest correlations)

	Alpha Coefficients			Test-Retest	
	High School (<i>N</i> = 199)	College (<i>N</i> = 433)	Adult (<i>N</i> = 323)	College (<i>N</i> = 83)	College (<i>N</i> = 140)
Ability Utilization	.67	.65	.72	.52	.66
Achievement	.82	.73	.77	.53	.70
Advancement	.76	.82	.84	.77	.73
Aesthetics	.78	.84	.83	.76	.68
Altruism	.79	.87	.84	.71	.76
Authority	.77	.84	.80	.70	.75
Autonomy	.73	.79	.74	.71	.60
Creativity	.82	.85	.84	.74	.67
Economic Rewards	.79	.85	.85	.73	.80
Life Style	.70	.74	.68	.61	.68
Personal Development	.73	.65	.76	.65	.60
Physical Activity	.70	.79	.78	.82	.80
Prestige	.83	.86	.86	.78	.73
Risk	.81	.87	.85	.77	.65
Social Interaction	.70	.74	.75	.76	.78
Social Relations	.75	.78	.73	.75	.74
Variety	.73	.72	.75	.76	.63
Working Conditions	.68	.75	.72	.74	.70
Cultural Identity	.69	.77	.67	.70	.72
Physical Prowess	.78	.72	.71	.66	.59
Economic Security	.78	.81	.87	.65	.82

the other hand, may be expected to endorse such values as risk taking and physical prowess more than females. Furthermore, because the sexes become more similar in endorsing attitudes as educational level increases (Hawley & Even, 1982), one would predict that greater differences would be found between values during the high school years than in college or adulthood.

Normative Mean Differences. Tables 8, 9, and 10 in Appendix A show the means and standard deviations for all three samples. No significant differences between means for males and females were found at any of the three educational levels. However, the trends were in the expected direction of less difference with greater age and education. For comparison purposes only *t*-tests greater than .67 ($p < .25$) for each population were examined. In high school females tended to value Altruism ($t = .68$) more than males, while males tended to value Risk ($t = .71$) and Physical Prowess ($t = .71$) more than females. At the college level two of these minimal differences dropped out, with only Physical Prowess ($t = .64$) being endorsed more by males. By the adult years even these very modest differences between the values of each sex had disappeared. Note that

since this data is cross-sectional rather than longitudinal the effects or lack of effects may be obscured by cohort differences. The issue of value structure as a function of age and education can be resolved only by longitudinal investigation.

If one looks at the number of scales by educational level where mean differences between the sexes exceed 1.0, the same pattern of increasing similarity between the sexes appears. Mean differences greater than 1.0 were found on 8 of the 21 scales given to high school students, on 3 of the college scales, and on only 2 of the adult. Though not conclusive, the fact that males and females tend to endorse sex-stereotypic values more in high school and less as educational level and age increase is one of the many types of evidence useful in examining the construct validity of the VS.

A similar case can be made for age and educational differences, regardless of sex. The endorsement of certain values such as Risk and Physical Prowess should diminish with greater age, while the endorsement of others, such as Altruism, should increase. No significant differences between the means were found in this age-range restricted sample, but the trends were in the expected directions.

Scales with mean differences greater than 1.0 were examined. The high school sample scored higher on Physical Prowess (mean difference = 2.66, $t = .84$, $p < .25$), Physical Activity (mean difference = 1.34, $t = .42$, $p < .25$), and Risk (mean difference = 1.22, $t = .32$, $p < .25$) compared to the college sample. The college sample did not differ from the adult sample. The other two scales in which mean difference scores were greater than 1.0 were Aesthetics and Altruism. On both these scales the college sample scored lower than the high school and the adult groups. Perhaps the college-age years are those in which one is more self-centered than either earlier or later in life.

Factor Structure. Close inspection of the factor structure gives support for the construct validity of the VS (see Tables 11, 12, and 13 in Appendix B). Eight of the value scales factor into essentially the same six factors for all three samples. Four of these six factors are scales named in the VS: Prestige, Risk, Cultural Identity, and Creativity. One of the factors is a combination of Altruism and Aesthetics. The sixth factor is a combination of Social Interaction and Social Relations. Thus, regardless of age or educational level, Prestige, Risk, Cultural Identity, Creativity, Altruism-Aesthetics, and the Social values are seen as separate factors. Though not a scale on the VS, another factor is also consistent across all three groups. This factor was labeled Work Autonomy because it included statements drawn from several scales and related to making decisions about one's own work life and working conditions.

Several factors changed across the three groups in a manner that seems consistent with age changes. For example, the factors related to economics: high school students think primarily in terms of advancement and are not yet worried specifically about the economics of the marketplace. However, college students have learned that economic rewards and advancement go together, but see economic security as a separate entity. Perhaps because of their increased responsibilities for and involvement with others, adults have linked economic rewards and security into a common structure. Thus we see a logical progression in value structure related to economics with age.

Other examples of appropriately changing factor structures are those relating to Life Style and Personal Development. These two scales are closely linked in high school and college with the heaviest factor loading on both being the item concerning living according to one's own ideas. However, it may be inferred that by the time one has become an adult the emphasis has changed from what may be naive idealism in such a way that Life Style and Personal Development are more linked with Ability Utilization.

An interesting pattern that also supports the construct validity of the VS emerges in the physical domain. For high school students Physical Activity and Physical Prowess are seen as two independent factors, but the latter is factored with Risk and thus is more related to the thrill-

seeking use of physical strength. By college age and adulthood Physical Activity and Prowess are viewed as a single factor with the emphasis apparently on using one's physical ability in sports.

Further evidence of construct validity is offered by a cross-national study in which the factor structure of the VS was found to be very similar in samples of students in Yugoslavia, Canada, and the United States (Sverko, 1982). Further, Lokan (1983) compared the factor structure of Portugal, Australia, and the United States and found similar results.

Predictive Validity

The accumulation of data for studies of the predictive validity of an instrument requires that it be in existence for some time. The instrument needs to have been made available long enough for longitudinal studies. The VS has only now reached the stage of completion at which data might be collected and set aside for later correlation with criterion data. It is the authors' intention to conduct such studies, since some of the norming of the VS was treated so as to allow for longitudinal tracking of subjects and criterion-data collection. Appropriate criteria for a values measure will not, presumably, be success data, but satisfaction, stability, and occupational discrimination data.

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Notes

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1. There are currently available several values inventories. The oldest values inventory, still a classic, is the Allport-Vernon *Study of Values* (1931; revised with Lindzey, 1960). This was developed as a measure for research with college students. It has a high-level vocabulary, and assesses primarily the intrinsic values.

Another values measure, the *Minnesota Importance Questionnaire* (Weiss, Dawis, & Lofquist, 1971), was developed for use primarily with blue-collar workers. It is widely used and has the advantages of an easy to understand vocabulary and of tapping more of the extrinsic as well as intrinsic values. Unlike the *Study of Values*, it deals directly with work. It is blue-collar oriented, and thus it has less appeal to college students and white-collar adults. The same may be said of the *Job Description Inventory* (Smith, Kendall, & Hulin, 1969), also a widely used measure.

The *Work Values Inventory* (Super, 1970) combines the advantages of tapping both intrinsic and extrinsic values; it is work oriented, and it appeals to a wide range of people from eighth grade up as well as to those in managerial occupations and to the professions. But it does not assess some values that have been found, in later work in this and in other countries, to be important to some people. It is strictly work oriented rather than facilitating the expression of values that may be sought in other, nonwork, activities. As its scales are based on only three items, some have marginal reliability coefficients (three items had in early work been found to be enough, but later, with larger samples, five or seven items were found to be desirable for some values).

2. When cross-national scoring the VS, the scoring instructions are somewhat different. Only the first three items on any scale should be used and the last scale, Economic Security, should be omitted. The Economic Rewards scale

should be titled "Economics," and the following substitutions should be made: (1) item 21 "be where employment is regular and secure" from the American Economic Security scale should be substituted for item 51 "be paid for whatever work I might do" in the cross-national Economics scale; and (2) item 106 "feel that I am treated fairly at work" should be substituted for item 58 "be with my kind of people" in the Social Relations scale. Not all countries included the WIS Cultural Identity and Physical Prowess scales which were made optional. The scores of the three items of each of the 18 to 20 cross-national scales are summed to give scale scores.

Theoretical Background

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Although theories of values have been well known in philosophy for many years, and values have been the subject of psychological research for decades (e.g., Allport & Vernon, 1931; revised with Lindzey, 1960), the literature abounds with confusing descriptions and definitions. According to some authors, values appear to be the same as interests; in the writings of other authors values resemble needs. Few authors have attempted to define values, interests, needs, and personality traits in ways that give them precise and distinctive meanings. Super (1973) offered the following in connection with his *Work Values Inventory* (Super, 1970):

Traits, values, and interests derive from needs. The need . . . leads to action, and action leads to modes of behavior or traits that seek objectives formulated in generic terms (values) or in specific terms (interests). Traits are ways (styles) of acting to meet a need in a given situation. Values are objectives that one seeks to attain to satisfy a need. Interests are the specific activities and objects through which values can be attained and needs met. (pp. 189-190)

Assessments of needs help us to understand the make-up of people and their traits, that is, *why* and *how* they do things; but they do not help us to predict educational or occupational behavior, that is, *what* they will do. Values and interests, on the other hand, are closer to actual life choices. Values are the objectives sought in behavior, and interests are the activities in which the values are sought. A given value, like a given need, may be satisfied in more than one kind of activity, but the connection between goal and activity is closer for values than for needs, while it is not as close as that for interests.

The VS is designed to measure both intrinsic and extrinsic values, the former being inherent in the activity, the latter concomitants or outcomes of the activity. Thus Ability Utilization and Creativity are intrinsic values, and Economic Rewards and Prestige are extrinsic values. The

former may be attained in the pursuit of interests as diverse as scientific research, professional football, painting, and social planning; the latter, in all of these and in business management, politics, and popular writing.

A Developmental Assessment Model for Career Counseling

A model of assessment for career guidance has been proposed by Super (1983), one that involves a truly developmental career assessment process. The model, slightly modified in Table 1, includes the psychological characteristics of career development. These are the centrality of values sought in work (Super, 1973), the relative importance of work (Super, 1983), and the level of career maturity (Super, 1955; Super & Thompson, 1979), and self-concepts (Holland, 1985; Super, Starishevsky, Matlin, & Jordaan, 1963) including a sense of autonomy and self-esteem (Korman, 1969).

Step I: Preview

As with many assessment models, the first step begins with a preview of what is to come: The initial step is to review the client's records, interview the individual, and make a tentative counseling plan based on a preliminary assessment.

It is after the first step that the Developmental Assessment Model differs from other models. Rather than begin with questions concerning abilities and interests, the Developmental Assessment Model tries to ascertain both the values that the counselee hopes to realize through the worker role and the relative importance of work to the counselee. In making an in-depth study of a counselee's

Table 1

A Developmental Assessment Model for career counseling*

<p>Step I. Preview</p> <ul style="list-style-type: none"> A. Assembly of background and experience data on hand B. Intake interview C. Preliminary assessment <p>Step II. Depth-view: further testing?</p> <ul style="list-style-type: none"> A. Values sought in each role <ul style="list-style-type: none"> 1. Intrinsic values <ul style="list-style-type: none"> a. Ability Utilization b. Creativity c. Aesthetics d. Altruism e. Personal Development f. Others 2. Extrinsic values <ul style="list-style-type: none"> a. Achievement b. Advancement c. Economic Rewards d. Prestige e. Economic Security f. Others B. Work salience <ul style="list-style-type: none"> 1. Relative importance of diverse roles <ul style="list-style-type: none"> a. Study b. Work and career c. Home and family d. Community service e. Leisure activities 2. Participation in each role 3. Commitment to each role 4. Knowledge of each role C. Career maturity <ul style="list-style-type: none"> 1. Planfulness 2. Exploratory attitudes 3. Decision-making skills 	<ul style="list-style-type: none"> 4. Information <ul style="list-style-type: none"> a. World of work b. Preferred occupational group c. Other life-career roles 5. Realism D. Self- and occupational concepts E. Level of abilities and potential functioning F. Field of interest and probable activity <p>Step III. Assessment of all data</p> <ul style="list-style-type: none"> A. Review of all standard data B. Values C. Work salience D. Career maturity <ul style="list-style-type: none"> 1. Individual and occupations 2. Individual and nonoccupational roles E. Planning communication with counselee, family, etc. <p>Step IV. Counseling</p> <ul style="list-style-type: none"> A. Joint review and discussion B. Revision or acceptance of assessment C. Assimilation by the counselee <ul style="list-style-type: none"> 1. Understanding the present 2. Understanding the meaning of work and other life roles 3. Exploration <ul style="list-style-type: none"> a. For maturing? b. In breadth for crystallization? c. In depth for specification? 4. Choice of preparation, training, or jobs? 5. Searches for job and other outlets? 6. Exploring self and situation for self-realization? D. Discussion of action implications and planning <ul style="list-style-type: none"> 1. Planning 2. Monitored execution 3. Follow-up for support and evaluation
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*Note: The values section has been somewhat elaborated.

career development and possibilities, the first question asked by some counselors (stressed and now made objectively assessable in the developmental model) is that of *readiness* to assess abilities and interests and to make self- and occupational-matching decisions. These questions involve values, work salience, and career maturity.

The next step is thus an in-depth study of these types of questions. As will be discussed later, several instruments were developed specifically for answering the questions raised in developmental counseling: the *Saliency Inventory* (Super & Nevill, 1986a), the *Values Scale* (Super & Nevill, 1986b), the *Career Development Inventory* (Super, Thompson, Lindeman, Jordaan, & Myers,

1979, 1981), and the *Adult Career Concerns Inventory* (Super, Thompson, Lindeman, Myers, & Jordaan, 1986).

Step II: Depth-View

The nature and outlets of values is an important assessment step in the Developmental Assessment Model (Super, 1973). For example, an individual might hold three important values: economic rewards, altruism, and physical activity. A job satisfying all three might not be possible, but by satisfying some values in other life roles the counselee's needs could be met. Economic rewards could be satisfied through the worker role, altruism through

engaging in church work or running for political office, and physical activity through amateur sports. An individual's values play a key part in the making of career decisions. The VS was developed to help answer these questions.

The importance of work and other roles to an individual is also an important component in career decision making. For those to whom work does not seem important, the attitudes and information involved in choosing a career must appear irrelevant (LoCascio, 1974; Richardson, 1974). Super and Nevill (1984; Nevill & Super, 1984) have shown that in adolescents the relative importance of work is more potent than class or sex in determining career maturity.

An individual's readiness for career decision making involves the degree of motivation for work or for a career. This is true whether work is seen as merely a means of survival, of using time and having friends, or of self-fulfillment (Super, 1976). If work has not been important to a high school or college student, or to a married homemaker, then scores on vocational interest inventories shed little light on occupational choice. Low scores on a career development inventory might only mean that occupations and their roles have played little part in that counselee's life. In this case it might be appropriate to try to arouse the counselee's awareness of and interest in work, or perhaps counseling should be aimed at the choice of and preparation for other roles such as those of leisurite, homemaker, and citizen active in community service (Super, 1984). The *Salience Inventory* (Super & Nevill, 1986a) was developed to help with these questions.

The level of the counselee's career maturity is also important. Five aspects of career maturity have been identified (Super & Thompson, 1979):

1. planfulness
2. exploratory attitudes
3. decision-making skills
4. information about developmental tasks and about occupations
5. realism

It is important to know the stage of development of the counselee. Does he or she have the attitude of planfulness (a tendency to plan ahead based on a sense of control, an awareness of the past and anticipation of the future, and a sense of autonomy)? Does he or she have exploratory attitudes (the habit of asking questions about occupations, the various life roles, and the developmental tasks to be encountered)? Does he or she have decision-making skills that can be applied to career decision problems? Does he or she have enough information about the world of work in general, the preferred occupational group, and other life-career roles to make an intelligent decision? Does he or she have a realistic appraisal of personal abilities and situational

demands? The *Career Development Inventory* (Super et al., 1979, 1981) was developed to answer all but the last of these questions; and the *Adult Career Concerns Inventory* (Super et al., 1986) to answer only the first. The questions about appraisal of personal abilities and situational demands can be answered by comparing an individual's aspirations with ability test and labor market information (Super & Overstreet, 1960).

Steps III and IV: Assessment and Counseling

After having gathered the relevant information and reviewed it with a consideration of both occupational and nonoccupational roles, the counselor and the counselee should meet to discuss the material. During this session the emphasis is on helping the counselee to understand the implications of the material. Clients need both to understand that they are in a developmental process and to have a clear view of their current career status and the attendant tasks. They need to understand what attitudes, knowledge, competencies, and decisions are appropriate for that level of development and what the next stage holds. Clients also need to see how their own values fit into the life roles of worker, student, homemaker, citizen, and leisurite.

Both the counselor and counselee need to understand the counselee's degree of preparation for making career decisions. Depending upon their level of preparation, clients need to engage in different types of career exploration. If clients need to be made aware of the developmental tasks that are being or are about to be confronted, then exploration may be needed for maturing, and for developing a readiness to cope with the tasks of career decision making. If clients need help in crystallizing a career choice, then exploration of the world of work may be needed to help them become aware of options and evaluate potential choices. If clients have a fairly good understanding of work in general, but need to make a specific choice, then in-depth exploration may be needed to expand their understanding of a particular occupation.

After the exploration process, the counselor and counselee should make an action plan; that is, whether to obtain further training or seek a job. Included in this decision would be a discussion of the possibilities for self-realization by other means than through the job. There should be a discussion of the implications of the plan and the counselor should monitor the action and provide follow-up support, evaluation, and further planning for the client if and as they are needed.

The Developmental Assessment Model is innovative in that it takes into account the importance of career readiness in making vocational and related career decisions. Central to this counseling process are issues such as the values sought in life, the importance of work in relation to the other life roles, and the level of career maturity. Only when this information is considered is it reasonable to begin

planning in terms of the individual's level of abilities or field of interests. A sample case of developmental assessment is reported at the end of Chapter IV.

Relationship Between Values and Roles

Values can be realized in many different life roles. Astin (1984) alludes to this interrelatedness when she states that

people whose jobs are repetitive and routine (e.g., typists or assembly line workers) often manifest a high level of job dissatisfaction and must seek to satisfy their pleasure needs in other pursuits. (p. 120)

Different values can be realized in the same role at different stages of life. For example, early in one's occupational career emphasis might be on attaining economic rewards. Later as one earns more money and occupies a higher position, social relations and altruism may be more consciously sought through the worker role. A value can also be realized in different roles at varying points in one's life. Thus a woman might satisfy her altruistic values through her homemaker role during her twenties, and through her worker role later in life (Nevill, 1984).

The understanding of the relationship between values and roles also sheds light on the concept of role conflict. Each individual occupies at least one position in society and is subject to a certain set of expected behaviors depending upon his or her role. In attempting to fulfill more than one role simultaneously, individuals find that they must satisfy multiple sets of expectations. Research (Nevill & Damico, 1978) has shown that women experience more conflict between home and employment when holding a low-status job than when occupying a high-status position, in spite of the heavy time and pressure demands of the latter. An insecure low-status job might only allow the woman to realize the value of altruism (for example, helping out the family) rather than also realizing the values of economic security (for example, being able to support herself adequately) and personal development (for example, developing one's abilities and interests). In the case of the woman combining a low-status job with homemaking, the two roles might be seen in conflict as the low-status job takes time away from homemaking without enabling her to realize other values. In contrast, the woman who combines a high-status job with homemaking would be able to realize her economic security and personal development values through paid employment even though her altruistic values are met primarily through activities at home. Thus, the two roles would complement each other and self-realization would result. Understanding the importance of value realization through multiple roles allows us to see that the

occupying of multiple roles does not necessarily lead to role conflict (Nevill, 1984).

The relationship between values and roles can also be seen in recent work by Yogeve and Brett (1985). They divided couples into two groups: dual-earner (both spouses employed outside the home) and single-earner (only one spouse employed outside the home). They found that the work and family attitudes and behaviors of one spouse are systematically related to those of the other spouse among dual-earner couples, but not among single-earner couples. In particular, the husband, regardless of the level of his commitment to the family, assumes increased family responsibilities when the wife's job is time consuming.

Administration, Scoring, and Scale Description

■ ■ ■ ■ ■ ■ ■ ■

The 105 scored items of the *Values Scale* (VS) yield 21 separate scales, each of which measures a value or satisfaction that most people seek in life. The VS scales constitute a comprehensive sample of the universe of values as evidenced by the Work Importance Study (WIS) literature review and the WIS research. The VS includes both intrinsic and extrinsic values.

The *Values Scale* of the Work Importance Study was developed to have the same wide range of values as the *Work Values Inventory* (Super, 1970), to cover the values that have emerged in recent research and to increase the reliability of the scales by increasing their length. In addition, it was believed that social changes since 1970 have made the collection of new data and new norms desirable, and that these combined needs make the development and standardization of a new instrument desirable. See Note 1 for a comparison of values measures.

Administration

The VS can be administered to high school, college, and adult populations in about 30 to 45 minutes. The less educated the client, the longer he or she will take to complete the VS. Reading level is about eighth grade. In school situations a regular class period is usually an ample amount of time. There are no right or wrong answers to the VS; the VS is a self-descriptive inventory.

Distribute the four-page reusable booklets and the answer sheets. Because the answer sheets can be either hand or computer scored, it is best to have them marked with a number pencil. Make sure a supply of pencils is available.

The front of the answer sheet should be filled out first (the front is the side with the demographic information).

The only information that is absolutely required for scoring is sex and some identification (either have the respondents fill out the name box or assign them identification numbers and have them marked in the identification number field). The other demographic information boxes are recommended for VS research or when collecting norms. For box number 10B, note that the back of the booklet contains sample occupations for each of the occupational groups. Refer respondents to the back of the booklet when answering this box.

Following completion of the demographic information have the respondents turn over the answer sheet. Refer to the booklet and have them read the first paragraph on the cover of the VS to themselves. Then say, "Turn to the inside cover and read it as I read it aloud." Be sure sure that the rating scale is understood:

1 means of little or no importance

2 means of some importance

3 means important

4 means very important

Show the respondents where the first question begins. Stress that all questions should be answered. Say: "Work rapidly, guess if you are not certain, and continue until all questions have been answered."

Scoring

The VS can be mailed to the publisher for scoring. Answer sheets with "Not-Prepaid Profile" in the upper-right-hand corner should have payment included when they are mailed

to the publisher. Not-prepaid scoring prices are listed in the Consulting Psychologists Press catalog.

The VS answer sheet was designed to facilitate hand scoring when the number of respondents is small. Figure 1 shows a hand-scored VS answer sheet. The 21 scales have five items each. Each scale corresponds to one of the 21 rows on the answer sheet. For example, row 1 contains the items on the Ability Utilization scale (items 1, 22, 43, 64, and 85), row 2 contains the items on the Achievement scale (items 2, 23, 44, 65, and 86), etc.

To score the VS add up the scores across each row. The score is the sum of the weights (1 to 4) given by the respondent to each item scored for each value. For example, the first value of the Ability Utilization scale is the rating (1, 2, 3, or 4) given to item 1 plus the rating given to item 22, plus the rating given to item 43, plus the rating given to item 64, plus the rating given to item 85.

In summary, the items for each value can be seen from the items in each row on the answer sheet. The scores for each value can be calculated by adding the numerical response (1 for *little or no importance*, 2 for *some importance*, 3 for *important*, and 4 for *very important*) for each of the items in the scale.

Item 106 is used only when scoring the VS for cross-national studies in which foreign versions of the WIS

Values Scale are used. See Note 2 for the cross-national scoring.

Scale Description

The 21 scales measured by the VS are shown in Table 2. Each scale consists of five items, at least two of which relate to work values and at least two of which relate to values in general. The one exception to this is the Working Conditions scale, in which all items are work values.

The VS begins with the partial sentence, "It is now or will in the future be important for me to . . .", followed by a series of completing statements. The first 21 statements of the VS are the first completing statements for each value scale in the order listed in Table 2; the next 21 statements are the second item for each scale, and so forth until each scale has been represented by five items (item 106 is used only on the cross-national VS, see Note 2). The statements are rated on a 4-point scale. Sample statements are shown in Table 2.

Table 2

VS scales and sample statements

Value Scale	Sample Statement
1. Ability Utilization	use all my skills and knowledge
2. Achievement	have results which show that I have done well
3. Advancement	get ahead
4. Aesthetics	make life more beautiful
5. Altruism	help people with problems
6. Authority	tell others what to do
7. Autonomy	act on my own
8. Creativity	discover, develop, or design new things
9. Economic Rewards	have a high standard of living
10. Life Style	live according to my own ideas
11. Personal Development	develop as a person
12. Physical Activity	get a lot of exercise
13. Prestige	be admired for my knowledge and skills
14. Risk	do risky things
15. Social Interaction	do things with other people
16. Social Relations	be with friends
17. Variety	have every day be different in some way from the one before it
18. Working Conditions	have good space and light in which to work
19. Cultural Identity	live where people of my religion and race are accepted
20. Physical Prowess	work hard physically
21. Economic Security	be where employment is regular and secure

Figure 1

Sample scoring of a Values Scale answer sheet

	LITTLE OR NO IMPORTANCE SOME IMPORTANCE IMPORTANT VERY IMPORTANT	Raw Scores of this respondent								
1	① ● ③ ④	22	① ② ● ④	43	① ② ● ④	64	① ② ● ④	85	① ② ● ④	14
2	① ● ③ ④	23	① ● ③ ④	44	① ② ③ ●	65	① ② ③ ●	86	① ② ● ④	15
3	① ② ● ④	24	① ② ● ④	45	① ② ③ ●	66	① ② ● ④	87	① ● ③ ④	15
4	① ② ● ④	25	① ② ● ④	46	① ② ● ④	67	① ② ● ④	88	① ● ③ ④	14
5	① ② ③ ●	26	① ② ③ ●	47	① ● ③ ④	68	① ② ● ④	89	① ② ③ ●	17
6	① ② ● ④	27	① ② ③ ●	48	① ② ③ ●	69	① ② ③ ●	90	① ② ● ④	18
7	① ● ③ ④	28	① ② ③ ●	49	① ② ● ④	70	① ② ● ④	91	① ② ③ ●	16
8	① ● ③ ④	29	① ② ● ④	50	① ② ● ④	71	① ② ● ④	92	① ● ③ ④	13
9	① ② ● ④	30	① ② ③ ●	51	① ② ● ④	72	① ● ③ ④	93	① ② ● ④	15
10	① ● ③ ④	31	① ② ③ ●	52	① ② ● ④	73	① ● ③ ④	94	① ② ● ④	14
11	① ② ● ④	32	① ② ● ④	53	① ● ③ ④	74	① ● ③ ④	95	① ② ③ ●	14
12	① ② ● ④	33	① ② ● ④	54	① ● ③ ④	75	① ② ③ ●	96	● ② ③ ④	13
13	● ② ③ ④	34	① ② ③ ●	55	① ● ③ ④	76	① ② ● ④	97	① ② ● ④	13
14	① ② ● ④	35	① ② ③ ●	56	① ② ● ④	77	① ② ● ④	98	① ● ③ ④	15
15	① ② ● ④	36	① ② ③ ●	57	① ② ● ④	78	① ② ● ④	99	① ② ● ④	16
16	① ② ● ④	37	① ② ③ ●	58	① ② ③ ●	79	① ② ③ ●	100	① ② ● ④	18
17	① ② ③ ●	38	① ② ● ④	59	① ② ● ④	80	① ● ③ ④	101	① ② ● ④	15
18	① ② ● ④	39	① ② ③ ●	60	① ● ③ ④	81	① ● ③ ④	102	① ② ③ ●	15
19	● ② ③ ④	40	① ● ③ ④	61	① ● ③ ④	82	① ② ● ④	103	① ② ③ ●	12
20	① ② ● ④	41	① ● ③ ④	62	① ● ③ ④	83	① ② ● ④	104	① ② ● ④	13
21	① ② ● ④	42	① ② ③ ●	63	① ② ③ ●	84	① ② ③ ●	105	① ② ● ④	18
								106	① ② ③ ●	

The scale names are as follows:

Row	Scale	Row	Scale	Row	Scale
1.	Ability Utilization	8.	Creativity	15.	Social Interaction
2.	Achievement	9.	Economic Rewards	16.	Social Relations
3.	Advancement	10.	Life Style	17.	Variety
4.	Aesthetics	11.	Personal Development	18.	Working Conditions
5.	Altruism	12.	Physical Activity	19.	Cultural Identity
6.	Authority	13.	Prestige	20.	Physical Prowess
7.	Autonomy	14.	Risk	21.	Economic Security

Be sure to read all the directions in the question booklet before proceeding. Please read each statement carefully. Then use the following scale to show how important that value is to you:

- 1 means **Of Little or No Importance**
- 2 means **Of Some Importance**
- 3 means **Important**
- 4 means **Very Important**

Make a black mark filling in the circle which contains the number that shows how important the value is, like this: Have lots of fun 1 2 3 4
Please answer all of the questions.

LITTLE OR NO IMPORTANCE
SOME IMPORTANCE
IMPORTANT
VERY IMPORTANT

LITTLE OR NO IMPORTANCE
SOME IMPORTANCE
IMPORTANT
VERY IMPORTANT

LITTLE OR NO IMPORTANCE
SOME IMPORTANCE
IMPORTANT
VERY IMPORTANT

LITTLE OR NO IMPORTANCE
SOME IMPORTANCE
IMPORTANT
VERY IMPORTANT

LITTLE OR NO IMPORTANCE
SOME IMPORTANCE
IMPORTANT
VERY IMPORTANT

MARKING INSTRUCTIONS

- Use a soft (No. 2), black pencil. Make dark, heavy marks that fill the bubble.
- Mark **ONLY** the bubble areas. Fill in only one response bubble per item.
- Erase completely any answer you wish to change. Make no stray marks.
- Please try to answer every question.

EXAMPLES:

Proper Mark:



Improper Marks:



1	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	22	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	43	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	64	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	85	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
2	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	23	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	44	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	65	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	86	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	24	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	45	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	66	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	87	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	25	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	46	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	67	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	88	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
5	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	26	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	47	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	68	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	89	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
6	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	27	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	48	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	69	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	90	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
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10	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	31	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	52	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	73	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	94	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
11	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	32	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	53	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	74	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	95	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
12	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	33	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	54	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	75	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	96	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
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14	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	35	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	56	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	77	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	98	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
15	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	36	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	57	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	78	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	99	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
16	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	37	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	58	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	79	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	100	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
17	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	38	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	59	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	80	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	101	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
18	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	39	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	60	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	81	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	102	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
19	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	40	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	61	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	82	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	103	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
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								106	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4

DO NOT MARK IN SHADED AREAS



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